

UFS



Underfloor systems

Middle East

2020/2021

Building Connections

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Underfloor systems from Ackermann made by OBO offer solutions for electrical installations in the floor. The electrical installation duct and trunking systems on offer are suitable for mounting in screed or concrete. A wide range of device installation units gives the user access to power, data and multimedia connections.

Underfloor systems guarantee safe, flexible cable routing in the floor, taking the structural and standardisation requirements into account. The area of application for underfloor installation ranges from office and administrative buildings, through commercial exhibition areas right up to the construction of living accommodation. There is a range of installation solutions to meet the many construction and extension specifications.



Principles of planning

Installation requirements

The following belong to the installation requirements to be taken into account when planning and selecting an underfloor system:

- Number of services (power, communications, data)
- Filling factor of the electrical installation ducts and trunking
- Cable bend radii
- Reserve
- Concurrency factors
- Planned for indoor use

Requirements from construction planning

The architectural building planning produces, amongst other things, the following preconditions:

- Type of room (dry or wet)
- Floor covering version (dry or wet-cleaned)
- Thickness of the floor covering
- Type and version of the screed
- Traffic loads
- Ambient temperature (underfloor heating)
- Indoors

Organisational requirements

Areas of application and user requirements with regard to electrical installations determine the organisation requirements for an underfloor system. This produces, amongst other things, the following criteria:

- Flexibility of use (e.g. simple adaptation to changing use specifications)
- Easy changing of device equipment
- Use of fixed or movable installations

Safety requirements

The topic of safety is playing an ever-more important role, particularly in the data technology sector. Therefore, when selecting and designing an underfloor installation, this point can also be of importance. This is the case, for example, when data networks must be protected against unauthorised access.



Ackermann is now OBO Bettermann

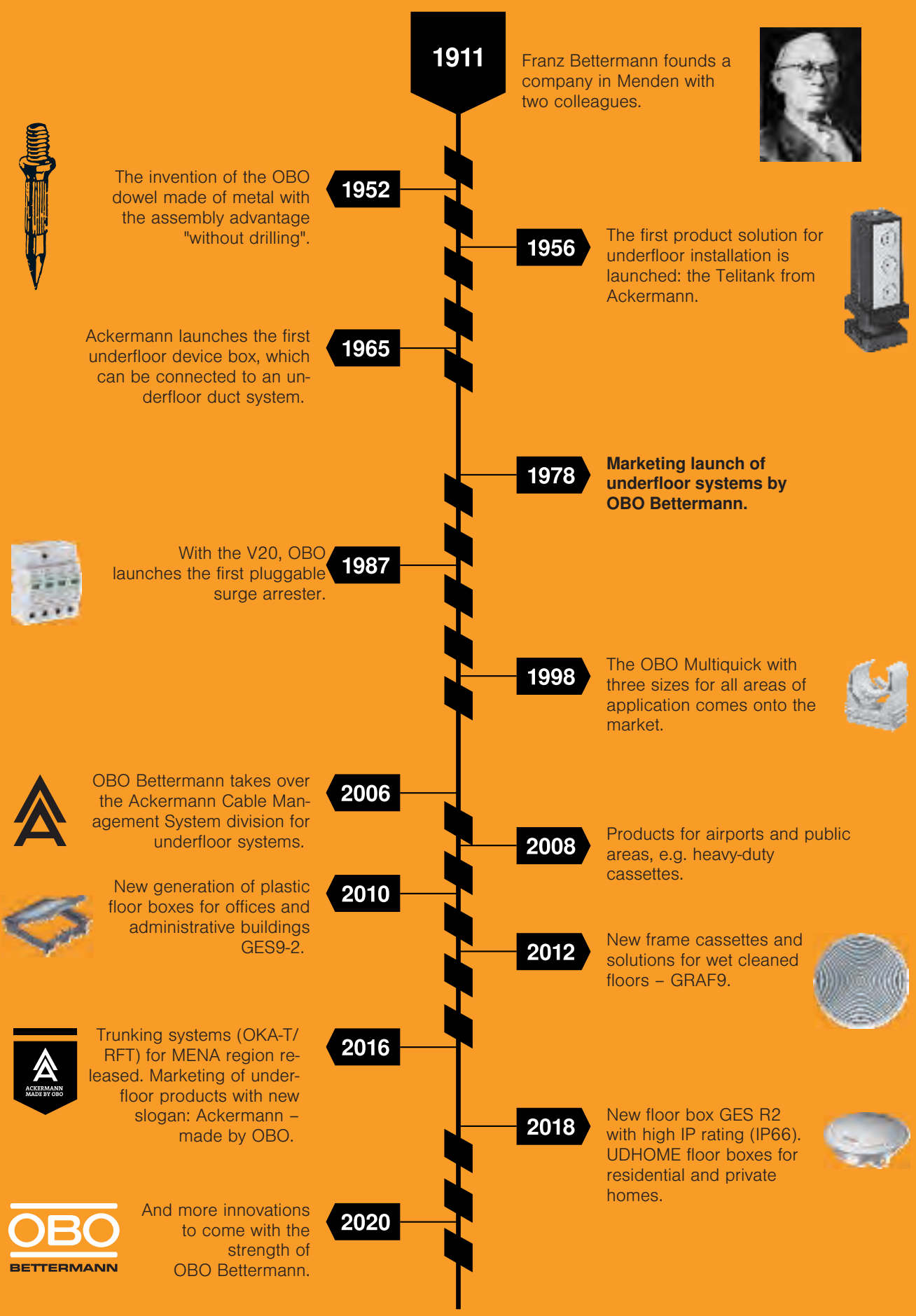
From 2006 onwards, OBO Bettermann took over the manufacture of the underfloor systems from the company Ackermann, which was founded in 1919. Since that time, OBO Bettermann has further developed and produced underfloor systems under the Ackermann brand. In order to maintain the global identity and standing of the brand, being synonymous with products of the highest quality in the area of underfloor systems, the well-known name was kept - Ackermann - made by OBO.

OBO Bettermann wants to communicate the benefits of our strong and global brand in a clear and uniform way to our customers. Therefore, we will waive and no longer use the brand suffix of Ackermann.

This means that the transformation from Ackermann to OBO Bettermann has now been completed.

For our customers nothing will change. The underfloor systems will continue to provide the proven and versatile solutions for electrical installations in the floor that our customers are used to - and that are always matched perfectly to the different application areas.

More than 100 years of OBO Bettermann



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Screed structure



Nominal screed thickness for EÜK screed-covered duct system

An important precondition for a proper underfloor installation is the screed structure. In the case of a screed-covered system, it is important that the screed thickness over the duct corresponds to the values in the standard, to avoid the formation of cracks. The nominal screed thickness is dependent on the insulation layer, the individual load and the screed type. More detailed information on the nominal thickness of the screed in Germany can be found in DIN 18560.

Here, under certain circumstances, chemical or thermal loads may occur, which require special additional measures to protect the mounted system.

The OKA and OKB screed-flush trunking systems, as well as the UZD underfloor box, only obtain their load capacity for correct use when jointed to the neighbouring screed.

The following points are, therefore, important:

- The duct system may not be walked upon or subjected to similar loads after it has been mounted on the raw concrete
- The duct system must form a composite system with the adjacent screed

The following points should particularly be taken into account with the OKA and OKB system:

- Line the side profiles with screed to achieve good static support in the screed. The screed should be worked and compacted carefully
- The opened trunking system may not be walked upon nor subjected to similar loads. Measures to provide suitable protection should be agreed with the works supervisor



Use in floating screed

When using screed-covered duct and screed-flush trunking systems in float finishes, seal off any openings in the duct and trunking systems using suitable agents (e.g. adhesive tape). In so doing, ensure that the sealing process does not create any cavities between the components and the screed.

With screed-covered duct systems, openings may be created through duct joints on connecting shackles and vertical bends and on the underfloor socket bodies. In addition, the top ends such as the mounting protection lid, mounting lid and the blanking lid should be covered or stuck down using suitable means.

With screed-flush trunking systems, openings may be created through joints of the trunking units, at junctions, extension units and end sections and at the transition of the trunking bases to the side profiles. The side profiles and lid joints on the trunking covers should also be covered.

Use in poured asphalt

When using electrical installation duct systems in poured asphalt, it is important to protect the duct system against the impact of heat.

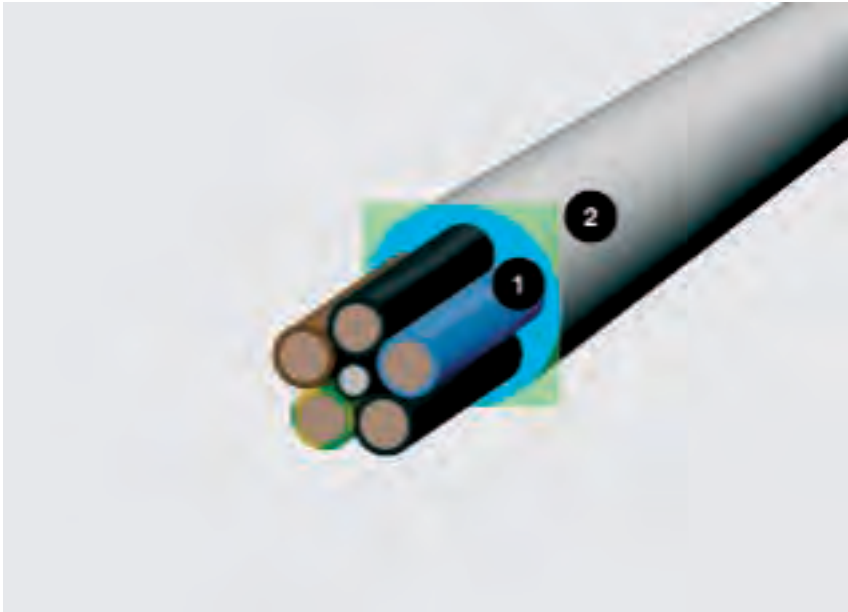
The screed-covered ducts may not, under any circumstances, have a direct connection with the poured asphalt. The high installation temperature of approximately 250 °C means that changes to the shape of metallic parts cannot be ruled out. An insulation layer, e.g. made of Fasoperl plates or bitumen corrugated card, protects the duct sections from the impact of heat.

Also, the screed-flush trunking may not, under any circumstances, have a direct connection with the poured asphalt. Screed anchors are the exception here. An approximately 15–20 mm thick insulation strip is fastened to both sides of the trunking before the poured asphalt is added. After cooling, the insulation strip between the trunking and the screed plate is removed and filled using a suitable casting compound.

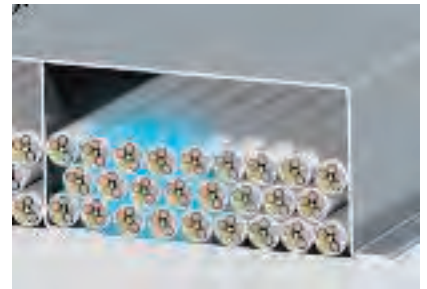
Aggressive screed (e.g. magnesia screed)

All the metallic parts coming into contact with an aggressive screed must be protected during construction using a tested epoxy resin-based corrosion protection agent. A second coating is required.

Determining the cable volume



Cable diameter and space required: 1 = diameter in mm, 2 = space required in cm²



The space requirements of the cables in the UFS ducts with empty spaces

The cable volume is an important criterion for the selection of the required duct size of the underfloor system. To simplify your work, we have listed the diameter and space requirements of the most important cable types on this double page.

Important: These values are average values, which may vary from manufacturer to manufacturer. Please refer to the manufacturer's specifications for the exact values.

Calculation with the formula $(2r)^2$

As the cables are never packed tightly together or absolutely parallel, it is not enough to base the volume calculation solely on the cable diameter. A realistic calculation is provided by the formula $(2r)^2$. This value reflects the realistic space requirements, including the compartments.

Cable volume



Insulated power cables

Type	Diameter mm	Usable cross-section cm ²
1 x 4	6.5	0.42
1 x 6	7	0.49
1 x 10	8	0.64
1 x 16	9.5	0.9
1 x 25	12.5	1.56
3 x 1.5	8.5	0.72
3 x 2.5	9.5	0.9
3 x 4	11	1.21
4 x 1.5	9	0.81
4 x 2.5	10.5	1.1
4 x 4	12.5	1.56
4 x 6	13.5	1.82
4 x 10	16.5	2.72
4 x 16	19	3.61
4 x 25	23.5	5.52
4 x 35	26	6.76
5 x 1.5	9.5	0.9
5 x 2.5	11	1.21
5 x 4	13.5	1.82
5 x 6	14.5	2.1
5 x 10	18	3.24
5 x 16	21.5	4.62
5 x 25	26	6.76
7 x 1.5	10.5	1.1
7 x 2.5	13	1.69

Insulated power cables

Type	Diameter mm	Usable cross-section cm ²
1 x 10	10.5	1.1
1 x 16	11.5	1.32
1 x 25	12.5	1.56
1 x 35	13.5	1.82
1 x 50	15.5	2.4
1 x 70	16.5	2.72
1 x 95	18.5	3.42
1 x 120	20.5	4.2
1 x 150	22.5	5.06
1 x 185	25	6.25
1 x 240	28	7.84
1 x 300	30	9
3 x 1.5	11.5	1.32
3 x 2.5	12.5	1.56
3 x 10	17.5	3.06
3 x 16	19.5	3.8
3 x 50	26	6.76
3 x 70	30	9
3 x 120	36	12.96
4 x 1.5	12.5	1.56
4 x 2.5	13.5	1.82
4 x 6	16.5	2.72
4 x 10	18.5	3.42
4 x 16	21.5	4.62
4 x 25	25.5	6.5
4 x 35	28	7.84
4 x 50	30	9
4 x 70	34	11.56
4 x 95	39	15.21
4 x 120	42	17.64
4 x 150	47	22
4 x 185	52	27
4 x 240	58	33.6
5 x 1.5	13.5	1.82
5 x 2.5	14.5	2.1
5 x 6	18.5	3.42
5 x 10	20.5	4.2
5 x 16	22.5	5.06
5 x 25	27.5	7.56
5 x 35	34	11.56
5 x 50	40	16

Telecommunications cables

Type	Diameter mm	Usable cross-section cm ²
2 x 2 x 0.6	5	0.25
4 x 2 x 0.6	5.5	0.3
6 x 2 x 0.6	6.5	0.42
10 x 2 x 0.6	7.5	0.56
20 x 2 x 0.6	9	0.81
40 x 2 x 0.6	11	1.12
60 x 2 x 0.6	13	1.69
100 x 2 x 0.6	17	2.89
200 x 2 x 0.6	23	5.29
2 x 2 x 0.8	6	0.36
4 x 2 x 0.8	7	0.49
6 x 2 x 0.8	8.5	0.72
10 x 2 x 0.8	9.5	0.9
20 x 2 x 0.8	13	1.69
40 x 2 x 0.8	16.5	2.72
60 x 2 x 0.8	20	4
100 x 2 x 0.8	25.5	6.5
200 x 2 x 0.8	32	10.24



Coax cable (standard)

Type	Diameter mm	Usable cross-section cm ²
SAT/BK cable	6.8	0.48



IT cables type Cat...

Type	Diameter mm	Usable cross-section cm ²
Cat. 5	8	0.64
Cat. 6	8	0.64

Device installation units

Device installation units offer installation space for power, data and multimedia connections in the floor structure. Various solutions are available, depending on the application.

GES service outlets

The GES service outlets are the tried-and-trusted solution for office installations with carpeted floors. They are available in plastic or metal. The service outlets possess countless intelligent details, such as cable routing clips, carpet protection frames, reliable edge protection and a locking lid closure system with automatic lid opening.



Cassettes

The compact, floor-flush cassettes can be adjusted to the height of the floor and can be completely decoupled from the socket base. Cassettes are particularly suitable for floor coverings such as tiles or parquet. There are various versions for dry, moist and wet-cleaned floor coverings. Stainless steel and brass not only look good, they also provide lasting quality.



GES R2 floor sockets

The OBO GES R2 floor sockets are an ideal under-floor solution, when a discreet appearance, a high load capacity and varied functionality are required. Their handling is simple: Pipelines are inserted in the compact installation space and that space is closed off with a lid. The installation socket of the GES R2 floor sockets is pre-equipped with two sockets. To the side of the socket, there is space for up to two connection sockets for data technology applications, as an option.



UDHOME floor sockets and floor boxes

Completely pre-equipped mounting units are available under one order number. The floor sockets and floor boxes of the UDHOME family are mounted directly on the raw concrete and connected with flexibly installation pipes – it couldn't be simpler.



Selection of the right device installation units

IP protection class to EN 50085-2-2

Electrical installation duct and trunking systems and device installation units can be used only in interior areas of buildings and, depending on the construction type, in dry, moist or wet-cleaned floors. The cleaning type of the floor covering is the decisive criterion for the selection of the matching device installation unit. The matching of the device installation unit to

the floor care type ensures that the electrical installation is protected against the ingress of moisture and dirt.

Ackermann made by OBO device installation units are tested according to EN 50085 and labelled appropriately. With a protection rating of at least IPx4 when closed, all the device installation units for wet-cleaned floors completely fulfil the requirements of EN 50085-2-2.

Device installation units with tube body also protect the electrical installation against the ingress of water when used – despite a reduced protection level of IP20. The tube body ring meets the standard requirements to EN 50085-2-2 and protrudes 10 mm above the top edge of the floor covering. Up to this height, puddles or waves of water cannot ingress into the installation compartment.

IK protection types

The IK classification to EN 50102 grades the mechanical stability of electrical installation duct and trunking systems.





Protection ratings to IP and IK for device installation units

	IP when used	IP when unused	IK
Plastic GES	20	40	08
Stainless steel GESM	20	40	10
Metal GRAF9	20	65	10
Cassette, cord outlet RKS	20	40	10
Cassette, tube body RKF	20	65	10
Cassette, blank	20	65	10
UDHOME	20	40	10
UDHOME tube body	20	65	10
GES R2 metal	20	66	10
GES R2 plastic	20	40	10

Dry cleaning

Textile floor coverings, cleaned by sucking up the dirt without or with only a little fluid, are considered as dry-cleaned. If a cleaning solution is used, then the dosage must be so low that there is no chance of puddle formation or saturation of the floor covering.

Moist cleaning

Smooth floor coverings such as linoleum, PVC, sealed wooden floors or polished stone floors fulfil the requirements for moist cleaning. The building cleaning trade defines this type of cleaning as a dust-collecting wipe using moist or prepared cleaning textiles.

Wet care

Wet cleaning occurs primarily with stone floors, tiles, ceramic floors, linoleum and PVC. This cleaning method removes particularly tough and bonded soiling.

In the first step, cleaning textiles apply as much cleaning fluid as is necessary to soften and dissolve strongly adhering soiling. In the second step, the remaining fluid and soiling is wiped up using cleaning textiles.



Standardisation and testing

Responsibilities in standardisation

Standards can be divided into two categories: Erection specifications and device testing specifications. The installation engineer is primarily responsible for compliance with the erection specifications. In Germany, the standards of the DIN VDE 0100 series define the most important requirements for electrical installations.

European standardisation

Device testing specifications are product standards, which specify the testing criteria for specific products. The manufacturer is responsible for compliance with these regulations. Conformity with a specific testing specification is often documented by a symbol approval certificate. This confirms that an independent testing and certification institute has carried out the appropriate tests and documented the results.

Device testing specifications are particularly important for:

- Safety (protection against electric shocks)
- The definition of the areas of application
- The function definition
- The evaluation of load capacities

The standard EN 50085 defines the requirements for electrical installation duct systems. Part 2-2 deals with underfloor and on-floor systems and was published in July 2009. Underfloor systems from Ackermann made by OBO meet EN 50085-2-2 and have the corresponding VDE certificates of approval.

Classification for underfloor systems

EN 50085-1, as a general part for electrical installation trunking systems, and EN 50085-2-2, as a system-specific part for underfloor systems, both require classification of the products. This means there is a standard Europe-wide specification of product properties. For the first time, a standard for installation systems also contains optional load tests for vertical loads, which affect a large area (heavy load).



Classification to EN 50085-1

6.1	According to material
6.2	According to impact resistance
6.3	According to temperatures
6.4	According to the resistance to flame propagation
6.5	According to the electrical conductivity
6.6	According to electrical insulation capability
6.7	According to the protection ratings offered by the housing or casing to EN 60529:1991
6.8	According to protection against corrosive or impure substances
6.9	According to the fastening type of the system duct cover
6.10	According to the electrical protection separation

Classification to EN 50085-2

6.101	Depending on the type of floor care
6.102	According to resistance to vertical loads affecting a small surface area
6.103	Optional classification according to resistance to vertical loads affecting a large surface area

Installation specifications



Erection regulations are used particularly for:

- Safety (protection against electric shocks)
- The maintenance of electrical functionality
- Electromagnetic compatibility
- Fire prevention

The erection specifications according to DIN VDE describe numerous points, which the electrical installation engineer must take into account when setting up and mounting an underfloor system. Here are some of the most important points:

Mechanical loads of cables

According to DIN VDE 0298, with heavy current and data cables it must be ensured that specific values for strain loads and bend radii are not exceeded. The standard also describes the approved cable fastening types with clips and strain reliefs.

Protective measure and equipotential bonding

Metallic duct systems must be included in the protective measure and the equipotential bonding. This should thus ensure the protection against electric shocks to DIN VDE 0100-410 and the electromagnetic compatibility to EN 50310, EN 50173, EN 50174-2.

Separation of different services

According to DIN VDE 0100-520, cables of different current types may be installed together in a routing system if all the cables are insulated against the next highest occurring voltage.

Fire protection

The main cause of fire in heavy current cables are

- high-resistance short circuits or faults to earth, e.g. on mechanically or thermally damaged cables
- faulty electrical connections, e.g. due to a loose contact
- heat build-ups

The spreading of fire and smoke into other fire sections must always be prevented over a sufficiently long period of time. This supports both attempts to escape and also extinguishing measures. This also applies to underfloor systems which run under fire section and emergency and escape routes. The cable system directives (M)LAR and the system floors directive (M)SysBöR regulate this in greater detail.

Heavy current cables and other electrical resources in underfloor installations

Select the size of the electrical installation ducts so that the required number of cables can be routed without damage.

When selecting the heavy current cables for routing in electrical installation ducts, observe DIN VDE 0100, particularly Part 520. With regard to the current carrying capacity of heavy current cables, see DIN VDE 0100 Part 430 and Part 523 and DIN VDE 0298, particularly Part 4.



Equipotential bonding in underfloor systems

According to EN 50085, electrically conductive electrical installation duct systems and their expansion components must offer the connection options to be included in the equipotential bonding of a building.

The inclusion in the equipotential bonding prevents dangerous potential differences according to DIN EN 50310. All the underfloor systems from Ackermann made by OBO are equipped in such a way that inclusion in the protection measure is possible without a great amount of work.

The protective conductor connection bracket 8AWR, for example, can be used to include a duct system in the equipotential bonding. The protective conductor connection bracket is inserted in the existing installation markings or in appropriate grooves. The fastening screw must be tightened with a torque of at least 1.2 NM. The clamping range is designed for two connection cables of 1.5 to 4 mm².

DIN EN 50174-2 (VDE 0800-174-2) "Information technology – Cabling installation" requires the inclusion of conductive installation systems in the additional functional equipotential bonding up to the connection point. This equipotential bonding does not serve as protective equipotential bonding, but serves as functional equipotential bonding for EMC protection.

The electrical planner and the electrical installation engineer is responsible for the implementation of the protective measure and compliance with the erection requirements valid on-site.

Inter-unit work

The electrical installation engineer should arrange the coordination of inter-unit work with the responsible construction management, in order to guarantee flawless mounting of the electrical installation duct systems, along with quality across all the construction sections.



Screed work

Screed-flush trunking systems and the underfloor boxes of the screed-covered duct system serve as a binding draw-off gauge for the screed. The adjustment height of the system components is aligned to the structural specifications of the construction management.

In the area of the draw boxes and the ducts, the person laying the screed must carefully work, compact and draw-off the screed.

Screed can be destroyed by crack formation. To avoid crack formation, adjacent screed-flush systems and system components may not be subjected to loads before final hardening.

Floor covering work

The company laying the floor covering is responsible for ensuring that the floor covering is cut out exactly and adjusted to the sockets and outlet points of the duct system. The joint dimensions must be matched with the construction management. The lids of the screed-flush underfloor boxes and trunking must be covered with floor covering. Carpets used must be securely laid and resistant to cuts.

Building cleaning

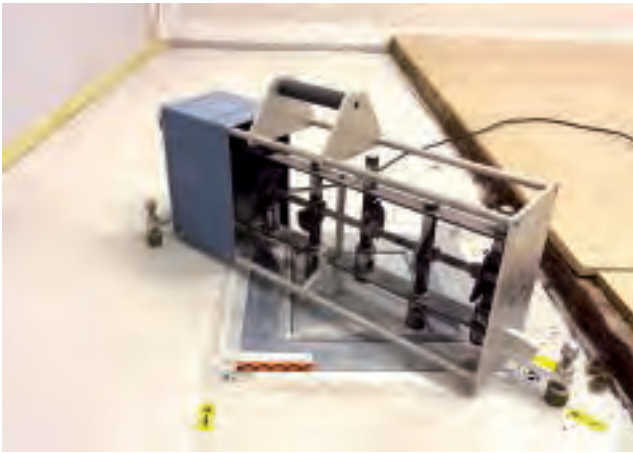
Particularly during first cleaning of the floor areas, device installation units must be carefully cleaned free of building dust and other impurities, in order to prevent impairment of their function.

During the use phase, device installation units must be checked for correct use and possible damage, in order to avoid subsequent damage.

In particular, device installation units for wet-cleaned floors (e.g. tube body cassettes, GRAF9 or GESR2) must be maintained regularly and the function of the seal checked. For this, regular lubrication of the seal is required.



Noise prevention and impact noise



The underfloor systems from Ackermann made by OBO are, amongst other things, intended for installation in floating wet screeds. Normally, there are requirements for the transmission of air and footfall sound, both for vertical sound transmission, i.e. from storey to storey, and for horizontal sound transmission, i.e. from adjacent rooms.

As the underfloor systems are also run under partitions, there is frequently the question of the influence of the system on noise transmission. These influences were evaluated in qualified tests to determine the transmission of air and footfall sound carried out together with the MÜLLER BBM GmbH testing institute in Planegg, Munich, for the EÜK duct and OKA, OKB trunking systems and the UDHOM4 floor boxes.

For office buildings, a distinction must be made between the binding construction law requirements to DIN 4109 [4], which must be observed with regard to air and footfall sound insulation between foreign areas of use, and between the recommendations for protection against air and footfall sound in the same office, e.g. to Supplementary Sheet 2 for DIN 4109 [4] or the VDI directive 2569 [5]. The VDI directive 2569 is currently being revised.

The following table summarises the requirements of DIN 4109 [4] and the recommendations according to Supplementary Sheet 2 of DIN 4109.

Component	Evaluated noise insulation dimension R'w in dB to DIN 4109 and Supplementary Sheet 2 to DIN 4109	Evaluated noise insulation dimension R'w in dB to DIN 4109 and Supplementary Sheet 2 to DIN 4109
Ceilings		
Separating ceilings within own use areas	52...55	46...53
Separating ceilings between other use areas (construction law requirement)	54...55	53
Walls¹		
Walls between rooms with normal office activities or between corridors and such rooms	37...42	-
Walls between training rooms or similar and between corridors and such rooms	47	-
Walls of rooms for concentrated mental work or for dealing with confidential matters or walls between corridors and such rooms	45...52	-
Doors²		
Doors in corridor partitions of rooms with usual office activity	27	-
Doors in corridor partitions of training rooms	32	-
Doors in corridor partitions of rooms for concentrated mental work or for dealing with confidential matters	37	-

¹ Without taking doors into account.

² With doors, the evaluated sound insulation dimension R'w applies as the value for sound insulation for sole transmission through the door in a function, installed state.



Planning checklist

The following topics should be observed for the correct installation of an underfloor system and may need to be agreed with different units:

- ✓ Adjustment of the specified cutting check with the construction management for checking of the raw building dimensions and for the adjustment of the duct system's height
- ✓ Testing of the mounting surface for uneven areas to 18202 Tab. 3
- ✓ The mounting area must be protected against weather and be free of rubble and foreign bodies, i.e. have been swept clean
- ✓ Observation of fire protection directives, load requirements and impact sound measures
- ✓ Detailed routed diagram including positioning of the necessary system components
- ✓ Parameters for floor structure, floor type and cleaning, screed height
- ✓ Parts list of the articles used in the project
- ✓ Floor design of the responsible architect





EÜK screed-covered duct system

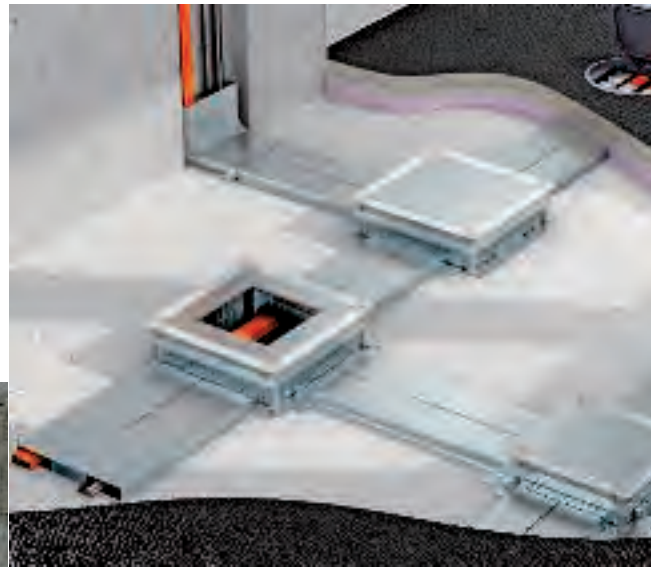
The EÜK screed-covered duct system from Ackermann made by OBO is the ideal electrical installation system for large areas with fixed furnishing plans, for example in office or administration buildings. Duct sections and underfloor boxes form a tight grid, hidden in the screed, for cable routing. When combined with device installation units, access is given to power, data and multimedia technology.



Wide range of uses

The EÜK system is suitable for all screed types, e.g. for cement screeds, poured asphalt, floating screeds or heated screeds. The completely closed duct system protects the routed cables and repels footfalls, dust and dirt during everyday construction site work.

Depending on the construction project, the system offers solutions for floor structures with increased load requirements and for dry, moist and wet-cleaned floor coverings.



Ideally suitable for wet cleaning



Suitable for the highest loads and expandable as a heavy-duty system



In use around the world for decades

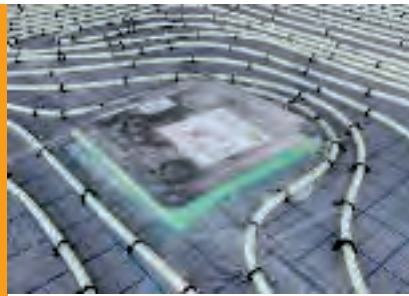
Quality at every level

The ducts and underfloor boxes of the EÜK system are mounted directly on the raw concrete. To protect against heat losses and the reduction of footfall sound, insulation layers are inserted, which surround the duct system completely.

Optionally, underfloor heating can be installed for wide-area heat distribution and is then covered by the screed. The screed thickness above the duct is to be specified in accordance with DIN 18560.

Combination with underfloor heating

The EÜK system is ideally suited to installation in floors, in which there is underfloor heating in the screed. The duct system is below this and is thus completely separate in the insulation layer.





Large height-adjustment range

The underfloor boxes in the three basic heights cover a height-adjustment range of between 70 and 220 mm screed height. At low screed heights of 55 mm or more, System 55 is used, whilst, with high floor structures, the underfloor boxes can be raised to up to 320 mm.



Tested quality

The load capacity of the EÜK system has been tested to DIN 50085-2-2. In its own BET Test Centre, OBO also carries out its own load tests for the system. Thus, even special solutions can be tested within a short time.



Practical – all over the world

The EÜK system is one of the most popular underfloor systems. Planners around the world rely on its variety, reliability and flexibility. Thus, in co-operation with OBO, numerous challenging construction projects have been completed. This is also because we make special demands of our products.

Thus, for example, the covers and accessory parts in the heavy-duty sector offer continuously high levels of stability – well beyond those required by the standard. According to DIN EN 50085-2-2, temporary bending by 6 mm is permissible. However, in practice, such severe bending can lead to damage, depending on the floor covering. Thus, we use practice-orientated benchmarks to check that the products can stand up to all the requirements on the building site and during later use.





Experts in the under-floor sector

The EÜK system was the first underfloor system as we know it today in Europe. The system was presented for the first time in 1965 and, since then, has been continually adapted to installation practices. For five decades, planners, architects and customers have relied on the tried-and-trusted technology for creating a high level of flexibility in underfloor electrical installations.

Installation of the system components

Vertical bend

The matching vertical bends allow the creation of vertical changes of direction, e.g. as a connection to wall connections or supplies.



System sizes, ducts

The ducts are available in the heights 28, 38 and 48 mm, and in the widths 190, 250 and 350 mm. Fixed sheet steel separating retainers divide the ducts up into two or three duct compartments.

Underfloor accessory socket



The underfloor box (UGD) is intended for device installation. It is supplied with a mounting lid and a lid blanking plate. Depending on the version, it is designed for the installation of round or rectangular installation units.

Underfloor junction and branch box

The underfloor draw and junction box (UZD) serves as the access point to the electrical installation in the ducts. It can be equipped with a mounting lid for device installation.



Equipotential bonding

Connection shackles create a conductive connection between the two inserted pieces of duct.



System sizes, underfloor boxes

The type UZD and UGD underfloor boxes are available in two system sizes:

- System size 250 (367 x 410 mm)
- System size 350 (467 x 510 mm)



Robust and easy to mount

The underfloor boxes of the EÜK system possess an extremely robust socket body. They are ideally suited to construction site operation with its dirt, dust and being stepped upon. Installation is easy thanks to the practical rapid height adjustment and the large, tidy installation space.

Height adjustment



The underfloor boxes have a minimum structure height of 70 mm and a height-adjustment range of an additional 55 mm.

The height adjustment takes place in two stages: Firstly, the underfloor box is roughly pre-adjusted to the screed height using the integrated quick height-adjustment function. In the second step, the fine adjustment to the top edge of the screed is carried out using a screwdriver.



Completely reliable

The sidewalls of the underfloor boxes are made of galvanised sheet steel. Their stable corner elements are made from die-cast zinc. On the surface, stable aluminium profiles provide an elegant, load-bearing end.



Closed

The solid system shows its strengths during the construction phase. It is always completely closed. The underfloor boxes are protected from above by the mounting protection lid. Thus, no foreign bodies can ingress and the interior remains clean.



Range of functions – a fixed point

When installed, the underfloor box is securely anchored in the screed. The screed can be worked particularly well around the drip edge of the socket, which also serves as a broad support in the screed.

Large, protected installation space

The underfloor boxes of the EÜK system possess completely closed metallic sidewalls. Thus, the installation space remains tidy and also offers plenty of space for cable routing. The full height is available for installations.



ANN 7400340 S3/350-38 CE VDE MADE IN

Noise protection

After screed laying, the top frame of the underfloor box can be decoupled from the box base. The frame then floats on the screed plate, without any connection to the raw concrete. The complete decoupling of the top frame of the box and the resulting separation from the concrete means that no noise is transmitted via the duct system and the underfloor boxes.

This means that the noise insulation damping of the floating screed is not impaired by the EÜK system. This has been proven by a noise protection survey of the EÜK system.



Wide support in the screed

The cover of the underfloor box has a wide aluminium profile, which is positioned in the screed. This gives the entire socket an especially high level of stability, preventing damage to the floor covering.

The stable aluminium profiles at the edge of the socket serve as a drip edge for the screed and permit exact installation.

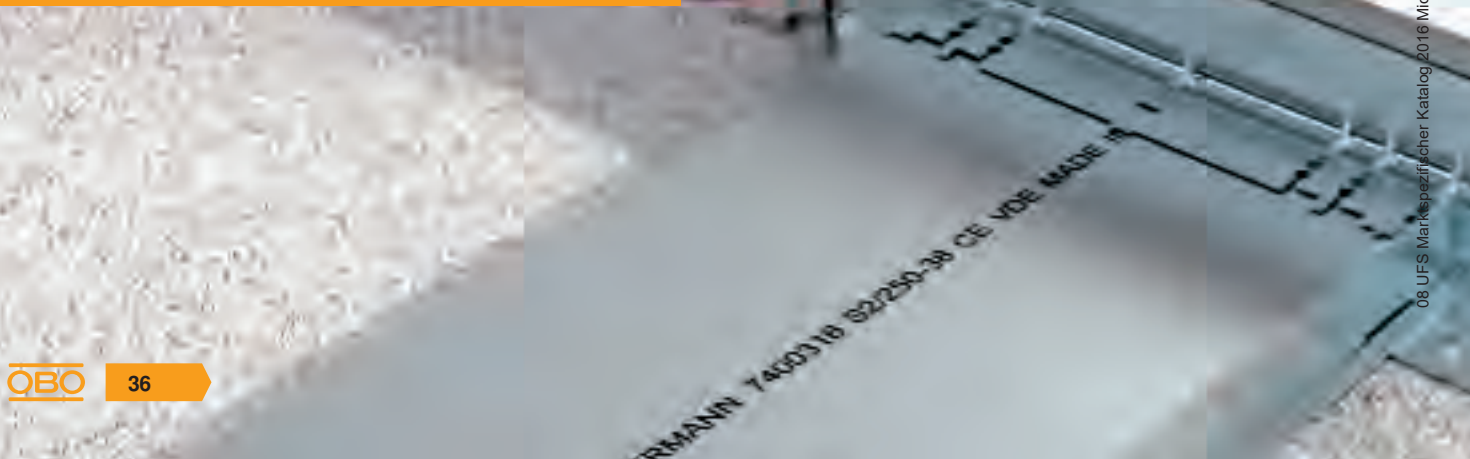
Flexible equipment

Device installation units, in the form of cassettes and service outlets, can be installed in underfloor boxes with a mounting lid. The device installation units accept sockets, data and multimedia connections.



New installation

With the matching mounting lid, it is possible to install service outlets in the rectangular systems sizes 2, 4, 6 and 9 and in the round system sizes R4, R7 and R9. In addition, a blind lid and a lid for the mounting of Telitanks (units protruding above the floor) are available.





Cassettes*



Service outlets*



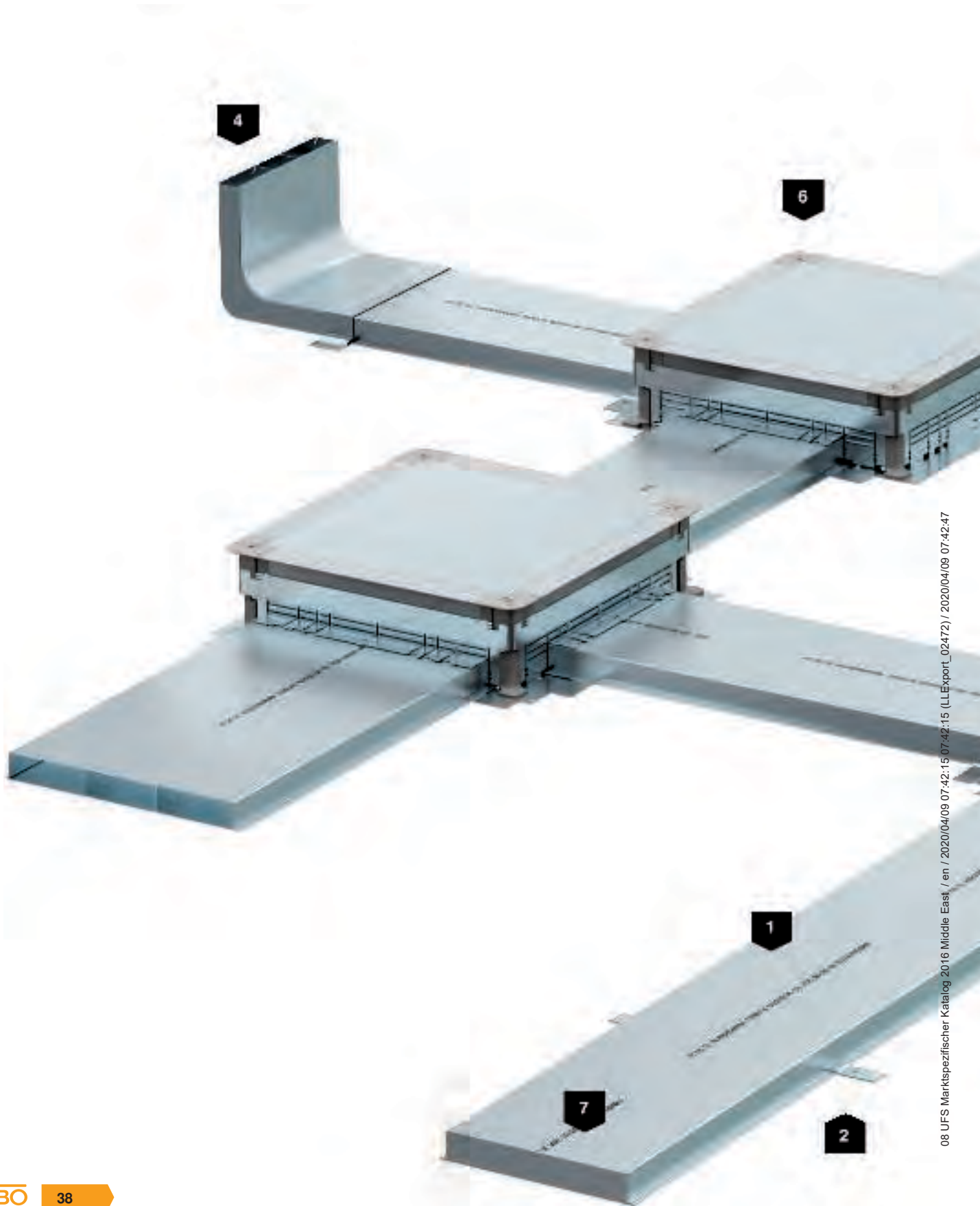
Mounting lid*

*You can find our complete product range in the product section of our underfloor systems catalogue.

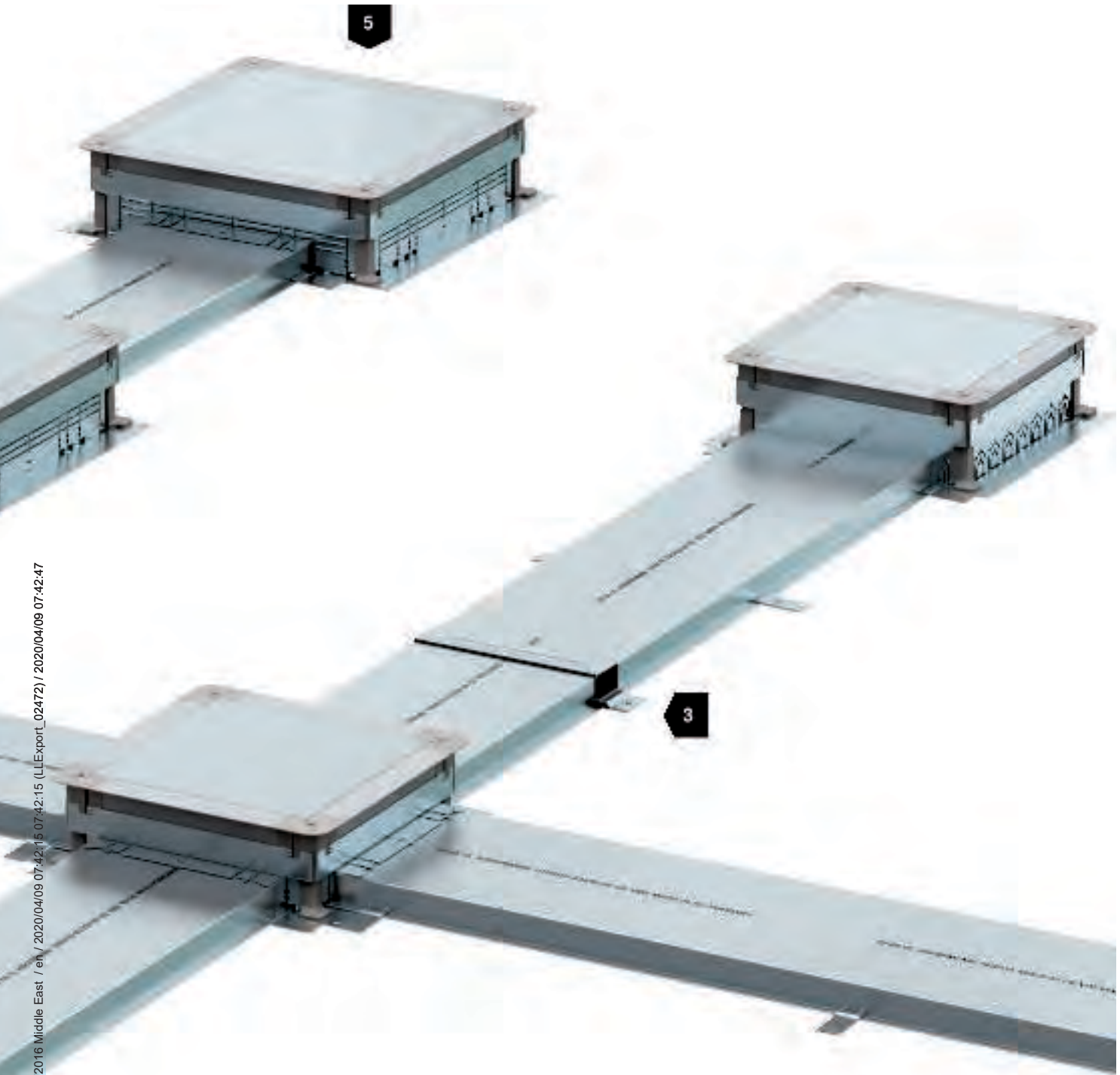
Change of use

If there is a change of use, the screed-flush sockets offer direct access to the electrical installation and they can be adjusted appropriately. The mounting lid can be replaced: Later installation of a service outlet of another shape is thus no problem.

Installation principle, screed-covered duct system



1	Underfloor installation duct
2	Duct connection bracket
3	Connection shackle
4	Vertical bend
5	Underfloor box with mounting lid and lid blanking plate (UGD)
6	Underfloor junction and branch box (UZD)
7	End piece



Screed thickness



Nominal screed thickness for EÜK screed-covered duct system

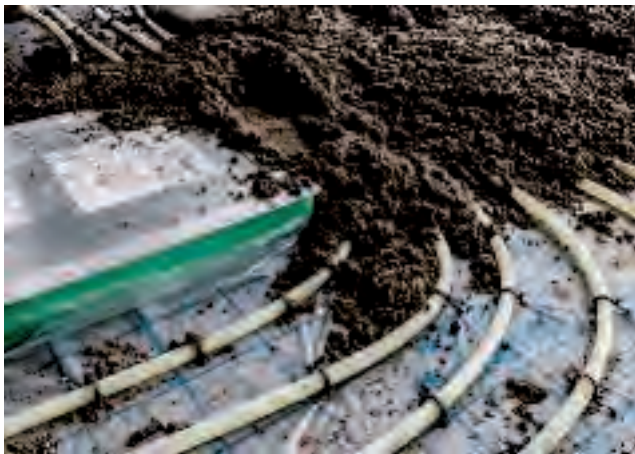
Avoiding crack formation

An important precondition for a proper underfloor installation is the screed structure. In the case of a screed-covered system, it is important that the screed thickness over the duct corresponds to the values in the standard, to avoid the formation of cracks.

Nominal screed thickness

The nominal screed thickness is dependent on the insulation layer, the individual load and the screed type. More detailed information for Germany can be found in DIN 18560.

Working of the screed



Working the screed

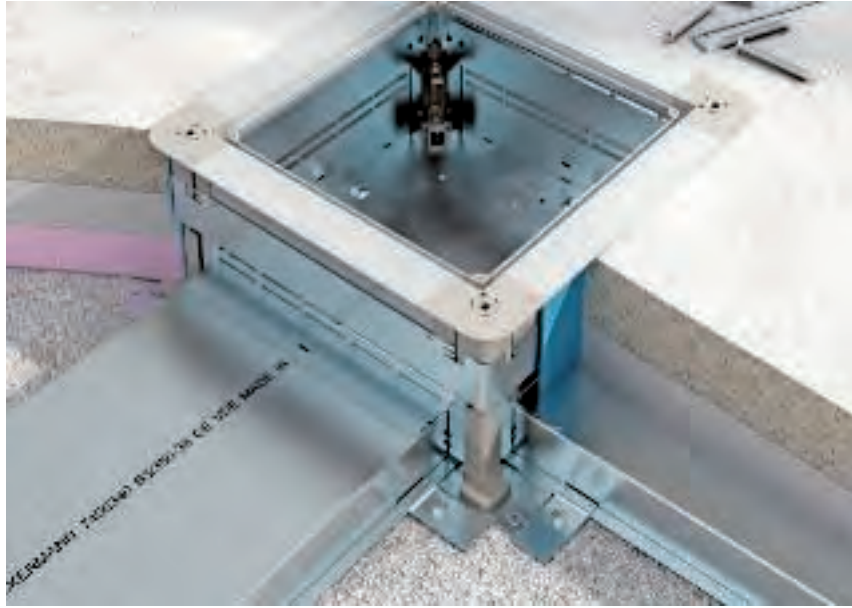
The excess height of the underfloor boxes must be completely surrounded with screed, in order to guarantee the stability of the boxes in the screed.



Use of a separating layer

When used in floating screed or in heated screeds on insulation layers, the box can be separated from the screed by a separating layer. The separating layer can be up to 3 mm thick and must reach to under the top frame of the box.

Floor types



Application area Floating screed

Underfloor installation ducts can be mounted in floating screed without complications. For noise reduction reasons, the ducts are laid inside the insulation.

Planning aids, EÜK screed-covered duct system



Application area Composite screed

In cement composite screed, the underfloor installation duct can be mounted quickly and easily. Additional protective measures are not required: The cement screed can be applied directly to the galvanised sheet steel duct.

Floating screed

When used in floating screeds, ensure that the duct system is sealed before the screed is applied.



Application area Poured asphalt

Underfloor installation ducts can be used in a composite screed system made of floating poured asphalt. The installation temperature of the poured asphalt is around 250 °C. Bitumen corrugated card must be laid to provide protection to the ducts during pouring and the cooling phase of the poured asphalt. Cables are only installed after cooling.



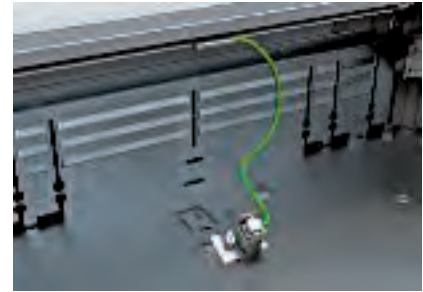
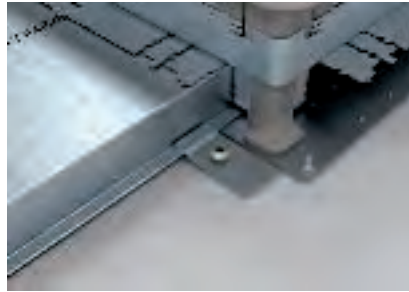
Use in the field of high loads

No insulation strips may be attached to the underfloor box. This ensures the maximum support area of the screed support frame. You can find system accessories, such as heavy-duty supports and heavy-duty mounting lids for the installation of cassettes of load classes SL1 and SL2, in the Heavy-Duty chapter of our catalogue.

Inclusion of EÜK duct system in the local equipotential bonding

We recommend including the EÜK screed-covered duct system in the equipotential bonding. The EÜK system offers the necessary connection options for protective conductors. All the system components are fully conductive.

The EMC regulations according to DIN EN 50174-2 (VDE 0800-174-2) require the inclusion of all the metallic system components up to the connection point as functional equipotential bonding.



Mounting of connection shackle

Connection shackles create the conductive connection of the two inserted pieces of duct.

Earthing of the duct system

The VW E connection bracket for the conductive connection between the duct and underfloor box.

Earthing of the box top frame

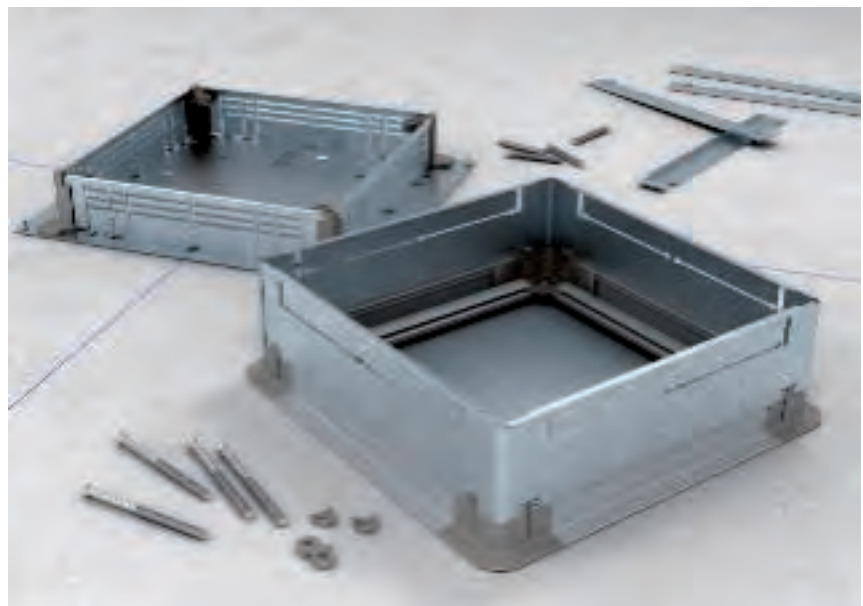
If there is a fault, metallic parts will carry voltage. The protective conductor connection bracket 8AWR includes the underfloor boxes in the protective measures. Tighten the contact bolt with at least 1.2 Nm. Alternatively, conductive connections can be created between construction elements using external connections, by soldering, welding, riveting or screwing.

Height compensation of the underfloor box

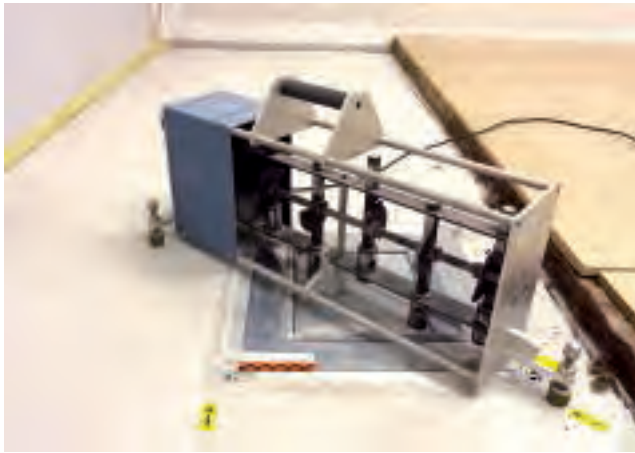
The underfloor boxes of type UGD and UZD are available in three different height-adjustment ranges:

- 70–125 mm
- 115–170 mm
- 165–220 mm

Using height compensation construction kits (raising aids), it is also possible to convert the underfloor boxes to screed heights of up to 320 mm. System 55 is used for screed heights of 70 mm or less.

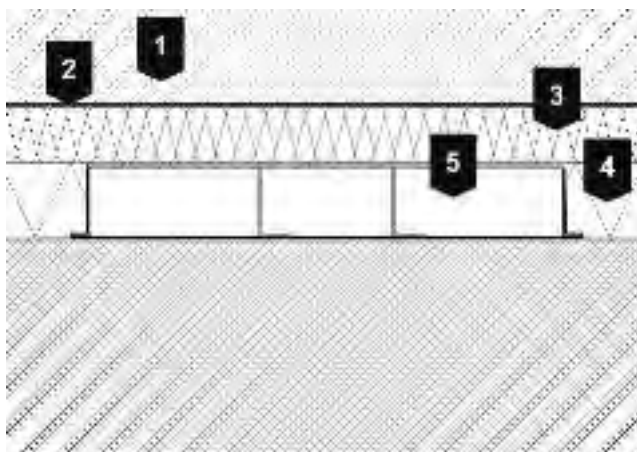


Noise prevention and impact noise



Minimum requirements

The minimum requirements for structural sound insulation are defined in DIN 4109 "Sound insulation in buildings". General information on the topic of sound insulation and the installation of underfloor systems can be found in the general planner section of the underfloor systems' catalogue. Qualified tests to determine the transmission of air and footfall sound were carried out together with the MÜLLER BBM GmbH testing institute in Planegg, Munich, for the EÜK duct system. The transmission of air and footfall sound was investigated for both vertical, i.e. from storey to storey, and horizontal sound transmission, i.e. from adjacent rooms. The test was carried out in a floating screed construction.



1	50 mm cement screed, CEMI 52.2 N, mass relative to area $m' = 15 \text{ kg/m}^2$
2	0.2 mm PE film
3	30 mm noise insulation damping, dynamic stiffness $s' = 15 \text{ MN/m}^3$
4	40 mm heat insulation, polystyrene EPS 100/035
5	38 mm installation trunking

Noise evaluation

With regard to the evaluated reduction of footfall sound of the screed without a floor system, statements made below can be considered as approved. The following recommendations for the OBO Bettermann underfloor systems relate to screed constructions which are spatially separated.

The required noise measures for the use of the type EÜK duct system in offices can be summarised as follows:

The EÜK system can run beneath floating screeds, through partitions with noise protection requirements, in accordance with Section 3. During measurement checking, it should be ensured that the connection sockets have a spacing of 2 m to the partition. This wall spacing of the floor socket should be maintained if there are sound requirements.

If the floor socket is closer to the partition, then there may be a reduction in noise insulation. However, this has not been investigated in detail. In the case of floor sockets close to the wall, it may be advisable to insert noise protection insulation in the trunking system, in order to exclude sound bypass transmission via the floor sockets.

Horizontal transmission of air and footfall sound

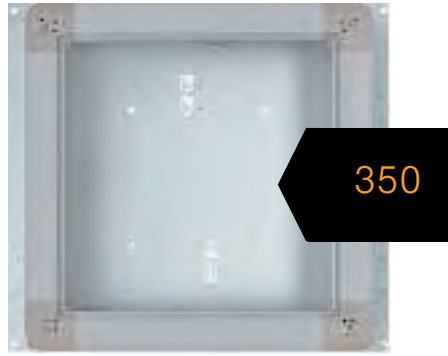
With horizontal transmission of footfall sound, the system is suitable for fulfilling the increased recommendations in the sense of Supplementary Sheet 2 of DIN 4109 [4], provided that the screed is separate in the area of the partition.

Vertical transmission of footfall sound

The EÜK floor system, including underfloor connection sockets, does not lead to a decrease of the required evaluated footfall sound reduction of a floating cement screed with regard to vertical transmission of footfall sound, should the underfloor boxes be decoupled.

Data taken from Report M88034/06 of 29th July 2014.

Underfloor boxes



Function matrix, underfloor boxes, nominal size 250

Underfloor box	Insertable duct widths, nominal size	Height-adjustment range upper edge screed mm	De-couplable ¹	Suitable for SL application ²	Possible device installation, nominal sizes	Mounting lid in scope of supply
UZD 250-3	190, 250	70–125	Yes	Yes ³	2, 4, 6, 9, R4	No ⁴
UZD 115170 250-3	250	115–170	Yes	Yes	2, 4, 6, 9, R4	No ⁴
UZD 165220 250-3	250	165–220	Yes	Yes	2, 4, 6, 9, R4	No ⁴
UZD 250-3 R	Installation pipes	70–125	Yes	Yes ³	2, 4, 6, 9, R4	No ⁴
UGD 250-3 4	190, 250	70–125	Yes	Yes ³	4	Yes
UGD 250-3 6	190, 250	70–125	Yes	Yes ³	6	Yes
UGD 250-3 9	190, 250	70–125	Yes	Yes ³	9	Yes
UGD 250-3 R4	190, 250	70–125	Yes	Yes ³	R4	Yes

¹ Separate the screed contact frame from the box body. Not for SL application

² Application for areas with increased load requirements with separately available system accessories.

³ At lower screed heights, the floor construction must be agreed with technical planners.

⁴ Device installation units are installed in DUG blanking lids

Function matrix, underfloor boxes, nominal size 350

Underfloor box	Insertable duct widths, nominal size	Height-adjustment range upper edge screed mm	Decouplable ¹	Suitable for SL application 2 ²	Possible device installation, nominal sizes	Mounting lid in scope of supply
UZD 350-3	190, 250, 350	70–125	Yes	Yes ³	4, 6, 9, R4, R7, R9	No ⁴
UZD 115170 350-3	250, 350	115–170	Yes	Yes	4, 6, 9, R4, R7, R9	No ⁴
UZD 165220 350-3	250, 350	165–220	Yes	Yes	4, 6, 9, R4, R7, R9	No ⁴
UZD 350-3 R	Installation pipes	70–125	Yes	Yes ³	4, 6, 9, R4, R7, R9	No ⁴
UGD 350-3 4	190, 250, 350	70–125	Yes	Yes ³	4	Yes
UGD 350-3 6	190, 250, 350	70–125	Yes	Yes ³	6	Yes
UGD 350-3 9	190, 250, 350	70–125	Yes	Yes ³	9	Yes
UGD 350-3 R4	190, 250, 350	70–125	Yes	Yes ³	R4	Yes
UGD 350-3 R7	190, 250, 350	70–125	Yes	Yes ³	R7	Yes
UGD 350-3 R9	190, 250, 350	70–125	Yes	Yes ³	R9	Yes

¹ Separate the screed contact frame from the box body. Not for SL application

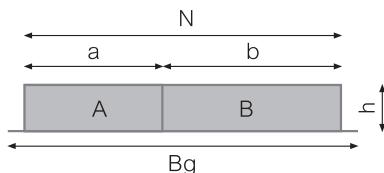
² Application for areas with increased load requirements with separately available system accessories.

³ At lower screed heights, the floor construction must be agreed with technical planners.

⁴ Device installation units are installed in DUG blanking lids

Duct volume and assignment

Screed-covered ducts, 2-compartment



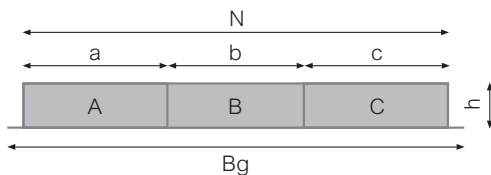
Duct type	S2 19028	S2 25028	S2 19038	S2 25038	S2 19048	S2 25048
Duct height h (mm)	28	28	38	38	48	48
Nominal width N (mm)	190	250	190	250	190	250
Total width Bg	210	270	210	270	210	270
Compartment width a (mm)	80	110	80	110	80	110
Compartment width b (mm)	110	140	110	140	110	140
Compartment A						
Cross-section A (mm ²)	2,028	2,808	2,808	3,888	3,588	4,688
Number of NYM ¹³ cables	10	14	14	19	18	23
Number of CAT ²³ cables	13	17	17	24	22	29
Compartment B						
Cross-section B (mm ²)	2,808	3,588	3,888	4,968	4,968	6,348
Number of NYM ¹³ cables	10	18	19	25	25	32
Number of CAT ²³ cables	17	22	24	30	30	39

¹ Heavy current cables NYM-J 3 x 2.5 mm, diameter = 10 mm, space requirement = 100 mm²

² CAT6 data cable, diameter = 9 mm, space requirement = 81 mm²

³ The calculation of the number of cables relates to an assignment of 50%, meaning that an appropriate reserve remains

Screed-covered ducts, 3-compartment



Duct type	S3 25028	S3 35028	S3 25038	S335038	S3 25048	S3 35048
Duct height h (mm)	28	28	38	38	48	48
Nominal width N (mm)	250	350	250	350	250	350
Total width Bg	270	370	270	370	270	370
Compartment width a (mm)	90	120	90	120	90	120
Compartment width b (mm)	70	110	70	110	70	110
Compartment width c (mm)	90	120	90	120	90	120
Compartment A						
Cross-section A (mm ²)	2,288	3,068	3,168	4,248	4,048	5,428
Number of NYM ¹³ cables	11	15	16	21	20	27
Number of CAT ²³ cables	14	19	19	26	25	33
Compartment B						
Cross-section B (mm ²)	1,794	2,834	2,484	3,924	3,174	5,014
Number of NYM ¹³ cables	9	14	12	19	16	25
Number of CAT ²³ cables	11	17	15	24	19	31
Compartment C						
Cross-section C (mm ²)	2,288	3,068	3,168	4,248	4,048	5,428
Number of NYM ¹³ cables	11	15	16	21	20	27
Number of CAT ²³ cables	14	19	19	26	26	33

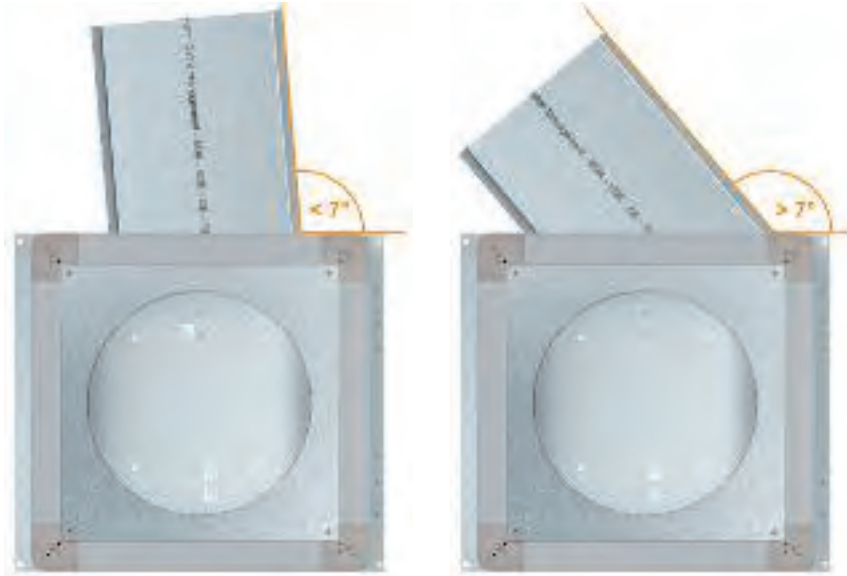
¹ Heavy current cables NYM-J 3 x 2.5 mm, diameter = 10 mm, space requirement = 100 mm²

² CAT6 data cable, diameter = 9 mm, space requirement = 81 mm²

³ The calculation of the number of cables relates to an assignment of 50%, meaning that an appropriate reserve remains

Directional correction and sloping duct entries

The prepared duct openings of the underfloor boxes allow a slight change in direction or the sloping insertion of cables. The appropriate values can be found in the following tables.



Duct directional corrections (RK)

Small duct direction corrections (up to 7°) can be compensated in the entry openings of the underfloor boxes with an adaptation cut.

Sloping duct entries (SE)

With appropriate adaptation cuts, sloping duct entries (> 7°) can be created according to the box side and entry opening.

Box size	Nominal size of duct insertion opening	Nominal duct size 190		Nominal duct size 250		Nominal duct size 350	
		RK bracket	SE bracket	RK bracket	SE bracket	RK bracket	SE bracket
250	190	7°	7°	-	-	-	-
	250	-	40°	7°	7°	-	-
350	190	7°	7°	-	-	-	-
	250	-	40°	7°	7°		
	350	-	53°	-	42°	7°	7°

Standard data

To DIN EN 50085-1 and DIN EN 50085-2-2

Class		Underfloor ducts type S2 / S3	Underfloor boxes type UZD / UGD
6.2	According to impact resistance for installation and application		
6.2.7	Electrical installation duct systems for impact energy 20 J	20 J	20 J
6.3	According to temperatures, as specified in Tables 1, 2 and 3		
Table 1	Minimum storage and transport temperatures ± 2 °C	-25 °C	-25 °C
Table 2	Minimum installation and application temperatures ± 2 °C	+5 °C	+5 °C
Table 3	Application temperatures ± 2 °C	+60 °C	+60 °C
6.4	According to the resistance against fire spread		
6.4.2	Electrical installation duct systems which do not permit the spread of fire	x	x
6.5	According to the electrical conductivity		
6.5.1	Electrical installation duct systems with electrical conductivity	x	x
6.6	According to the electrical insulation property		
6.6.1	Electrical installation duct systems without electrical insulation capability	x	x
6.7	According to the protection ratings offered by the housing or casing to EN 60529:1991		
6.7.1	According to protection against ingress of solid foreign bodies	x	x
6.7.2	According to protection against ingress of water		
6.102	According to resistance to vertical loads affecting a small surface area		
6.102.2	Electrical installation duct systems for 750 N	x	
6.102.7	Electrical installation duct systems for 3,000 N		x
6.103	According to resistance to vertical loads affecting a large surface area		
6.103.3	Electrical installation duct systems for 5,000 N		x
6.103.5 ¹	Electrical installation duct systems for 15,000 N		x

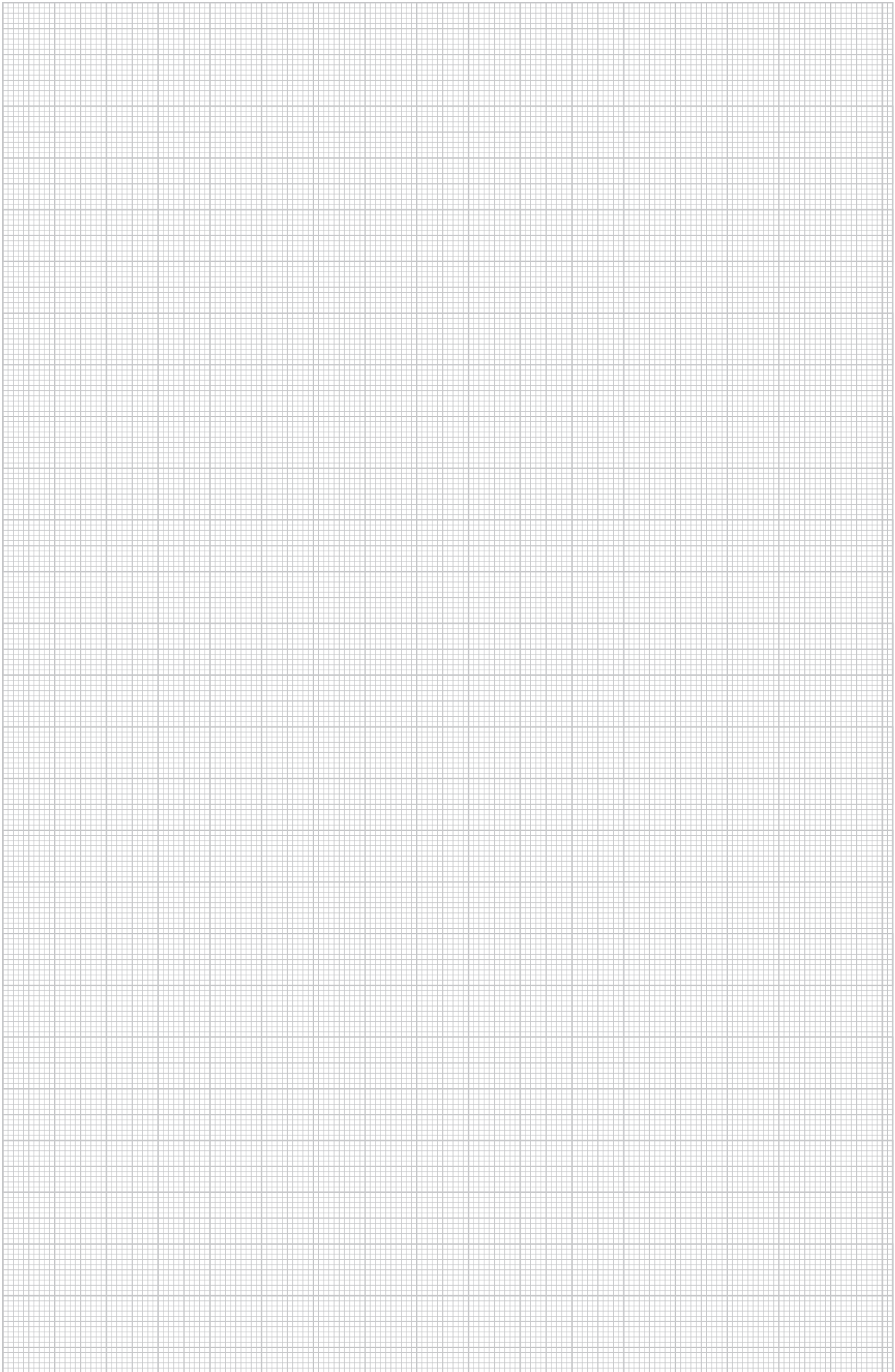
¹ Test UZD with heavy-duty mounting lid DUG 250-3 4SL



Planning checklist

When planning a screed-covered underfloor system, the following points should be observed:

- ✓ Matching of the floor structure (screed height, screed type, insulation layers, sealing, etc.) with the architecture
- ✓ Observe the minimum installation depths of device installation units
- ✓ Matching the structural physics requirements (loads, impact sound, etc.)
- ✓ Select device installation units according to the floor cleaning method
- ✓ Specify the spacing between two underfloor boxes taking the tensile loading and occurring bend radii into account





EÜK-SN screed-covered duct system

The EÜK-SN screed-covered duct system from Ackermann made by OBO is the ideal electrical installation system for large areas with fixed furnishing plans, for example in office or administration buildings. Duct sections and underfloor boxes form a tight grid, hidden in the screed, for cable routing. When combined with device installation units, access is given to power, data and multimedia technology.

Single-compartment PVC duct systems, multi-compartment metal ducts and installation pipes are suitable for cable routing beneath screed layers.

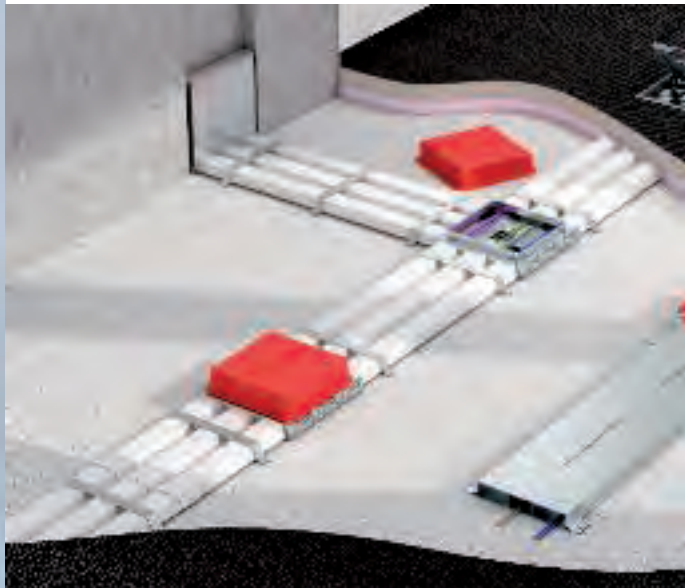




Underfloor outlet boxes

Underfloor outlet boxes are used at crossing points in screed-covered duct routes and in the duct route, and, depending on the level of expansion, allow access to the cables in the duct or the installation of electrical devices. The box bodies are made from galvanised sheet steel with a zinc coating of 275 g/m² according to EN 10327 DX51D+Z275-N-A-C and, during the mounting period, are closed off with a plastic screed protection cover.

Planning aids, screed-covered duct system EUK-SN



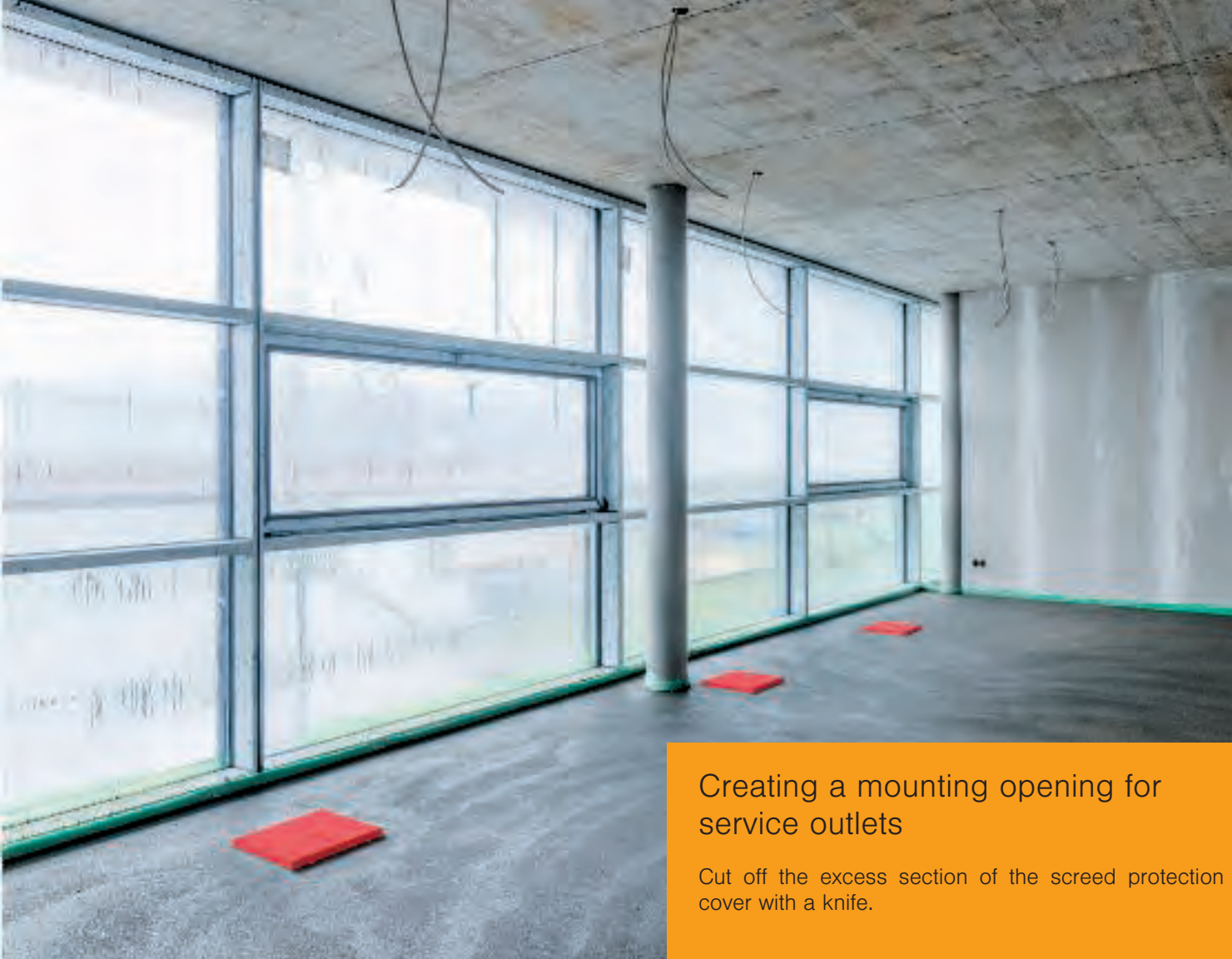
Floor structure

This means that the interior is protected against soiling also during the screed work. After screed laying, the section of the screed protection cover above the screed is removed. The service outlet or the inspection cover can be installed directly in the opening created.

Raised screed protection cover mounting

Attach the raised screed protection cover to the existing screed protection cover and stick it fast.





Creating a mounting opening for service outlets

Cut off the excess section of the screed protection cover with a knife.



Universal application

This duct system is ideal for supplying large areas, in particular in offices and administrative buildings.

Duct sections and underfloor boxes form a tight grid, hidden in the screed, for cable routing and access to power, data and telecommunications networks.



Vertical bend

The matching vertical bends allow the creation of vertical changes of direction, e.g. as a connection to wall connections or supplies.

System sizes



The PVC underfloor trunking is available in the sizes 60 x 25 mm and 90 x 35 mm.

The metal underfloor trunking is available in the size 250 x 38 mm.



Equipotential bonding

It is recommended to include the screed-covered EÜK duct system in the equipotential bonding. The EÜK system provides the required connection options for protective conductors. All system components are continuously conductive. The EMC regulations according to DIN EN 50174-2 (VDE 0800-174-2) require the inclusion of all metal system components to the connection point as part of the functional equipotential bonding.

Earthing of the duct system

The connection angle VW E forms the conductive connection between the duct and the underfloor socket.

Earthing of the top frame

Metal parts are live in case of an error. The protective conductor connection bracket 8AWR includes the underfloor socket in the equipotential bonding. The contact screw is tightened with a torque of at least 1.2 Nm. Alternatively, the components can also be connected conductively using external connections, through soldering, welding, riveting or screwing.

Connecting to plastic ducts

The duct lengths can now be determined exactly. The material can be laid out on the floor. The PVC ducts are cut to the length required. Fix PVC ducts to the raw ceiling with a fastening clamp. Cables and lines in screed-flush duct systems are supplied either via vertical bends or vertical connection sockets.



Connecting to ducts or pipes

Installation with metal trunking and installation pipe

Self-levelling underfloor boxes can be used with metal trunking systems or installation pipes.

Process side walls for metal trunking system

Open the side walls of the underfloor boxes using pliers (e.g. side cutters). Turn the strap over to the front.

Process side walls for installation pipes

Open the mounting openings for installation pipes with a screwdriver.



Range of functions – a fixed point

When installed, the underfloor box is securely anchored in the screed. The screed can be worked particularly well around the drip edge of the socket, which also serves as a broad support in the screed. The box top can be completely uncoupled from the box body, so that no sound can be transferred via the ducts.

Earthing of the underfloor box

Insert the earth conductor clamp in the underfloor box. Safety: tighten the fastening screw to 1.2 Nm.





Creating a mounting opening for service outlets

Cut off the excess section of the screed protection cover with a knife.



Flexible equipment

Device installation units, in the form of cassettes and service outlets, can be installed in underfloor boxes from the EÜK-SN system.

The device installation units accommodate sockets, data and multimedia connections.



Square

Rectangular service outlets can be installed in nominal sizes 4, 6 and 9.



Round

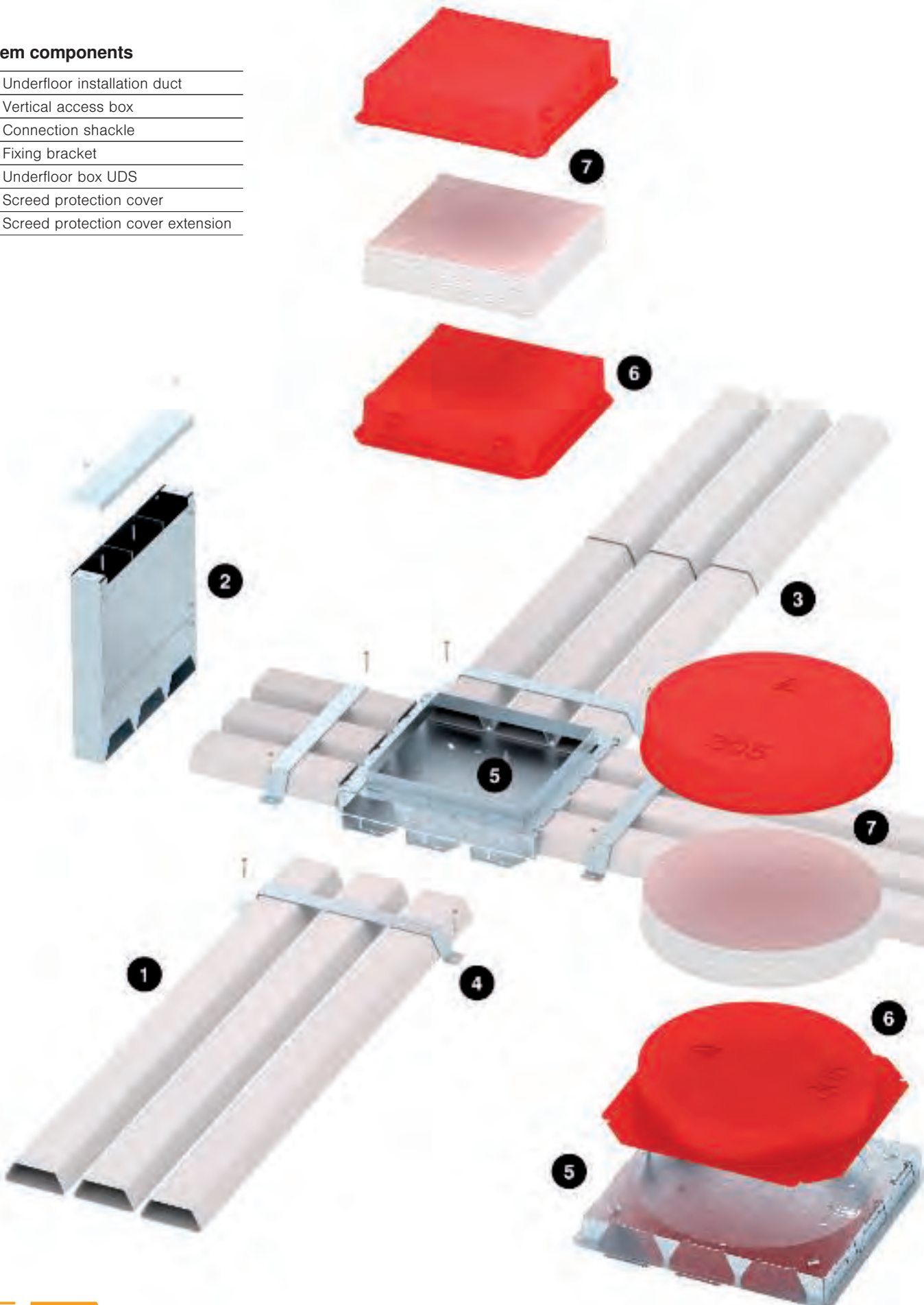
Round service outlets can be installed in nominal sizes R4, R7 and R9.



Installation principle, screed-covered duct system with PVC duct

System components

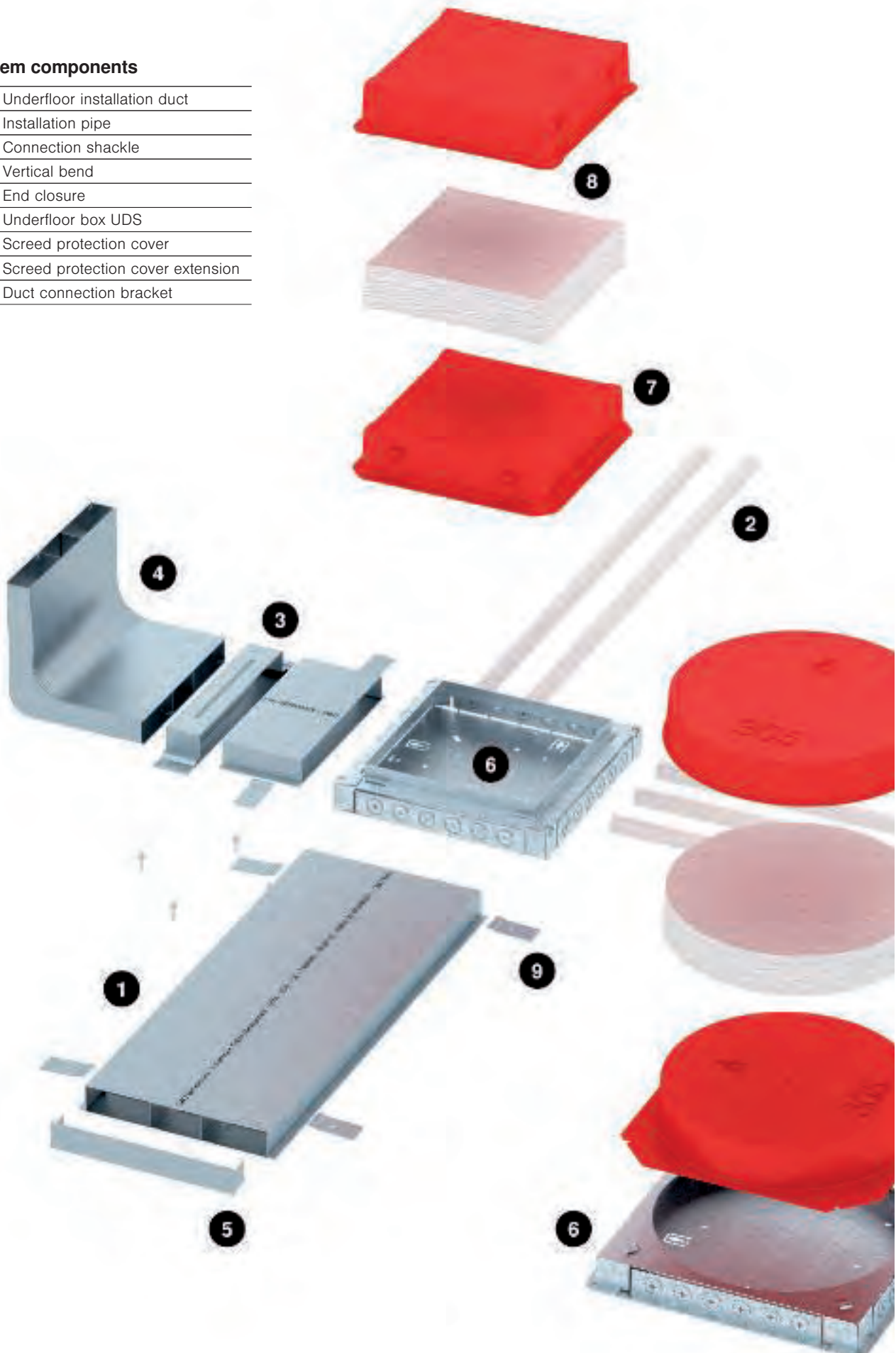
1	Underfloor installation duct
2	Vertical access box
3	Connection shackle
4	Fixing bracket
5	Underfloor box UDS
6	Screed protection cover
7	Screed protection cover extension



Installation principle, screed-covered duct system with metal duct and installation pipe

System components

1	Underfloor installation duct
2	Installation pipe
3	Connection shackle
4	Vertical bend
5	End closure
6	Underfloor box UDS
7	Screed protection cover
8	Screed protection cover extension
9	Duct connection bracket



Filling overview – filling factor

Cables in an installation duct

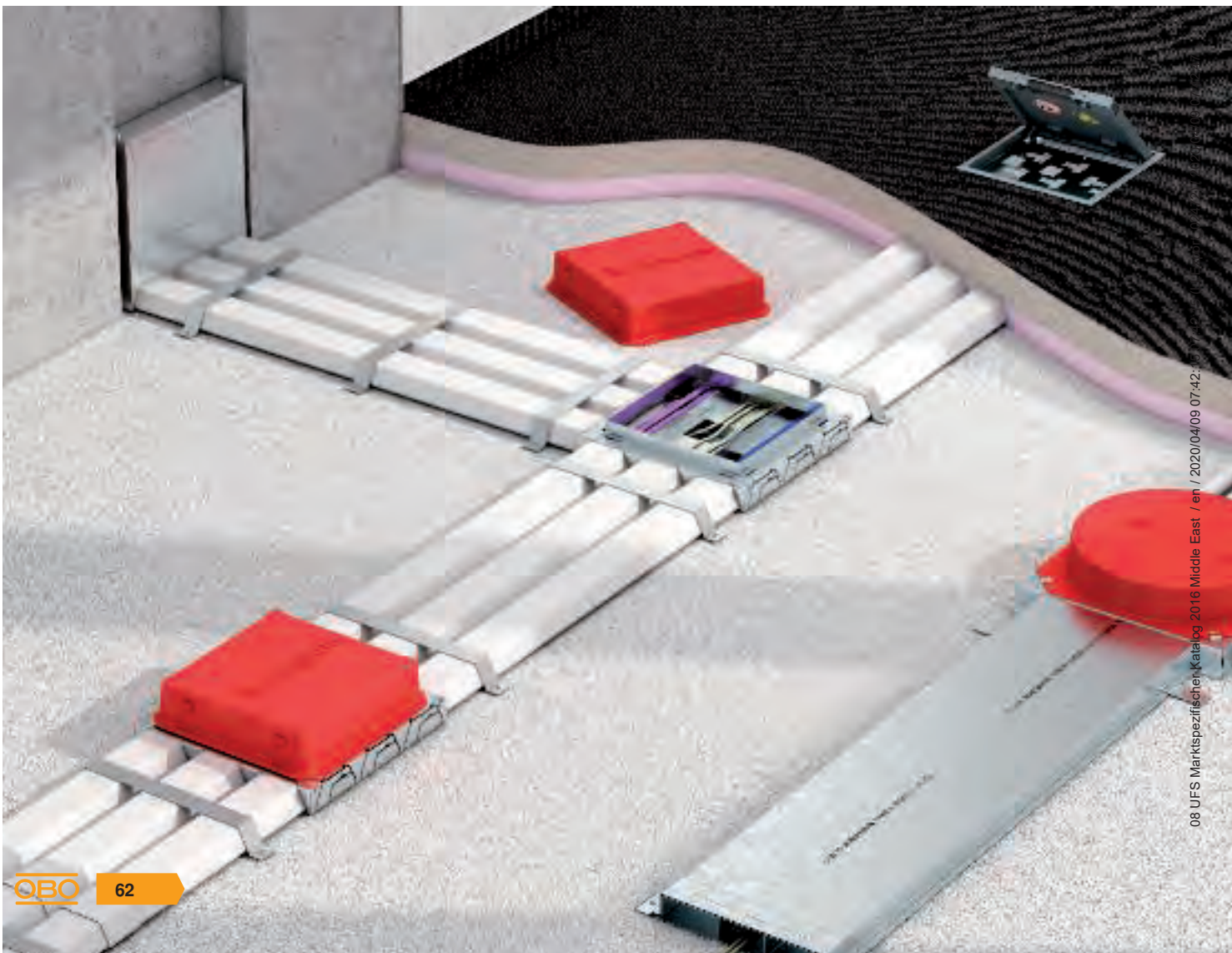
Here, you can find an overview which tells you how many cables of which diameter fit into which compartment width. Always observe an initial filling factor of 50%.

60 x 25 number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Duct height 25 mm	20	14	10	8	6	5	4	3	3	2	2	2	1	1

90 x 35 number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Duct height 35 mm	46	32	23	18	14	11	9	8	6	5	5	4	4	3





Planning checklist

When planning a screed-covered underfloor system, the following points should be observed:

- ✓ Matching of the floor structure (screed height, screed type, insulation layers, sealing, etc.) with the architecture
- ✓ Observe the minimum installation depths of device installation units
- ✓ Matching the structural physics requirements (loads, impact sound, etc.)
- ✓ Select device installation units according to the floor cleaning method
- ✓ Specify the spacing between two underfloor boxes taking the tensile loading and occurring bend radii into account



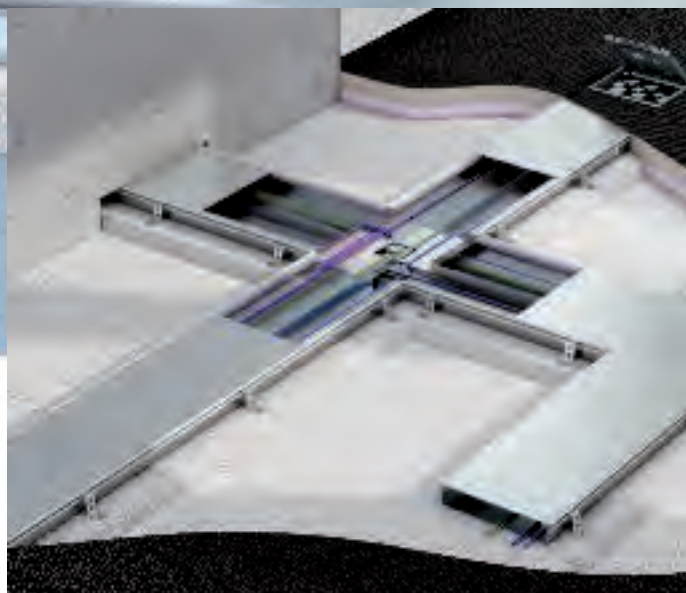
OKA-T open trunking system, screed-flush

The open, screed-flush OKA-T trunking system is used for cable routing and the installation of electrical resources in the underfloor area. The trunking system is closed on all sides. It can be opened along the entire length.





Planning aids, OKA-T open trunking system, screed-flush



System description and floor structure

Planning aids, OKA-T open trunking system, screed-flush

The open, screed-flush OKA-T trunking system is used for cable routing and the installation of electrical resources in the underfloor area. The floor trough and trunking cover are made from galvanised sheet steel with a zinc coating of 275 g/m² according to EN 10327 DX51D+Z275-N-A-C.

The trunking system is closed on all sides. It can be opened along the entire length. The side profiles contain an endless screw track for the fastening screws of the trunking covers, meaning that all the trunking covers can be mounted at any point in the trunking run. Even covers shortened for construction reasons can be fastened to any point in the trunking run.

The side profiles support the screed connection of the trunking system, providing a high load capacity.

Separating retainers are conductively connected to the trunking bases on insertion. Screwing the trunking covers to the side profiles means that all the metallic parts of the system have a conductive connection. The trunking system can be included in the equipotential bonding safely and easily.



Preparation of mounting substrate

The mounting substrate is prepared along the routing section with an additional screed bed as a levelled fine layer. Its surface should be level and smooth.



System height

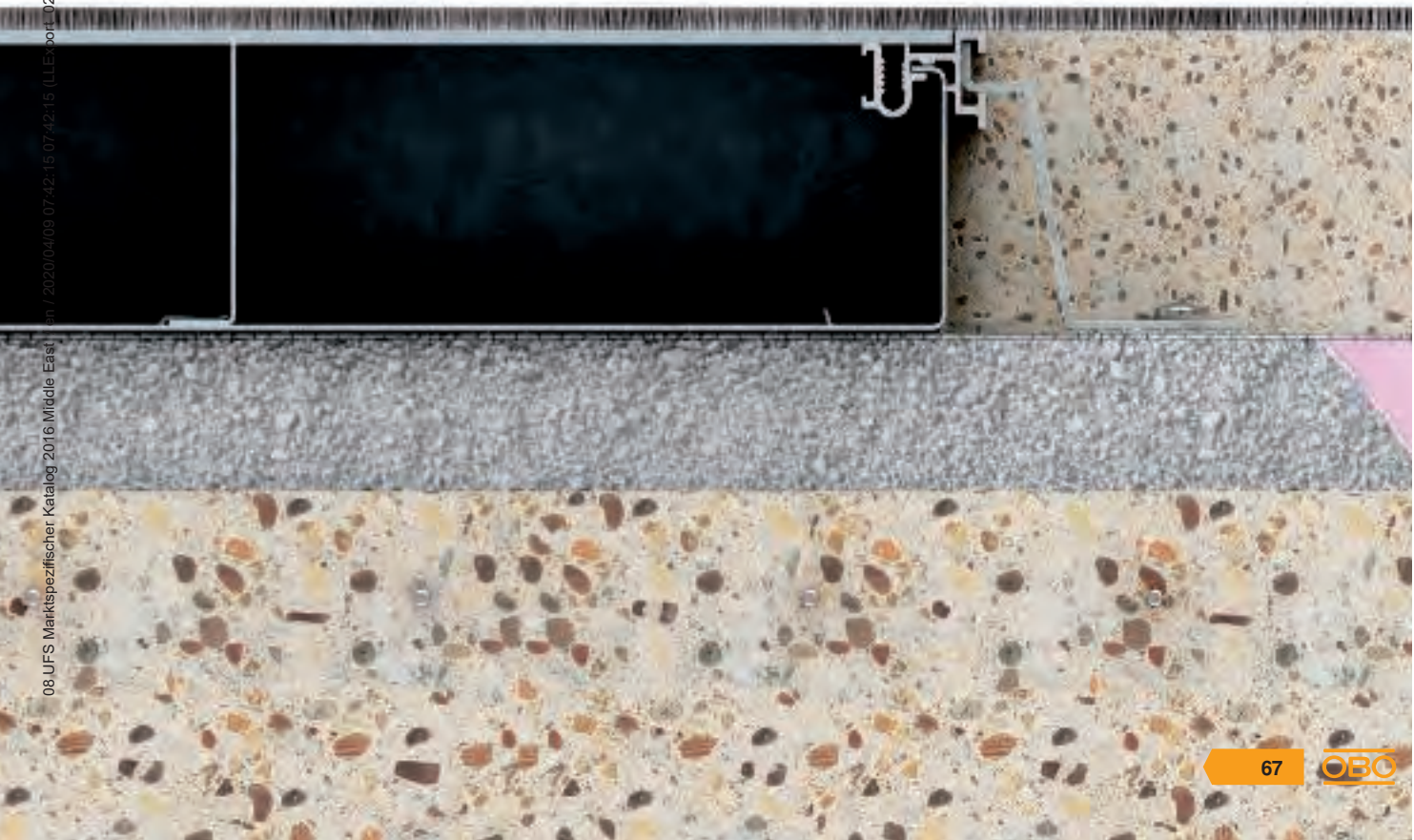
The OKA-T trunking system has a set height of 65 mm.



Planning aids, OKA-T open trunking system, screed-flush

Closed

The trunking system with enclosed floor trough offers a high level of security. Neither dust nor dirt from the construction site or from the adjacent screed can penetrate inside.



Secure mounting

The OKA-T trunking system is installed and mounted on the levelled fine layer. No further levelling is required. The mounting accessories required are included.

Mounting of the trunking covers

The mounting covers are inserted in the side profiles and fastened with the cover fastening screws.



Connection of trunking bases

The trunking bases are aligned by connecting the side profiles. In addition, the screw connection means that the side profiles have a conductive connection and can be included in the protective measure.

Creating equipotential bonding

All the metallic parts of the trunking system must be included in the protective measure against indirect contact with parts carrying voltage and are therefore equipped with the appropriate connection options for the earth conductor clamp.



Fastening the trunking system

Trunking fastening brackets are inserted from the outside into both sides of the side profile. A fixed position of the fixing brackets is not intended.



Planning aids, OKA-T open trunking system, screed-flush



Pre-mounted units

The trunking units are supplied, ready to mount, with three covers. On delivery, the trunking covers are screwed on and strapped on. This means that they cannot get lost on the construction site.

System structure

Cabling

Separating elements ensure safe separation of the cables.



Screed work

The screed can be laid after the routing, fastening and covering of the trunking system. Ensure that the side profiles are well supported with screed.





Device installation

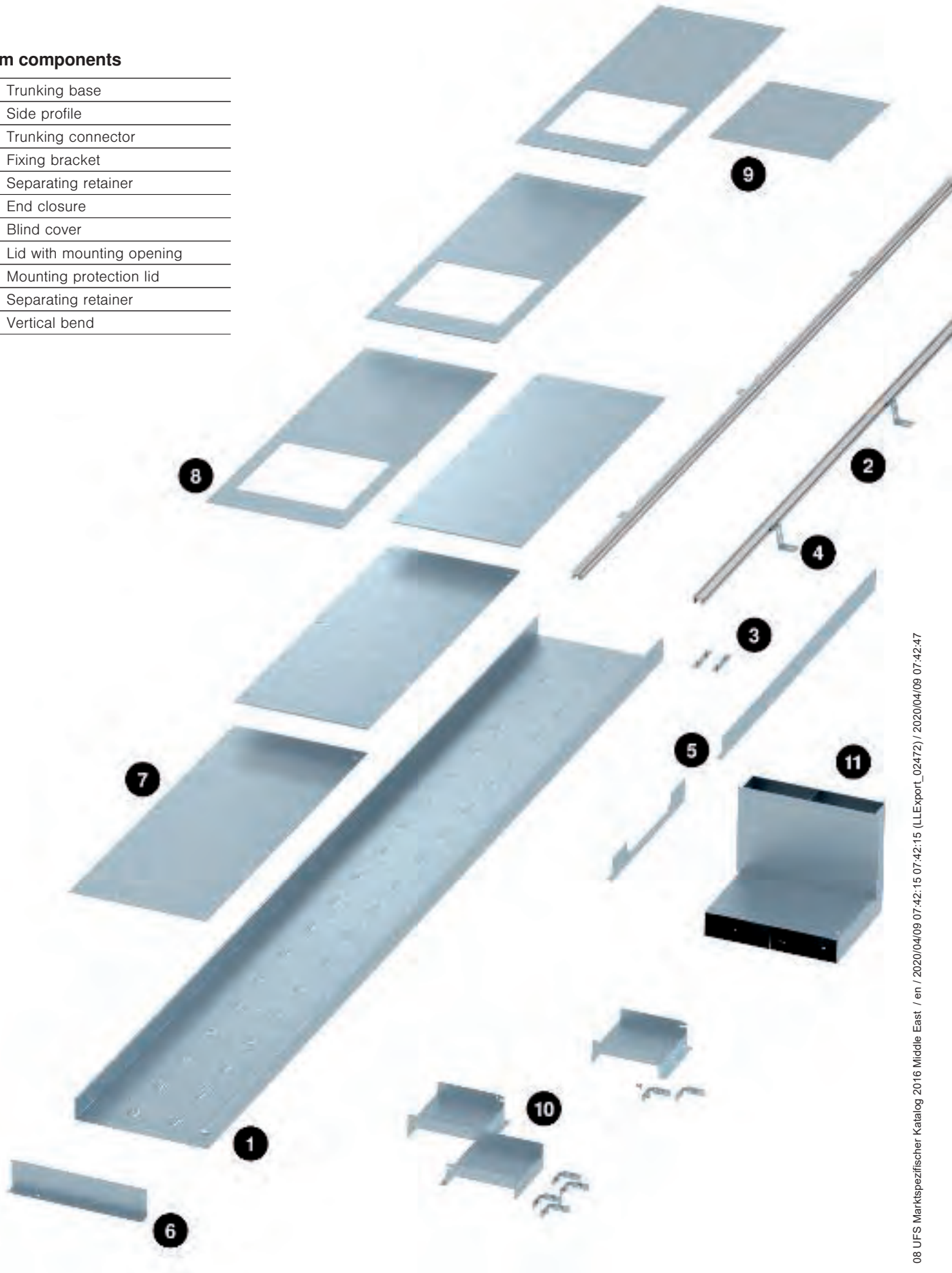
A service outlet with three partitions is installed in 3-compartment trunking systems. The accessories are mounted in the service outlet in or below type AMPT5 cover plates.

Installation principle, OKA-T screed-flush trunking system

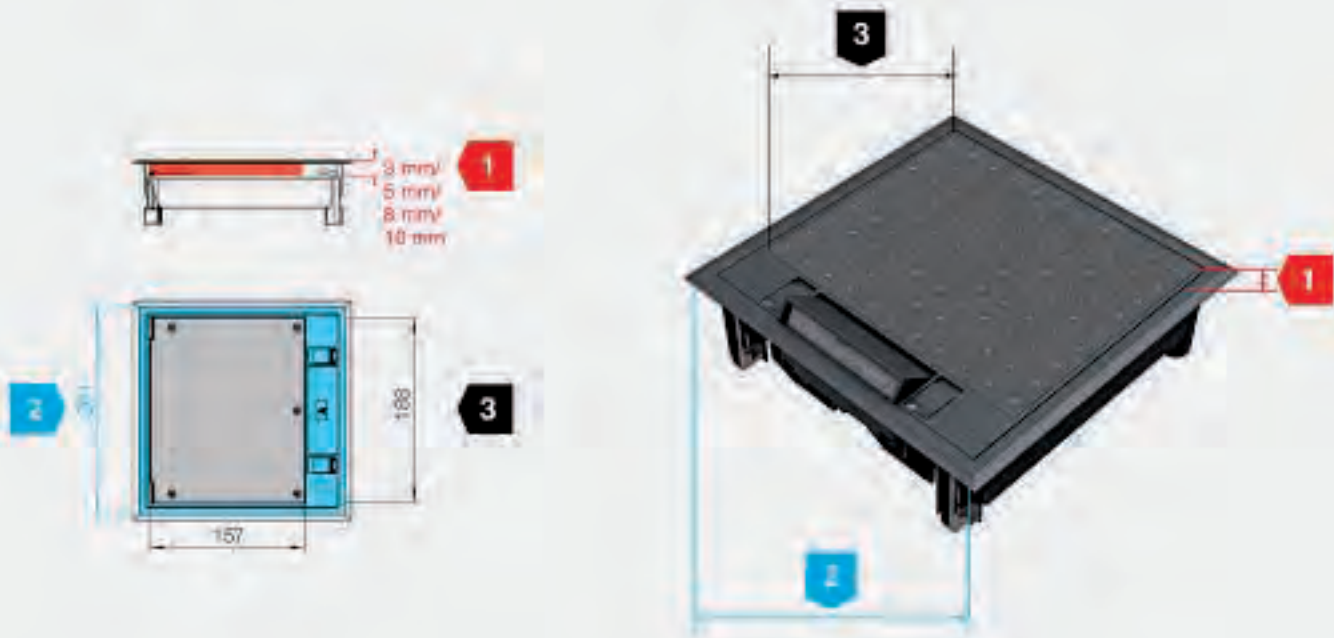
Planning aids, OKA-T open trunking system, screed-flush

System components

1	Trunking base
2	Side profile
3	Trunking connector
4	Fixing bracket
5	Separating retainer
6	End closure
7	Blind cover
8	Lid with mounting opening
9	Mounting protection lid
10	Separating retainer
11	Vertical bend



Installation and floor cut-out dimensions



Planning aids, OKA-T open trunking system, screed-flush

Various installation and floor cut-out dimensions must be taken into account for the mounting of service outlets and the application of floor coverings in the device lids.

1

Frame height for the floor covering in the lid (red dimensions)

The frame height data relates to the maximum floor covering thickness, including adhesive. If, in the figure, several heights are specified, then the frame height can be changed during construction: By adding or removing spaces, it is possible to adjust the desired frame height to the floor covering. In the as-delivered state, the frame height is usually 5 mm.

2

Floor cut-out for the installation of service outlets (blue dimensions)

The dimensions for the floor cut-out should be considered as target dimensions for correct installation of the service outlet in the floor. They are only generally required for the floor cut-out in system floors. When mounting service outlets in the EÜK screed-covered duct system or in the OKA open trunking system, they need not be taken into account, as these systems offer prefabricated mounting lids with matching installation openings.

3

Internal dimension of the lid to determine the Floor covering cut-out (black dimensions)

The dimension data relates to the internal dimension of the cover and is used to calculate the floor covering cut-out. Depending on the type of floor covering, appropriate reductions should be taken into account, e.g. for expansion gaps.

Cables in an installation trunking

Here you can find an overview which tells you how many cables of which diameter fit into which compartment width. Always observe an initial filling factor of 50%.

Used filling factor in table is 50%.

Usable cross-section without crossing or branch, OKA-T



Usable cross-sections for OKA-T

Nominal size Duct width in mm	Nominal size Duct height in mm	Usable cross-section Draw 1 in mm ²	Usable cross-section Draw 2 in mm ²	Usable cross-section Draw 3 in mm ²	Total in mm ²
300	65	5,914	5,402	5,873	17189
400	65	8935	5,402	8899	23236

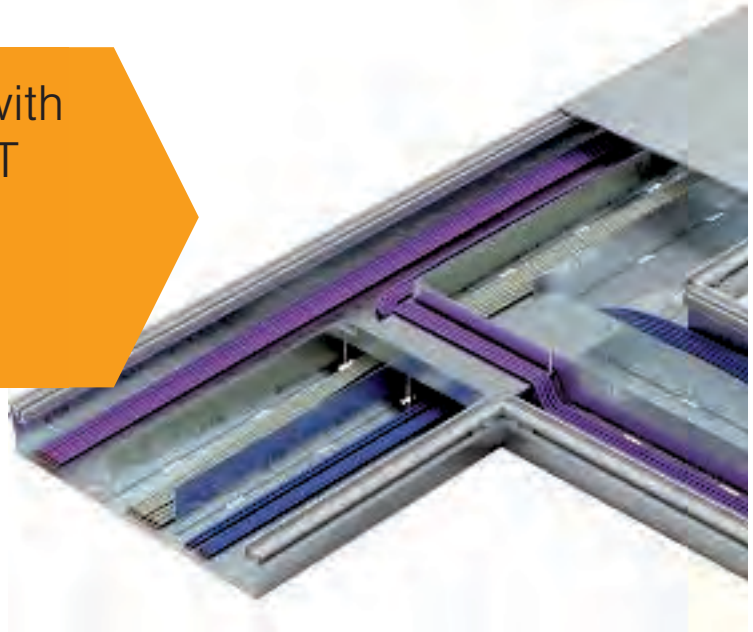
300 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	118	82	60	46	37	30	24	21	17	15	13	12	10	9
Compartment 2	108	75	55	42	33	27	22	19	16	14	12	11	9	8
Compartment 3	117	82	60	46	36	29	24	20	17	15	13	11	10	9

400 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	179	124	91	70	55	45	37	31	26	23	20	17	15	14
Compartment 2	108	75	55	42	33	27	22	19	16	14	12	11	9	8
Compartment 3	178	124	91	70	55	44	37	31	26	23	20	17	15	14

Usable cross-section with crossing or branch, OKA-T



Usable cross-sections for OKA-T

Trunking width in mm	Trunking height in mm	Usable cross-section compartment 1 in mm ²	Usable cross-section compartment 2 in mm ²	Usable cross-section compartment 3 in mm ²	Total in mm ²
300	65	2957	2701	2936	8594
400	65	4467	2701	4449	11617

300 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	59	41	30	23	18	15	12	10	9	8	7	6	5	5
Compartment 2	54	38	28	21	17	14	11	9	8	7	6	5	5	4
Compartment 3	59	41	30	23	18	15	12	10	9	7	7	6	5	5

400 mm wide trunking, number of cables

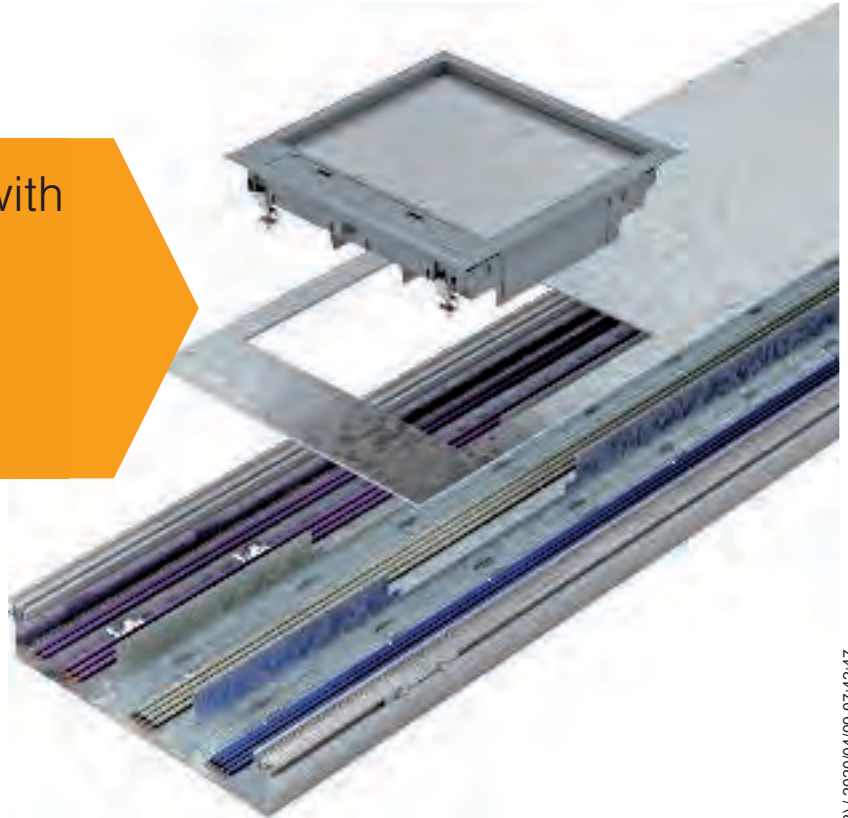
Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	89	62	46	35	28	22	18	16	13	11	10	9	8	7
Compartment 2	54	38	28	21	17	14	11	9	8	7	6	5	5	4
Compartment 3	89	62	46	35	27	22	18	15	13	11	10	9	8	7

Cables in an installation trunking with device installation in GES9-3

Here you can find an overview which tells you how many cables of which diameter fit into which compartment width. Always observe an initial filling factor of 50%.

Used filling factor in table is 50%.

Usable cross-section with device installation in GES9-3, OKA-T



Usable cross-sections for OKA-T

Trunking width in mm	Trunking height in mm	Usable cross-section compartment 1 in mm ²	Usable cross-section compartment 2 in mm ²	Usable cross-section compartment 3 in mm ²	Total in mm ²
300	65	1632	572	1580	3784
400	65	4657	572	4575	9804

300 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	33	23	17	13	10	8	7	6	5	4	4	3	3	3
Compartment 2	11	8	6	4	4	3	2	2	2	1	1	1	1	1
Compartment 3	32	22	16	12	10	8	7	5	5	4	4	3	3	2

400 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	93	65	48	36	29	23	19		14	12			8	7
Compartment 2	11	8	6	4	4	3	2	2	2	1	1	1	1	1
Compartment 3	92	64	47	36	28	23	19	16	14	12	10	9	8	7



Planning checklist

When planning a screed-flush underfloor system, the following points should be observed:

- ✓ Matching of the floor structure (screed height, screed type, insulation layers, sealing, etc.) with the architecture
- ✓ Observe the minimum installation depths of device installation units
- ✓ Matching the structural physics requirements (loads, impact sound, etc.)
- ✓ Select device installation units according to the floor cleaning method
- ✓ When selecting the nominal trunking sizes take sufficient assignment reserves into account

RFT raised floor trunking system

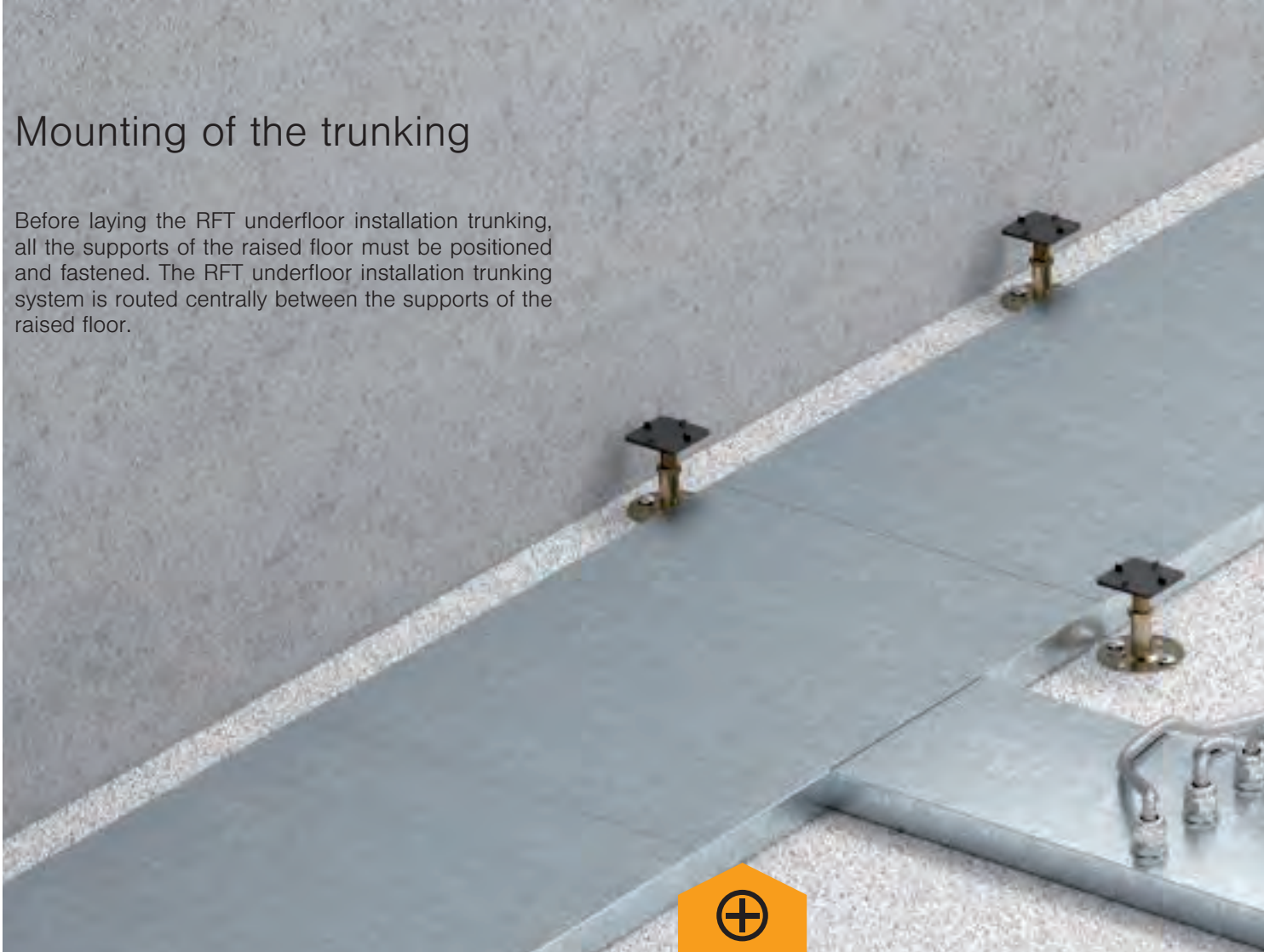
Raised floor trunking systems are suitable for routing electrical cables beneath raised floor plates. The trunking is used either for cable routing or routing cables for connection to service outlets. Depending on the version, the trunking is available in the widths 225, 300 and 450 mm, and the height 40 mm.



Mounting of the trunking

Before laying the RFT underfloor installation trunking, all the supports of the raised floor must be positioned and fastened. The RFT underfloor installation trunking system is routed centrally between the supports of the raised floor.

Planning aids, RFT raised floor trunking system



Creating a junction

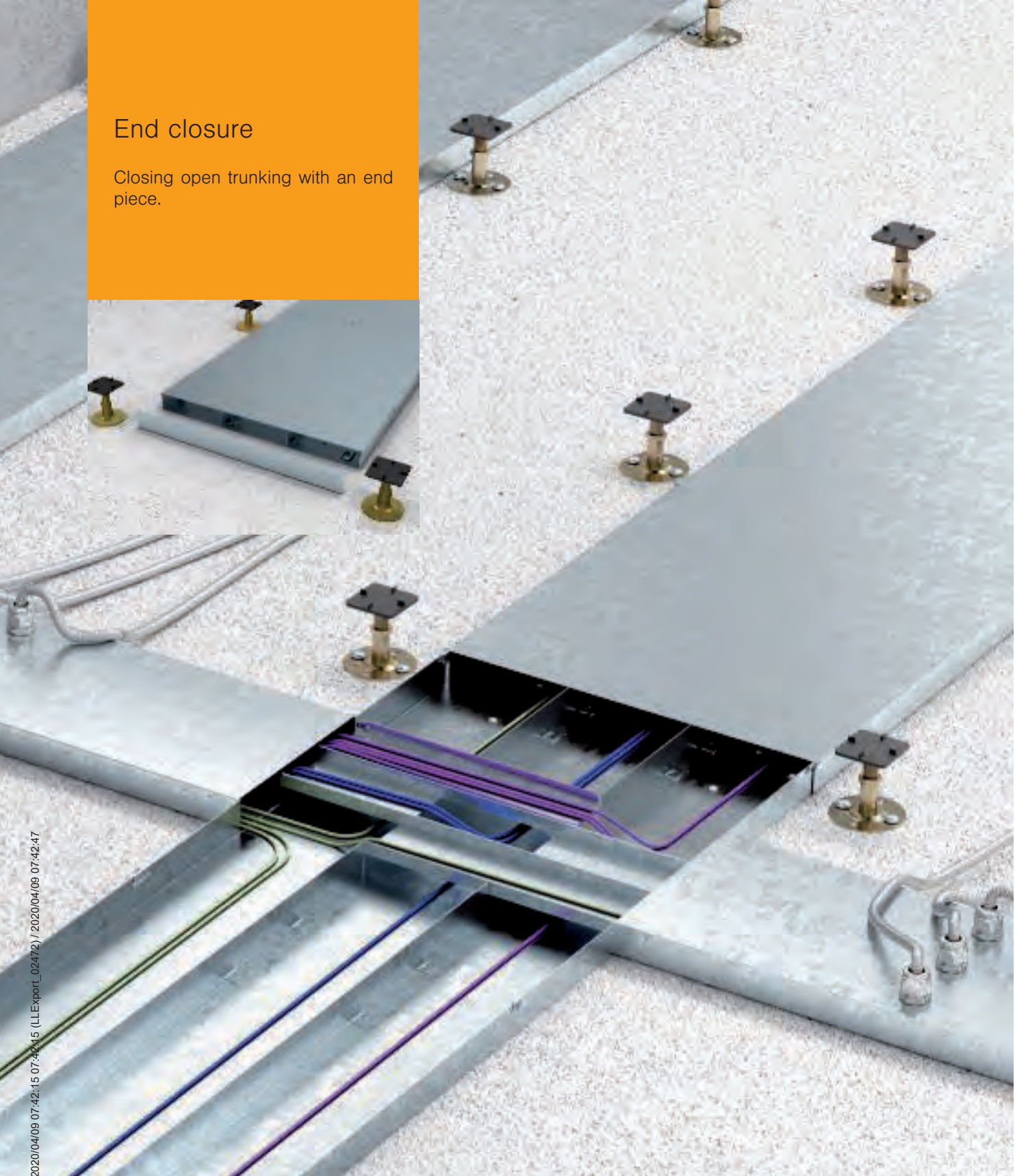
Open the trunking laterally at the intended position and position the adjoining trunking. Connect trunking to trunking connectors at joints. The trunking connector creates the mechanical and electrically conductive connection from base to base.



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End closure

Closing open trunking with an end piece.



Installation of dividers

The trunking bases are divided into three-compartments through the installation of self-contacting separating retainers. The trunking covers are locked onto the trunking bases using self-contacting trunking clamps. The mounting means that all the metallic parts have an electrically conductive connection to each other.



System structure

Planning aids, RFT raised floor trunking system



Connection of service outlets

Break-out openings in the covers of the trunking allow cable routing to the service outlets.



Cover fastening and equipotential bonding

The trunking covers are fastened to the trunking base using trunking clamps. Trunking clamps create a conductive connection between trunking bases and also to trunking covers.





Service outlet mounting

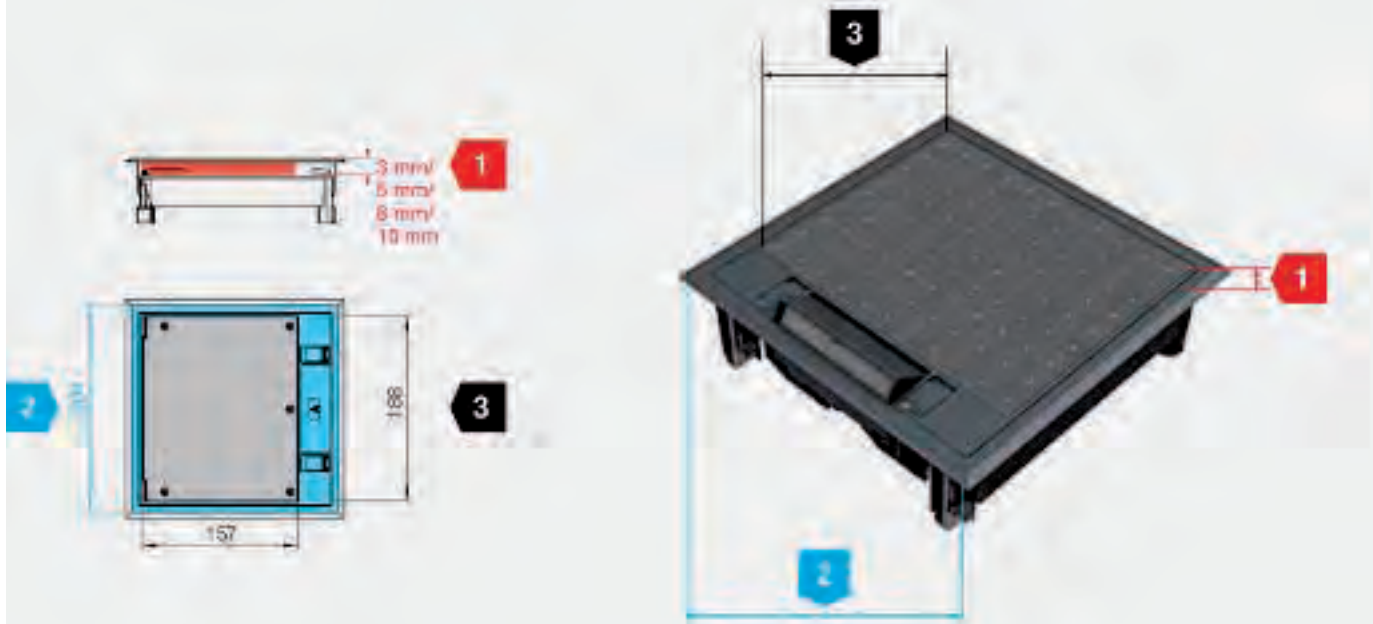
The fixing brackets of the service outlets grip under the raised floor plate (max. thickness of the raised floor plate = 50 mm). Service outlets are fastened in the raised floor plates.



Cable routing

In the intersection area, the separating elements ensure safe separation of the cables.

Installation and floor cut-out dimensions



Various installation and floor cut-out dimensions must be taken into account for the mounting of service outlets and the application of floor coverings in the device lids.

1

Frame height for the floor covering in the lid (red dimensions)

The frame height data relates to the maximum floor covering thickness, including adhesive. If, in the figure, several heights are specified, then the frame height can be changed during construction: By adding or removing spaces, it is possible to adjust the desired frame height to the floor covering. In the as-delivered state, the frame height is usually 5 mm.

2

Floor cut-out for the installation of service outlets (blue dimensions)

The dimensions for the floor cut-out should be considered as target dimensions for correct installation of the service outlet in the floor. They are only generally required for the floor cut-out in system floors. When mounting service outlets in the EÜK screed-covered duct system or in the OKA open trunking system, they need not be taken into account, as these systems offer prefabricated mounting lids with matching installation openings.

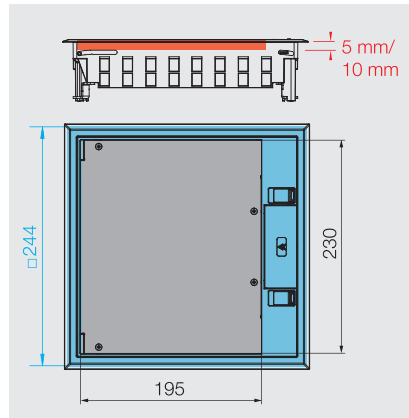
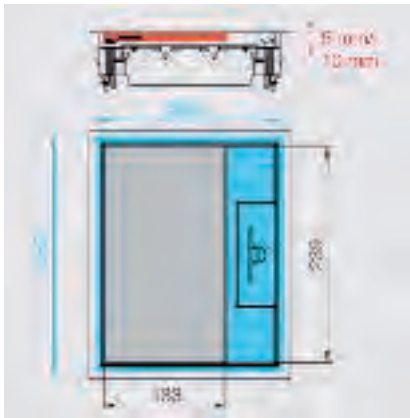
3

Internal dimension of the lid to determine the Floor covering cut-out (black dimensions)

The dimension data relates to the internal dimension of the cover and is used to calculate the floor covering cut-out. Depending on the type of floor covering, appropriate reductions should be taken into account, e.g. for expansion gaps.



Planning aids, RFT raised floor trunking system

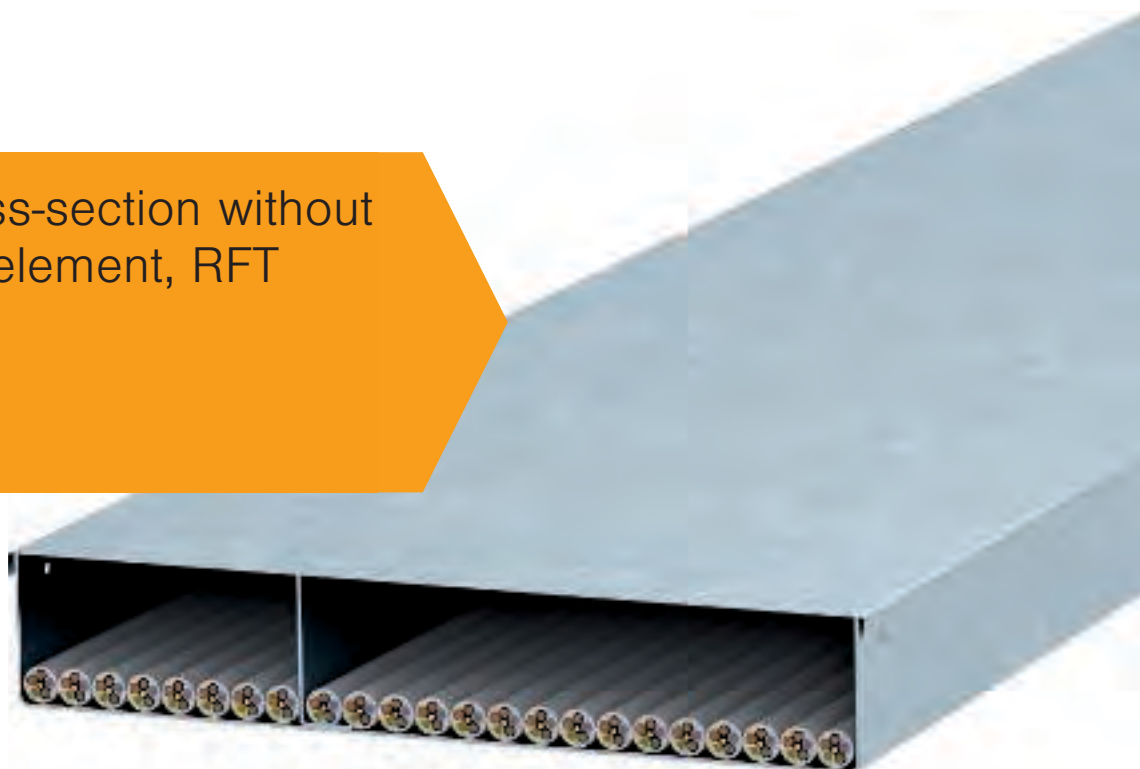


Cables in an installation trunking without separating element

Here you can find an overview which tells you how many cables of which diameter fit into which compartment width. Always observe an initial filling factor of 50%.

Used filling factor in table is 50%.

Usable cross-section without separating element, RFT



Usable cross-sections for RFT

Trunking width in mm	Trunking height in mm	Usable cross-section compartment 1 in mm ²	Usable cross-section compartment 2 in mm ²	Usable cross-section compartment 3 in mm ²	Total in mm ²
225	40	2748	2822	2752	8322
300	40	3716	3790	3720	11226

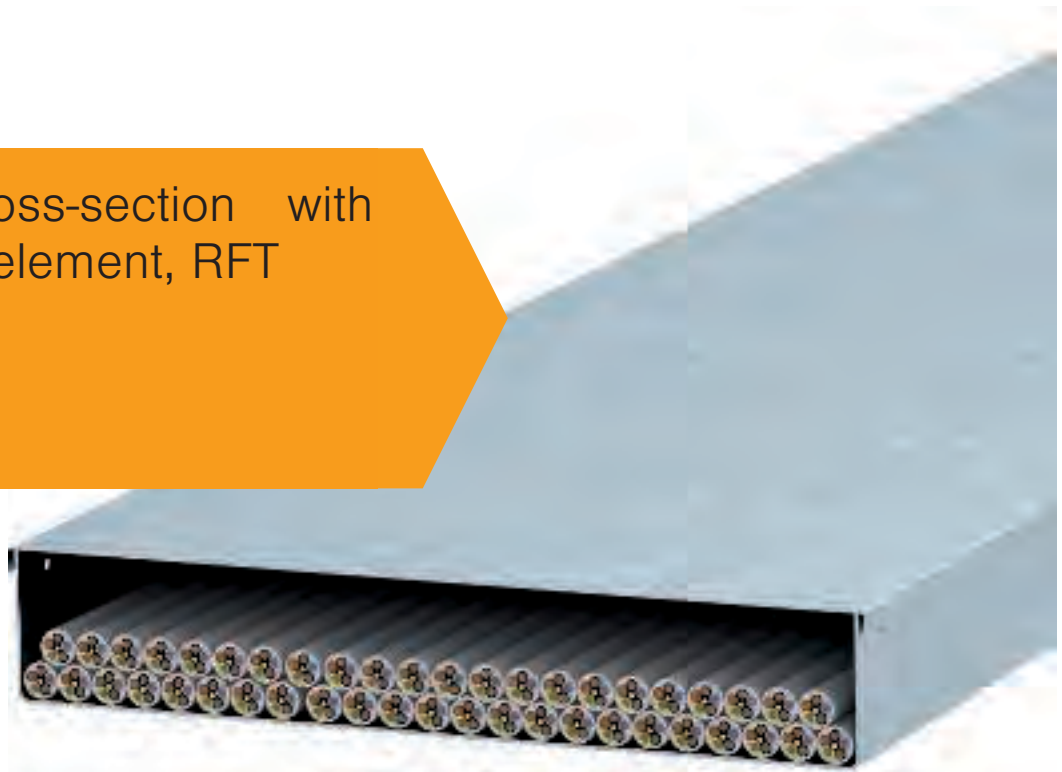
225 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	55	38	28	21	17	14	11	10	8	7	6	5	5	4
Compartment 2	56	39	29	22	17	14	12	10	8	7	6	6	5	4
Compartment 3	55	38	28	22	17	14	11	10	8	7	6	5	5	4

300 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	74	52	38	29	23	19	15	13	11	9	8	7	6	6
Compartment 2	76	53	39	30	23	19	16	13	11	10	8	7	7	6
Compartment 3	74	52	38	29	23	19	15	13	11	9	8	7	6	6

Usable cross-section with separating element, RFT



Planning aids, RFT raised floor trunking system

Usable cross-sections for RFT

Trunking width in mm	Trunking height in mm	Usable cross-section compartment 1 in mm ²	Usable cross-section compartment 2 in mm ²	Usable cross-section compartment 3 in mm ²	Total in mm ²
225	40	1430	1450	1415	4295
300	40	1935	1956	1920	5811

225 mm wide trunking, number of cables

Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	29	20	15	11	9	7	6	5	4	4	3	3	2	2
Compartment 2	29	20	15	11	9	7	6	5	4	4	3	3	3	2
Compartment 3	28	20	14	11	9	7	6	5	4	4	3	3	2	2

300 mm wide trunking, number of cables

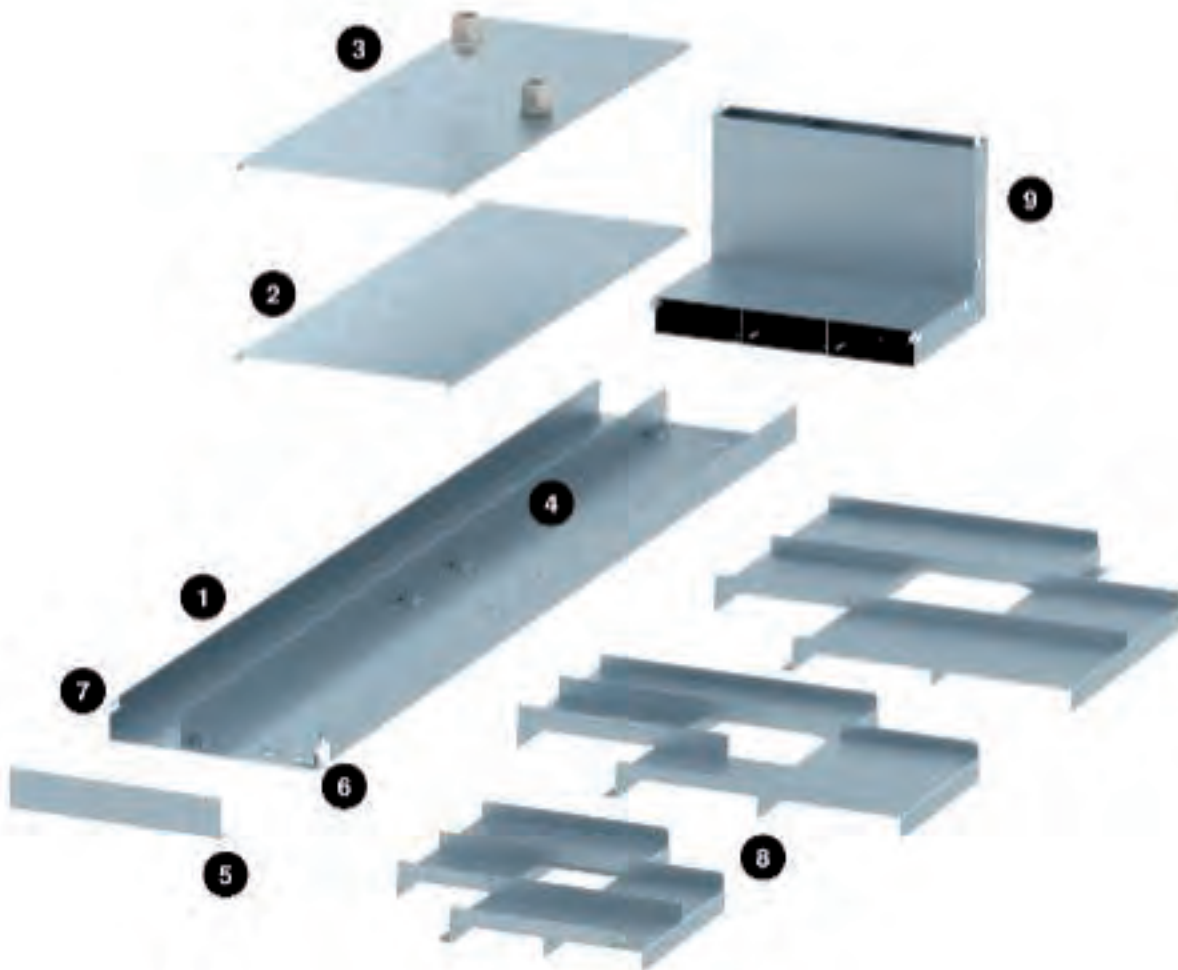
Cable Ø in mm	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Compartment 1	39	27	20	15	12	10	8	7	6	5	4	4	3	3
Compartment 2	39	27	20	15	12	10	8	7	6	5	4	4		3
Compartment 3	38	27	20	15	12	10	8	7	6	5	4	4	3	3

Installation principle, RFT raised floor trunking system

System components

1	Trunking base
2	Trunking cover
3	Trunking cover with prepared knock-outs for flexible conduits
4	Separating retainer
5	End closure
6	Trunking connector
7	Trunking clamp
8	Separating element
9	Vertical bend

Planning aids, RFT raised floor trunking system





Planning checklist

When planning a screed-flush underfloor system, the following points should be observed:

- ✓ Matching of the floor structure (screed height, screed type, insulation layers, sealing, etc.) with the architecture
- ✓ Observe the minimum installation depths of device installation units
- ✓ Matching the structural physics requirements (loads, impact sound, etc.)
- ✓ Select device installation units according to the floor cleaning method
- ✓ When selecting the nominal trunking sizes take sufficient assignment reserves into account



GES service outlets

Service outlets supply workstations and other areas in the centre of the room with power and data connections via the floor. There are versions for dry and wet-cleaned floors. Service outlets are suitable for installation in screed-flush and screed-covered underfloor systems, as well as in system floors.



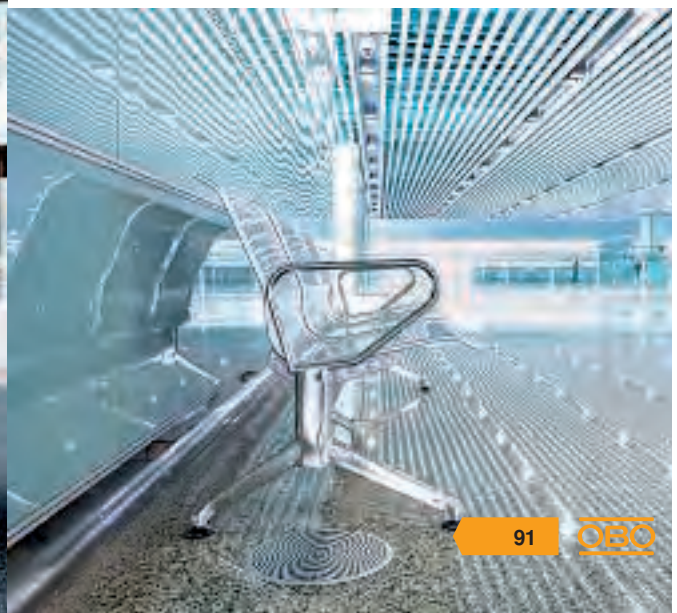
Various colours, shapes and sizes

The GES service outlets are available in round and rectangular versions. Plastic or metal are used as materials.

The plastic version is the tried-and-true solution for office installations. It is available in three colour variants. The metallic stainless steel or aluminium versions look refined and can carry an even greater load. Other solutions are available for areas with increased floor load requirements.



Planning aids, GES service outlets



That's what we call variety.

Polyamide, stainless steel or aluminium – the selection is broad, not only for the material of the GES service outlets. The system offers solutions for dry and wet-cleaned floor coverings, such as carpet, PVC or linoleum, as well as parquet, laminate, tiles and stone floors. With the colour range of iron grey, graphite black, grey-beige and stainless steel, the service outlets can be inserted discreetly in any floor covering.

Planning aids, GES service outlets



Nominal size 2 with handle clamp
External dimension 118 x 194 mm
1 compartment



Nominal size 4 with locking slider
External dimension 222 x 222 mm
2 compartment



Nominal size 4 with handle clamp
External dimension 222 x 222 mm
2 compartment



Nominal size 4, stainless steel, with handle clamp
External dimension 222 x 222 mm
2 compartment



Nominal size 6 with locking slider
External dimension 274 x 221 mm
3 compartment



Nominal size 6 with handle clamp
External dimension 274 x 221 mm
3 compartment



Nominal size 6, stainless steel, with handle clamp
External dimension 274 x 220.5 mm
3 compartment



Nominal size 9 with locking slider
External dimension 264 x 264 mm
3 compartment



Nominal size 9 with handle clamp
External dimension 264 x 264 mm
3 compartment



Nominal size 9, stainless steel, with handle clamp
External dimension 265 x 265 mm
3 compartment



Nominal size R4 with handle clamp
External dimension \varnothing 234 mm
2 compartment



Nominal size R7 with handle clamp
External dimension \varnothing 294 mm
3 compartment



Nominal size R7, aluminium, with handle clamp
External dimension \varnothing 294 mm
3 compartment



Nominal size R9 with locking slider
External dimension \varnothing 324 mm
3 compartment



Nominal size R9 with handle clamp
External dimension \varnothing 324 mm
3 compartment



Nominal size R9, aluminium, with handle clamp
External dimension \varnothing 323 mm
3 compartment



Nominal size R9, aluminium
External dimension \varnothing 325 mm
3 compartment



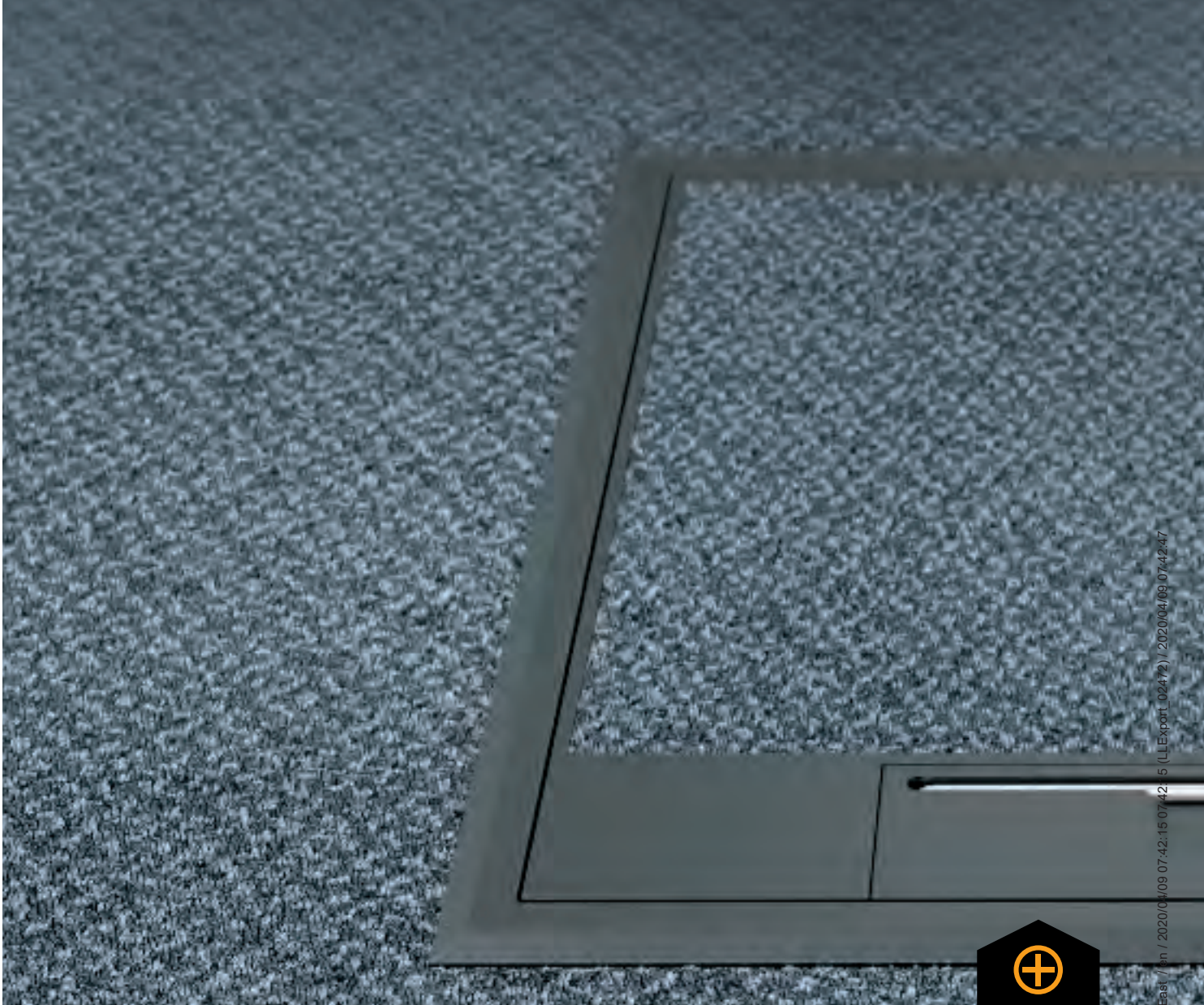
Nominal size R9, aluminium with handle clamp
External dimension \varnothing 325 mm
3 compartment



Rectangular polyamide service outlets

Trusted quality

The trusted rectangular GES plastic service outlets have been installed millions of times around the world. OBO has continuously developed them and adapted them to changing requirements. Today, they possess countless intelligent details, such as cable routing clips, carpet protection frames, reliable edge protection and a locking lid closure system with automatic lid opening.



Simple to open

Tried-and-trusted opening mechanism: A handle clamp is integrated in the cord outlet, with which the lid can be opened. Alternatively, service outlets with locking sliders are available.



Options to equip

The outlet can be mounted in a minimum installation depth of 80 mm in trunking systems, as well as in raised and cavity floors. The outlets of nominal size 4 and 6 are 2-compartment. The outlets of nominal size 9 are 3-compartment.



Floor covering depth

The floor covering recess in the cover can be increased from 5 mm to 10 mm by using the supplied spacer frame.



Rectangular metal service outlets

Attractive design in stainless steel

The rectangular service outlets with carpet protection frame and hinged covers made of brushed stainless steel stand out through their high-quality design. The installation frame and the solid, 3 mm-thick pressure plate in the lid are made from zinc-plated sheet steel. They provide the necessary stability: Heavy loads are also not a problem.



Swivellable cord outlet

The model has a swivelling stainless steel cord outlet which protects the cable exit in dry and moist-cleaned floors.

Range of variants and installation heights

The outlet can be mounted in a minimum installation depth of 80 mm in trunking systems, as well as in raised and cavity floors. The outlets of nominal size 4 and 6 are 2-compartment. The outlets of nominal size 9 are 3-compartment.

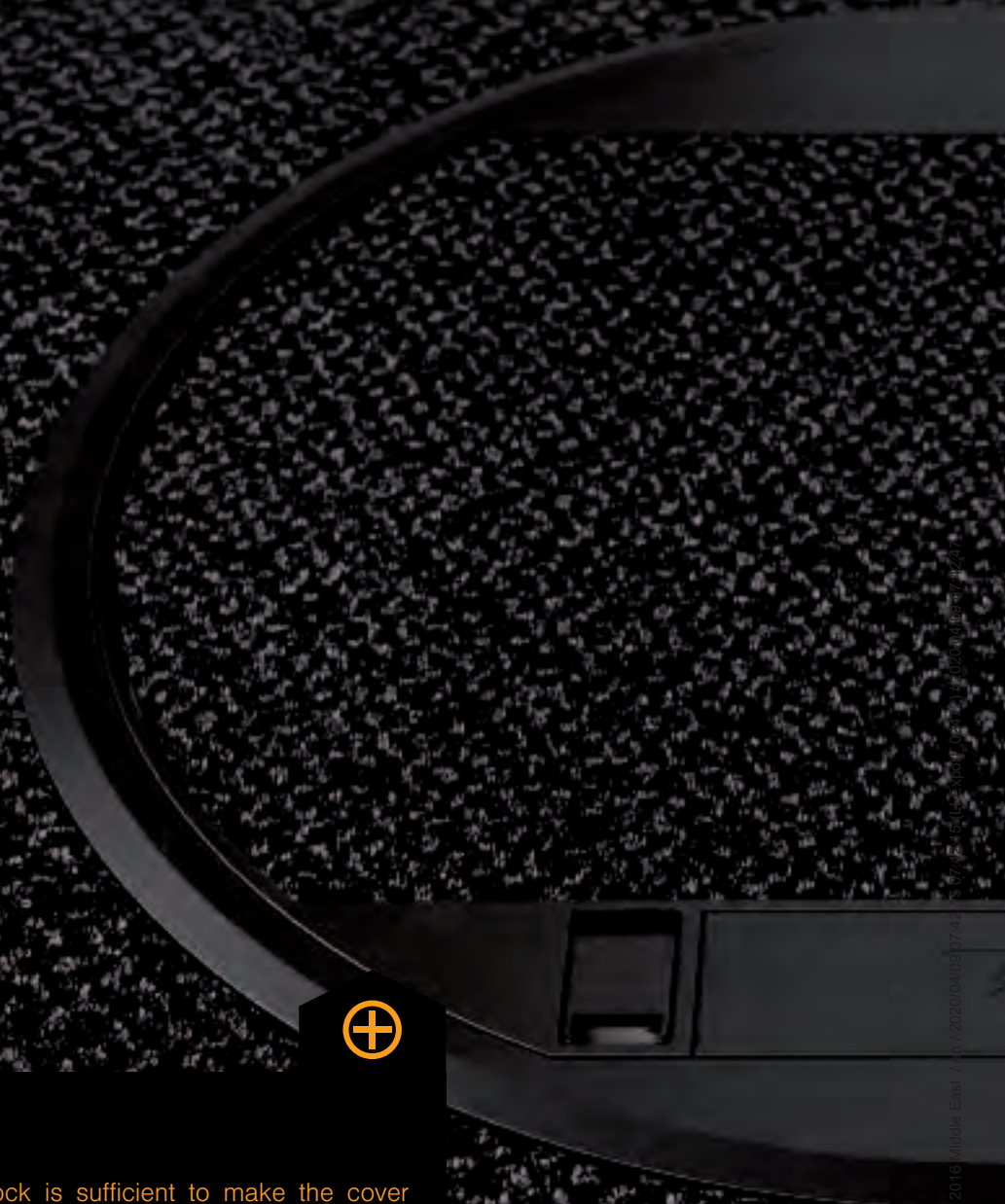


Lowerable mounting box

The service outlet for the installation of power, data and multimedia equipment can be lowered by a maximum of 25 mm in the locking ladder.



Round polyamide service outlets



Lid with locking slider

Slight shifting of the active cover lock is sufficient to make the cover open. It also engages again with slight pressure and stays shut. Alternatively, the classic version with a handle clamp is available.

Options to equip

The outlet can be mounted in a minimum installation depth of 80 mm in trunking systems, as well as in raised and cavity floors. The outlets of nominal size 4 and 6 are 2-compartment. The outlets of nominal size 9 are 3-compartment.



Floor covering depth

The recess for the floor covering in the cover of the outlets can be adjusted in stages to a floor covering depth of between 3 and 12 mm.



GRAF9

The solution for wet-cleaned floors: The GRAF9 service outlet is ideally suited for wet-cleaned floors. The GRAF9 is made completely of metal and offers a high load capacity. A variant is available with a ring-shaped structure in the lid surface, along with a variant with a 4 mm floor covering recess in the hinged cover.



High-quality materials

The floor covering protection frame and the hinged cover of the GRAF9 service outlet are made of die-cast aluminium. Its tube body is made from robust die-cast zinc.

Wet care

The GRAF9 service outlet possesses seals in the cover and in the tube body. If the service outlet is opened for cable installation, the 10 mm-high tube body ring protects the electrical installation against the ingress of water. The GRAF9 service outlet with tube body thus fulfils the IP requirements for installation in wet-cleaned floors.



Loads

The service outlet can withstand extreme loads. When installed in a screed box with heavy-duty extension, installation in floor areas with increased load requirements is possible.

For more information, refer to the section on heavy-duty systems.



Practical tube body

The tube body is the cable outlet for wet-cleaned floors. With just a few actions, this can be opened for cable routing and can just as easily be lowered into the cover of the GRAF9 to be flush with the floor.



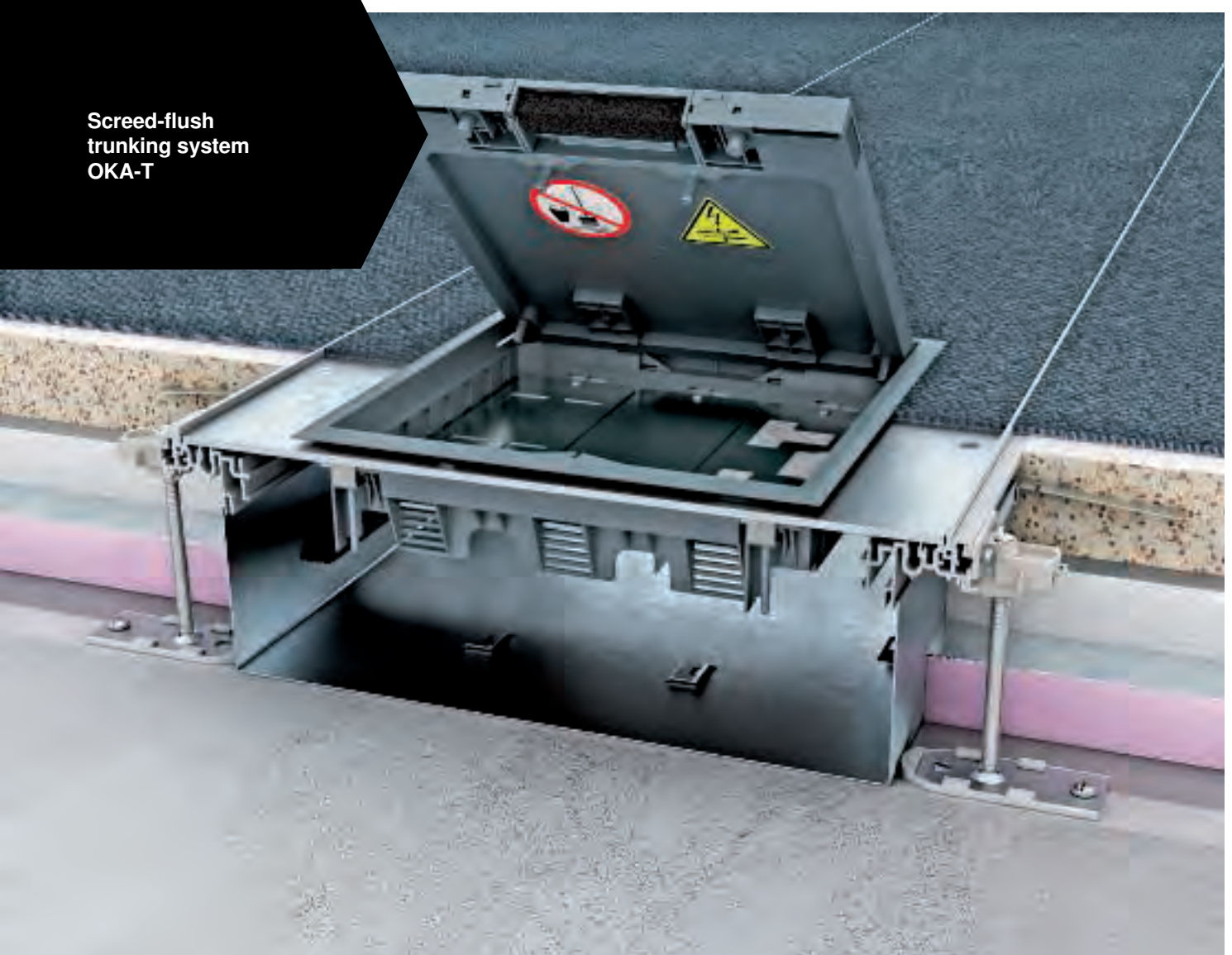
Compatible

Service outlets from Ackermann made by OBO are suitable for installation in underfloor trunking systems as well as in system floors. They are compatible with various underfloor systems, including the EÜK-SN screed-covered system and the open OKA-T screed-flush system.



Screed-covered duct system EÜK

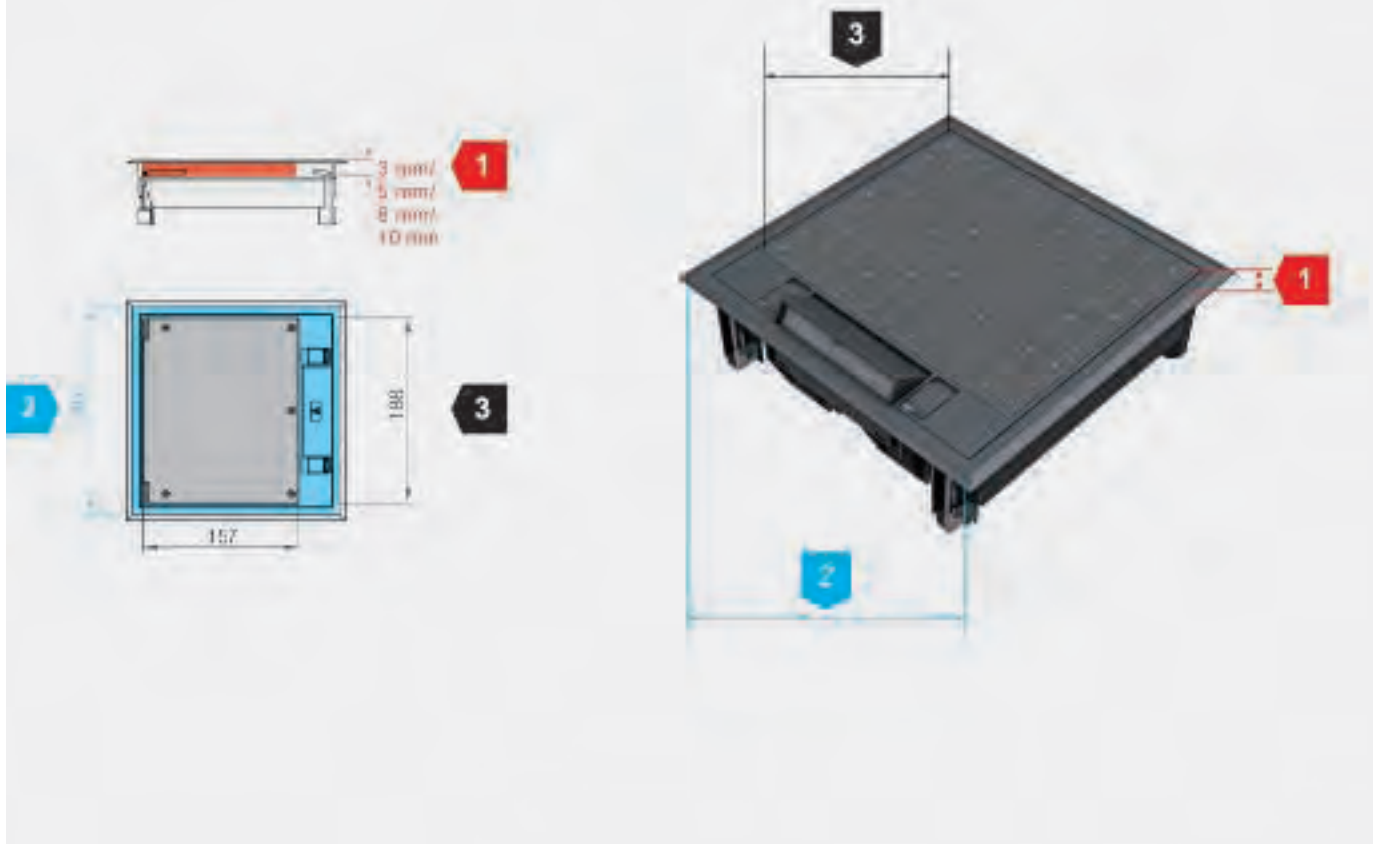
Screed-flush
trunking system
OKA-T



Raised and cavity floors



Installation and floor cut-out dimensions



Various installation and floor cut-out dimensions must be taken into account for the mounting of service outlets and the application of floor coverings in the device lids.

1

Frame height for the floor covering in the lid (red dimensions)

The frame height data relates to the maximum floor covering thickness, including adhesive. If, in the figure, several heights are specified, then the frame height can be changed during construction: By adding or removing spaces, it is possible to adjust the desired frame height to the floor covering. In the as-delivered state, the frame height is usually 5 mm.

2

Floor cut-out for the installation of service outlets (blue dimensions)

The dimensions for the floor cut-out should be considered as target dimensions for correct installation of the service outlet in the floor. They are only generally required for the floor cut-out in system floors. When mounting service outlets in the EÜK screed-covered duct system or in the OKA open trunking system, they need not be taken into account, as these systems offer prefabricated mounting lids with matching installation openings.



3

Internal dimension of the lid to determine the Floor covering cut-out (black dimensions)

The dimension data relates to the internal dimension of the cover and is used to calculate the floor covering cut-out. Depending on the type of floor covering, appropriate reductions should be taken into account, e.g. for expansion gaps.

4

Minimum floor structure height (raw concrete ceiling to finished floor)

The dimension describes the minimum floor structure height from the raw concrete ceiling to the top edge of the finished floor. It guarantees correct installation and use of installation devices, such as sockets, data and multimedia connections.

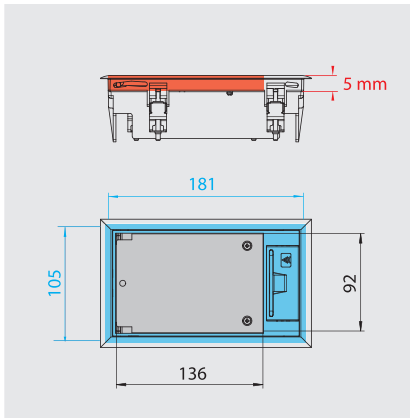


Minimum installation heights

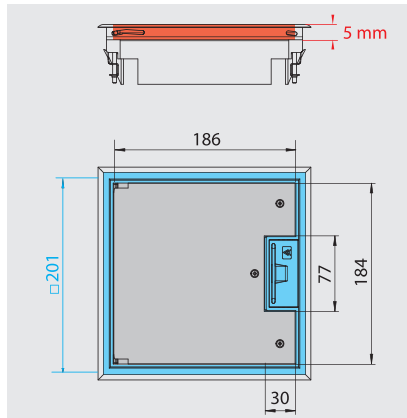
Service outlet type	Frame height in the lid	Minimum floor structure height
GES2, GES4, GESR4, GESR9SR	5 mm	73 mm
GES4-2, GES6-2, GES9-3B, GES9-3S	5 mm	73 mm
GES4-2, GES6-2, GES9-3B, GES9-3S	10 mm	78 mm
GES6, GESR9	5 mm	73 mm
GESR7, GESRA7, GESRA9, GESR9/10	5 or 10 mm	78 mm
GES4M-2, GES6M-2, GES9M-2	5 or 10 mm	78 mm
GESR9-2	5 or 10 mm	76 mm
GRAF9	-	80 mm

System measurements service outlets, rectangular

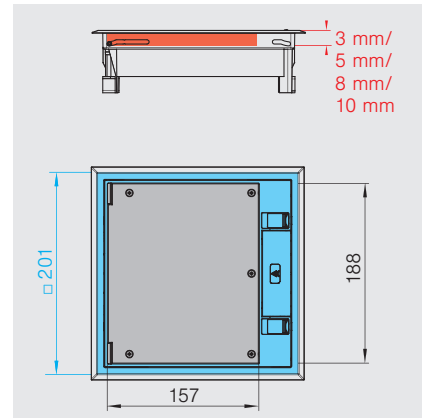
Planning aids, GES service outlets



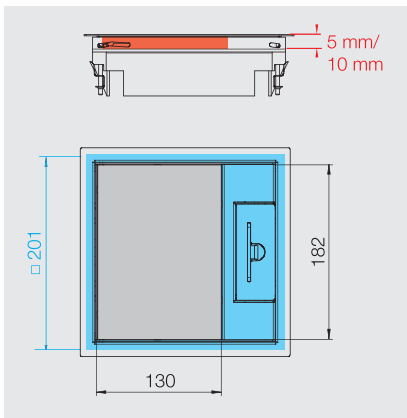
Nominal size 2, type GES2



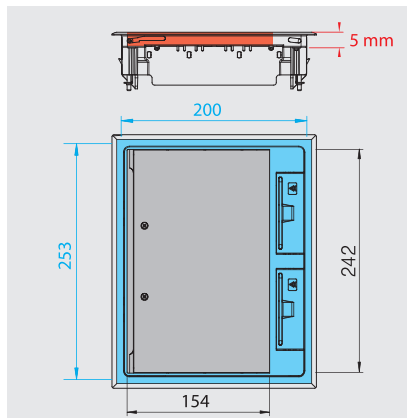
Nominal size 4, type GES4



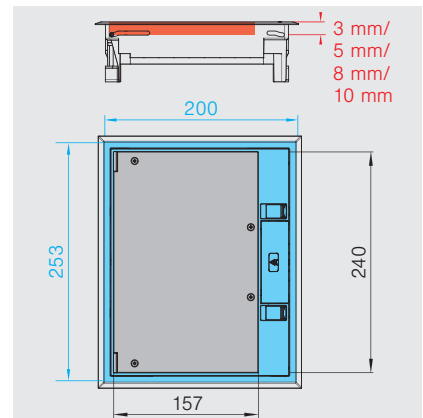
Nominal size 4, type GES4-2



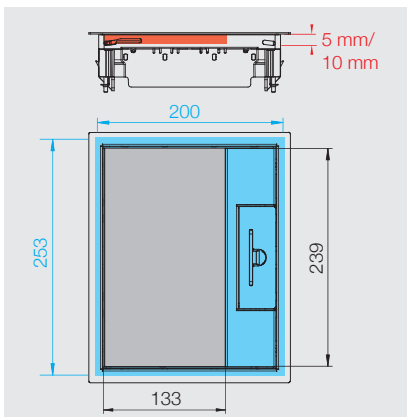
Nominal size 4, type GES4M-2



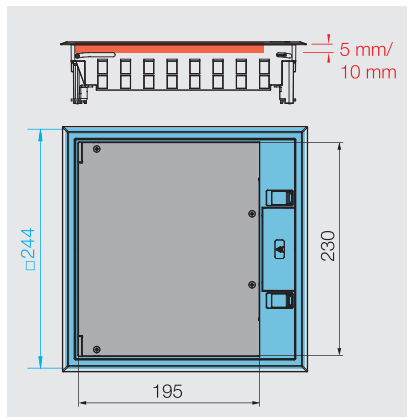
Nominal size 6, type GES6



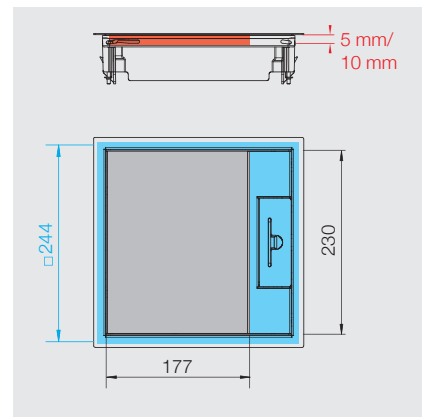
Nominal size 6, type GES6-2



Nominal size 6, type GES6M-2

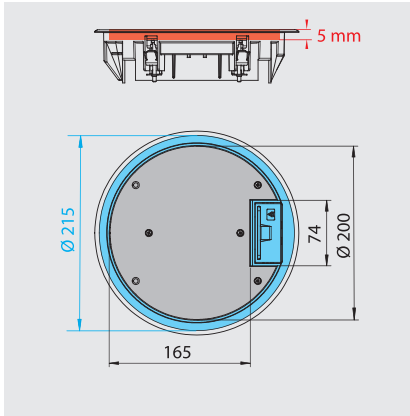


Nominal size 9, type GES9-3S and GES9-3B

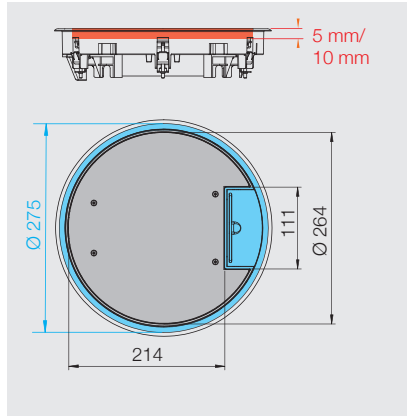


Nominal size 9, type GES9M-2

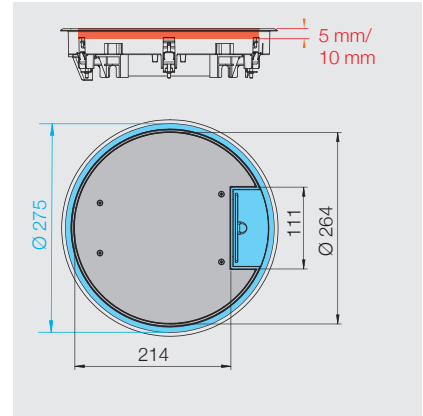
System measurements service outlets, round



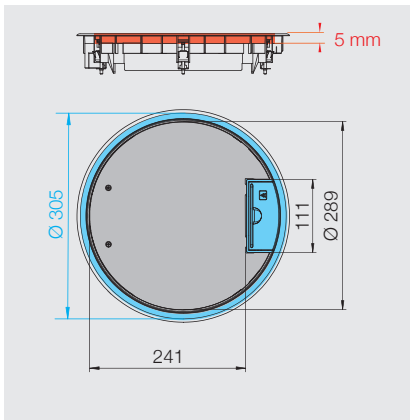
Nominal size R4, type GESR4



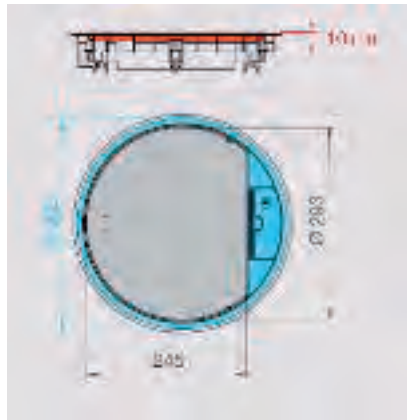
Nominal size R7, type GESR7



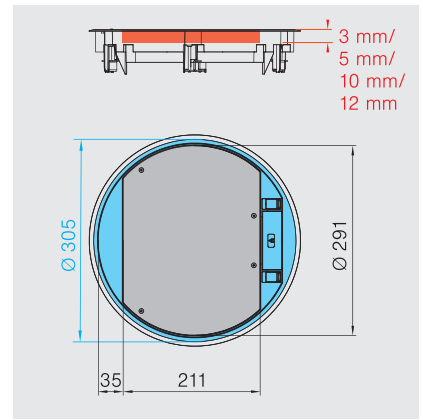
Nominal size R7, type GESRA7



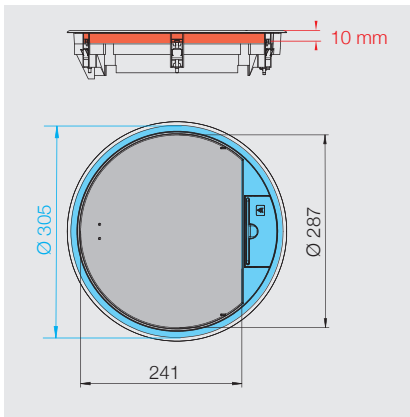
Nominal size R9, type GESR9



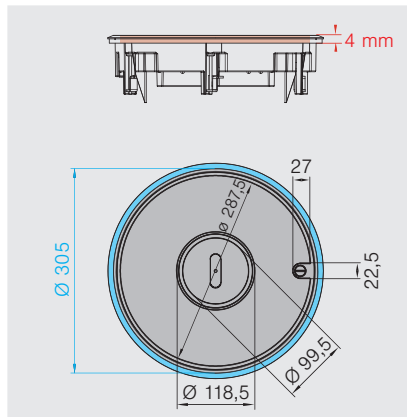
Nominal size R9, type GESR9 10



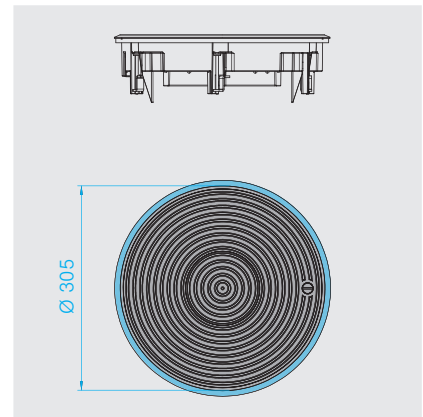
Nominal size R9, type GESR9-2



Nominal size R9, type GESRA9



Nominal size R9, type GRAF9-2 BA



Nominal size R9, type GRAF9-2

Mounting aid, rectangular service outlet

Planning aids, GES service outlets



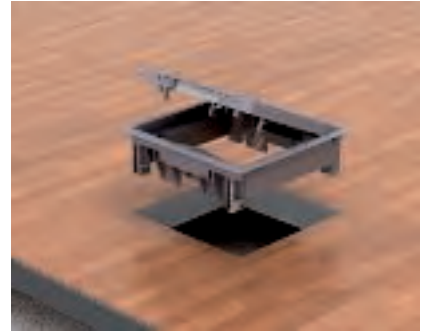
Laying the floor covering

Lay the floor covering up to the opening of the blanking lid.



GES mounting in duct systems

Insert the service outlet into the blanking lid from above and screw it tight. The fixing unit grips under the blanking lid.



GES mounting in raised floor

When used in raised floors, the fastening bracket reaches under the raised floor plate, fastening the service outlet.



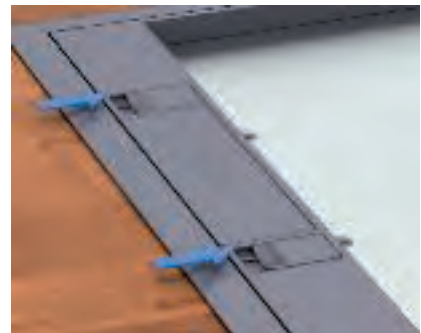
Removal of the hinged cover

Before mounting accessories, turn the lid out of the frame on one side and remove it. When device mounting is complete, insert the cover again.



Turning the hinged cover through 180°

Remove the hinged cover and insert it on the opposite side of the frame.



Opening of the hinged lid

Actuate both lid sliders. The fitters push the hinged cover upwards. Lift the lid using the cord outlet.



Adjust of the floor covering recess to 3 mm for GES4-2, GES6-2 and GES9-2

Slacken the 4 lid screws and the inserted 5 mm spacer discs and replace them with the 2 mm spacer discs. Screw the sheet steel lid on again.



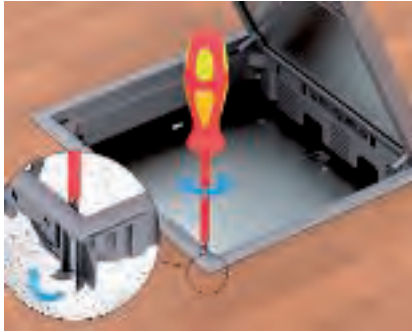
Adjust of the floor covering recess to 8 mm for GES4-2, GES6-2 and GES9-2

Slacken the 4 lid screws and the inserted 5 mm spacer frame and replace it with the 2 mm spacer bars. Screw the sheet steel lid on again.



Adjust of the floor covering recess to 10 mm for GES4-2, GES6-2 and GES9-2

Slacken the 4 lid screws and remove the inlaid spacer strip. Screw the sheet steel lid on again.



Universal fastening for duct mounting for GES9-2U

On screwing in, the retaining profile automatically turns outward. It grips under the blanking lid.



GES9-2U universal fastening, double base mounting

The clamping range of the retaining profile is suitable for raised floor plates of a thickness of up to 45 mm.



GES9-2U universal fastening, double base mounting, $s > 47$ mm

Slacken the retaining profile from the screw and turn it round. Turn the screw back into the retaining profile. In this position, the clamping range is 37 to 75 mm.



Installation mounting tray

Insert mounting tray in service outlet and fix it.



Device mounting

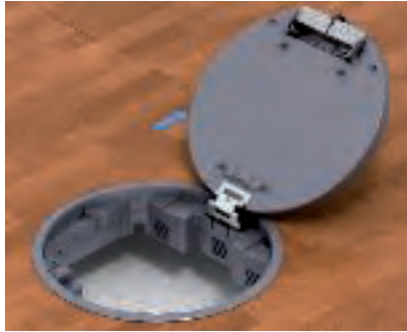
Connect device and fix it together with cover plate in mounting tray.



Mounting aid, round service outlet - GESR4 and GESR7



Laying the floor covering for duct systems
Lay the floor covering up to the opening of the blanking lid.

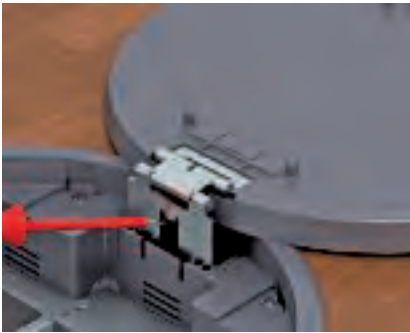


Opening of the hinged lid for GESR round service outlet and depositing inwards
Push the hinged lid through an angle of 90° (stop). The hinge locks on the carpet protection frame.

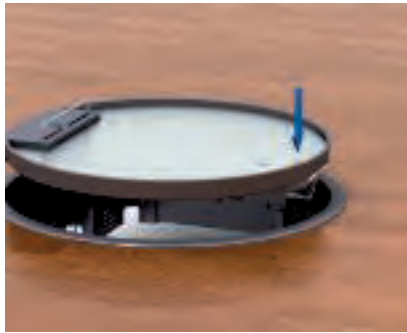


Closing of the hinged lid for GESR round service outlet
Close the lid. Press on the lid above the lid hinge until the end position is reached.

Planning aids, GES service outlets



Expansion of the hinged lid for GESR round service outlet
Lift the locking lug in the hinge seat of the frame using a screwdriver. Lift the lid out of the holder.



Installation of the hinged lid for GESR round service outlet
Insert the lid hinge in the bracket. Close the lid. Press on the lid above the lid hinge until the end position is reached.



Device mounting
Connect device and fix it together with cover plate in mounting tray.

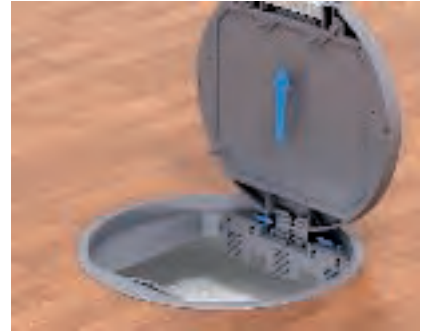
Mounting aid, round service outlet - GESR9-2



Laying the floor covering for duct systems
Lay the floor covering up to the opening of the blanking lid.



Opening of the hinged lid for GESR9-2U
Actuate both lid sliders. The fitters push the hinged lid upwards. Lift the lid using the cord outlet.



Removal of the hinged lid
Push the hinge together and lift it, together with the lid, upwards out of the holder.



Insertion of the hinged lid
Push the hinge together and insert in the holder in the frame.



Installation of the hinged cover for GESR round service outlet
Slacken the 4 lid screws and the inserted 7 mm spacer frame and replace it with the 2 mm spacer bars. Screw the sheet steel lid on again.



Adjust of the floor covering recess to 10 mm
Slacken the 4 lid screws and the inserted 7 mm spacer frame and replace it with the 2 mm spacer bars. Screw the sheet steel lid on again.



Adjust of the floor covering recess to 12 mm
Slacken the 4 lid screws and remove the inserted 7 mm spacer frame. Screw the sheet steel lid on again.



Universal fastening, duct mounting
On screwing in, the retaining profile automatically turns outward. It grips under the mounting lid.



Universal fastening, raised floor mounting
The clamping range of the retaining profile is suitable for raised floor plates of a thickness of up to 45 mm.



Universal fastening, raised floor mounting, $s \geq 47$ mm
Slacken the retaining profile from the screw and turn it round. Turn the screw back into the retaining profile. In this position, the clamping range is 37 to 75 mm.



Universal fastening, cavity floor mounting
On screwing in, the retaining profile automatically turns outward, locking the service outlet.



Installation mounting tray
Insert mounting tray in service outlet and fix it.



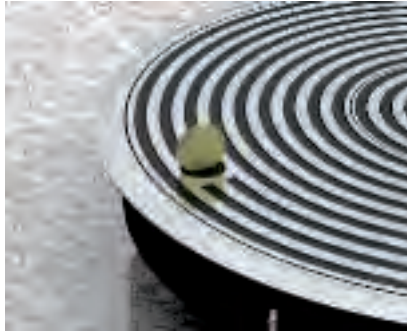
Device mounting
Connect device and fix it together with cover plate in mounting tray.

Mounting aid, service outlet, wet-cleaned



Laying the floor covering

Lay the floor covering up to the mounting opening for GRAF9.



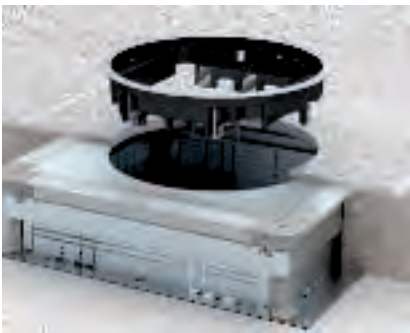
Lid closing

A rotary lock closes the lid in the frame. After release (e.g. with a small coin), the lid is raised by spring force and can be opened simply.



Removing the hinged lid

Push the hinge together and lift the lid upwards out of the holder.



Mounting in duct systems

Insert the service outlet into the mounting lid from above and screw it tight. The fastening unit grips under the mounting lid.



Mounting in raised and cavity floor

When used in raised and cavity floors, the universal fixing bracket acts as an expansion claw. Tighten the screw with max. 4 rotations. The claws fasten the service outlet in the mounting opening.



Installation of the hinged cover

Push the hinge together and insert in the holder in the frame.



Lifting, tube body

Press the tube body out from the inside and lock it by turning it left from the top.



Opening of the tube body

Release the tube body cover from the base by pressing the two pressure surfaces at the side and lift it out.



Cable infeed

The consumer cables are inserted through the opened tube body with the opened lid and then connected in the installed connection sockets. Then the lid is pushed down and locked and the tube body cover attached.



Lower the tube body

Lower the tube body cover by pressing the two pressure surfaces at the side, unlock it by turning it to the right and lower it completely.



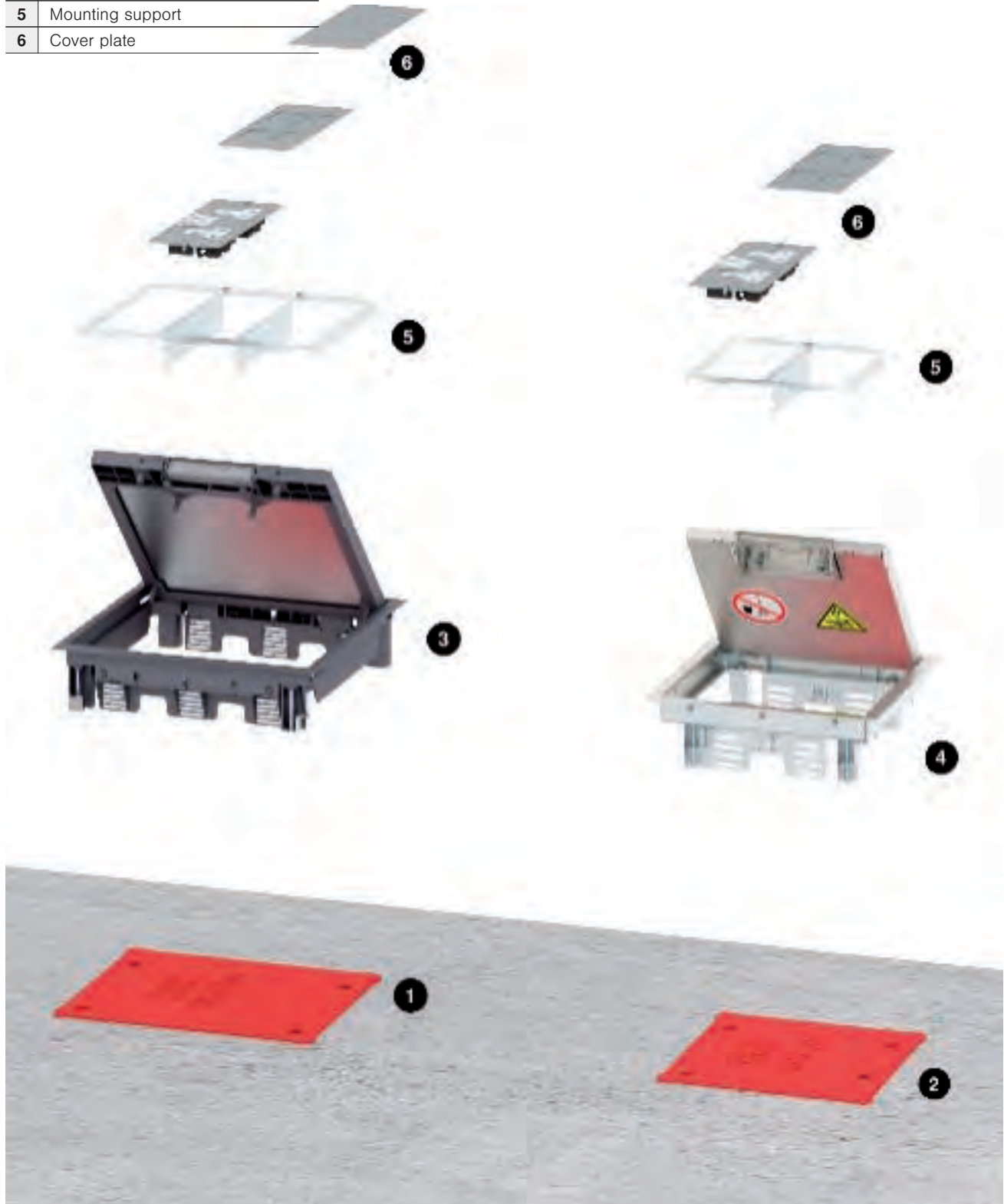
Device mounting

Connect device and fix it together with cover plate in mounting tray.

Installation principle, service outlet in EUK-SN

System components

1	UDS underfloor box, nominal size 6
2	Underfloor box UDS, nominal size 4
3	Service outlet, GES6-2, polyamide
4	Service outlet, GES4M, stainless steel
5	Mounting support
6	Cover plate



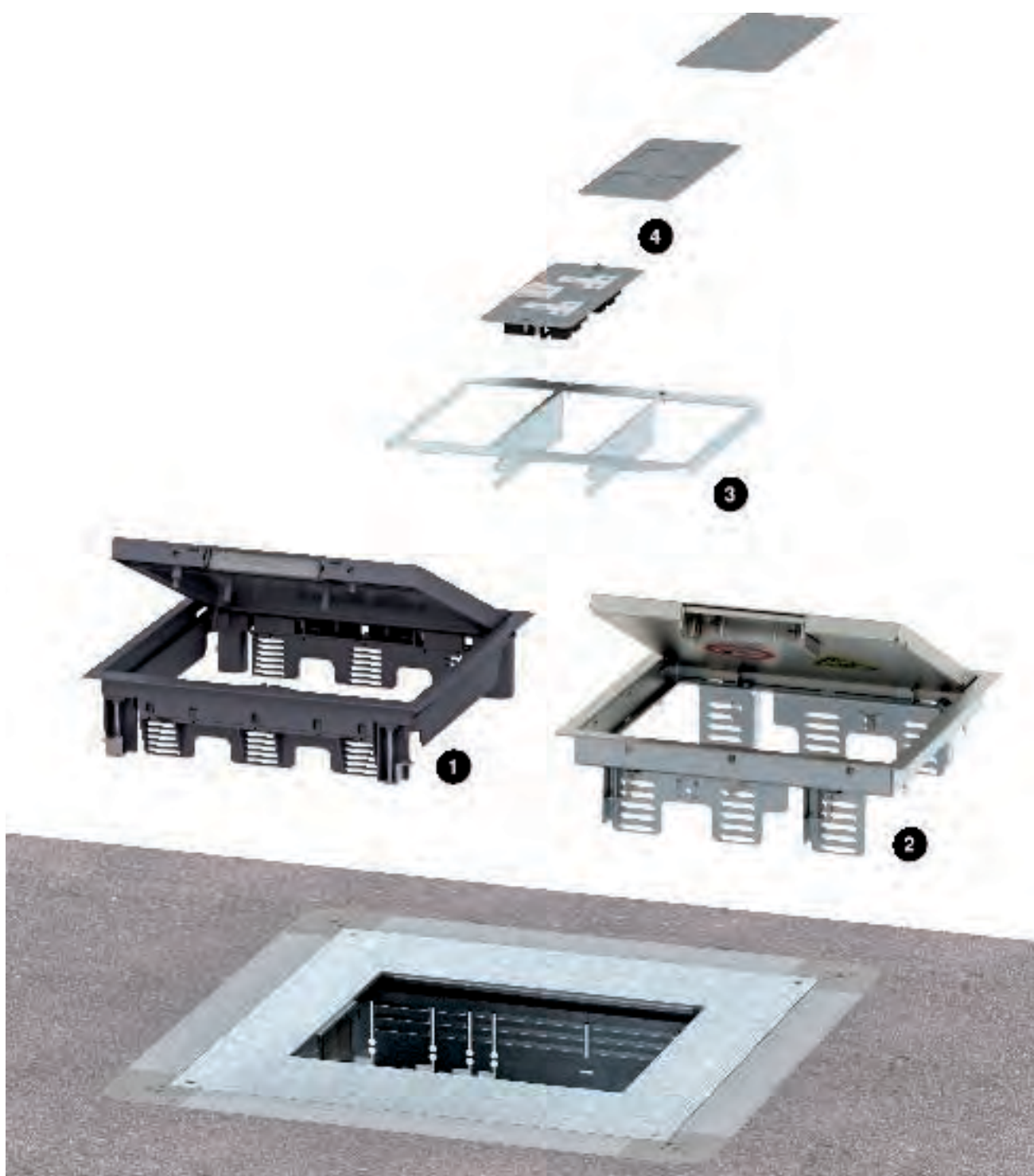
Planning aids, GES service outlets



Installation principle, rectangular service outlet

System components

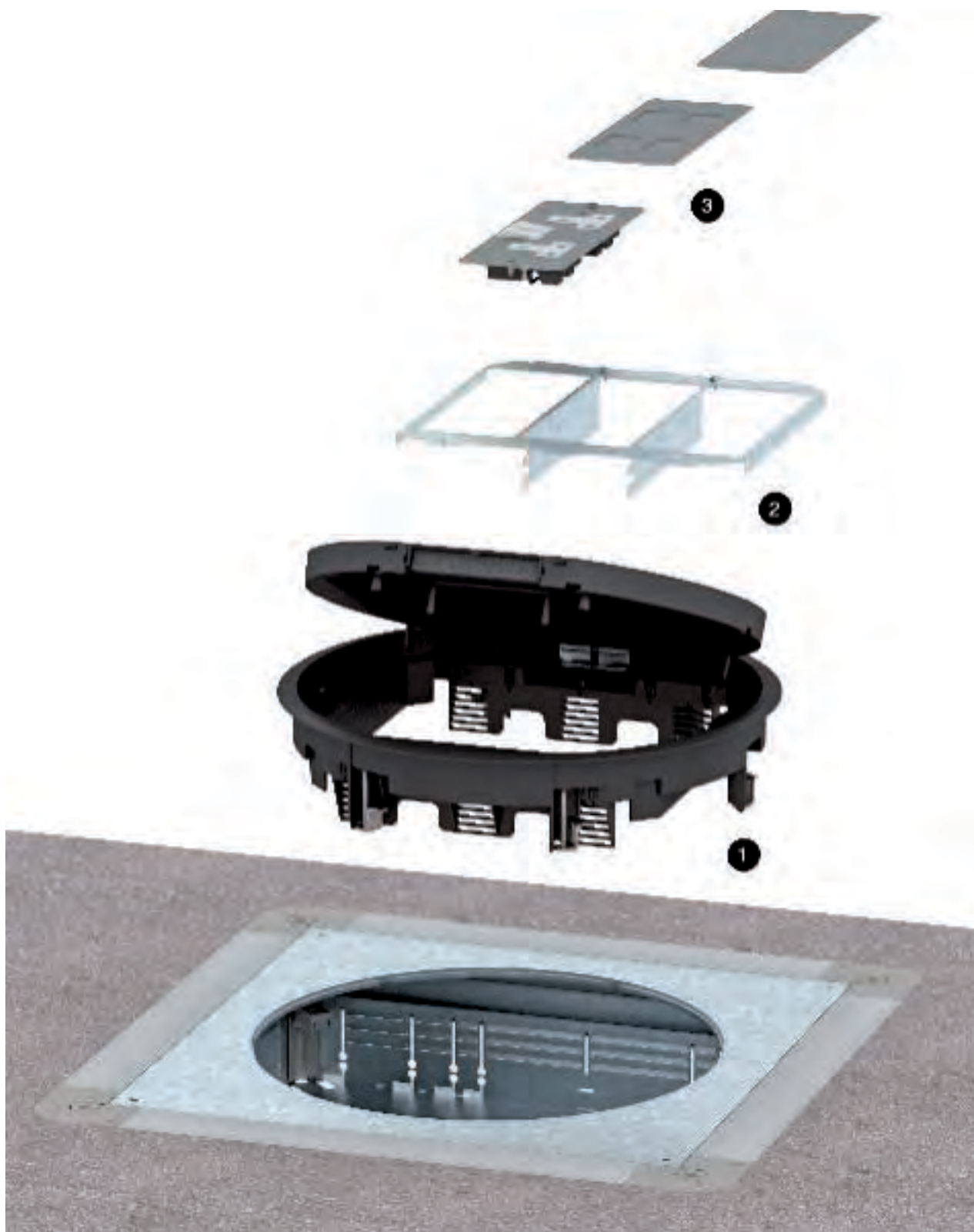
1	Service outlet, rectangular
2	Service outlet, metal, rectangular
3	Mounting support
4	Cover plate



Installation principle, round service outlet

System components

1	Service outlet, round
2	Mounting support
3	Cover plate

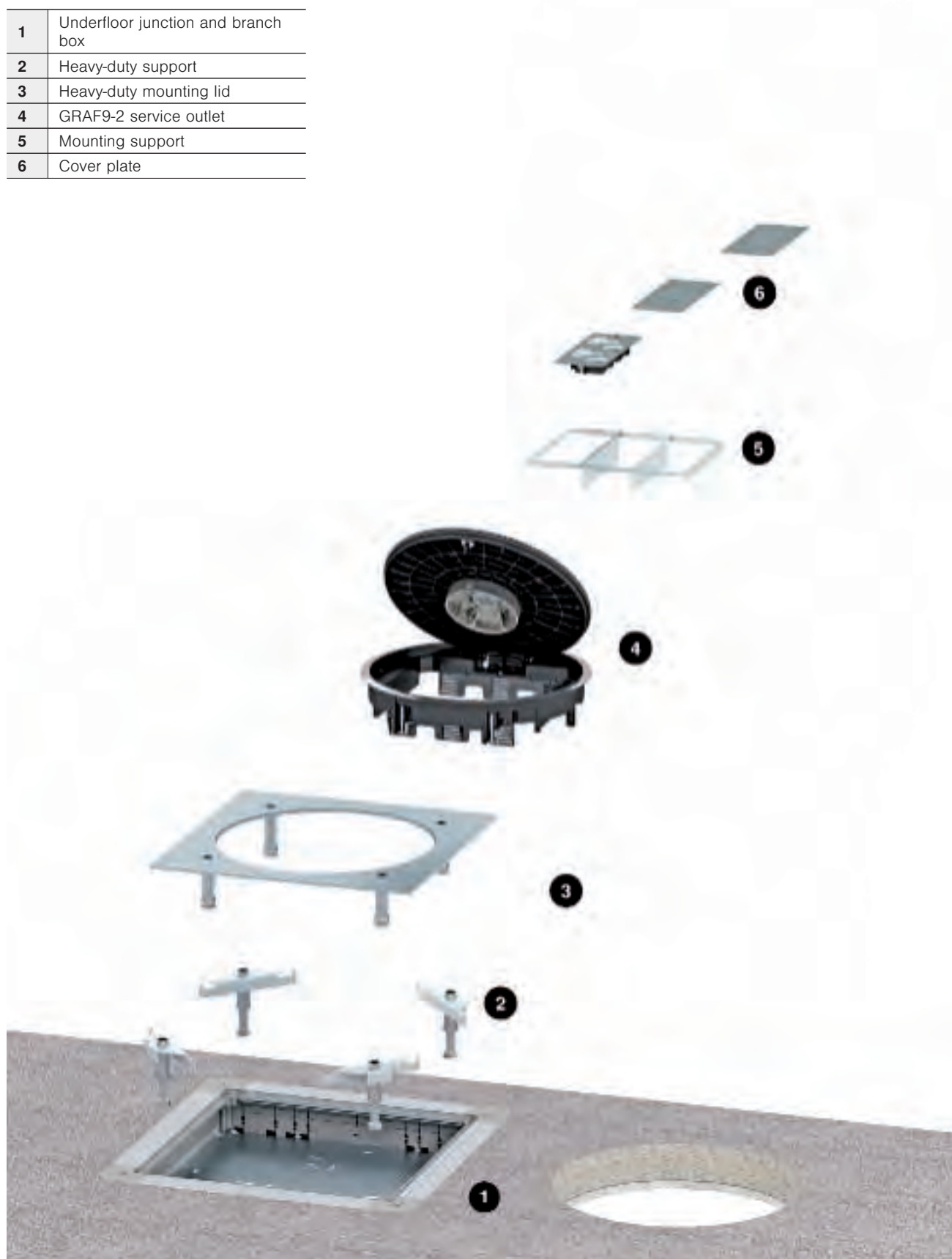


Planning aids, GES service outlets

Installation principle, wet-cleaned service outlet

System components

1	Underfloor junction and branch box
2	Heavy-duty support
3	Heavy-duty mounting lid
4	GRAF9-2 service outlet
5	Mounting support
6	Cover plate



Standard data

To DIN EN 50085-1 and DIN EN 50085-2-2

Class		Service outlets type GES	GRAF9 service outlet
6.2	According to impact resistance for installation and application		
6.2.4	Electrical installation duct systems for impact energy 5 J	5 J	5 J
6.3	According to temperatures, as specified in Tables 1, 2 and 3		
Table 1	Minimum storage and transport temperature ± 2 °C	-15 °C	-15 °C
Table 2	Minimum installation and application temperatures ± 2 °C	+5 °C	+5 °C
Table 3	Application temperatures ± 2 °C	+60 °C	+60 °C
6.4	According to the resistance against fire spread		
6.4.1	Electrical installation duct systems which permit the spread of fire	x	x
6.5	According to the electrical conductivity		
6.5.1	Electrical installation duct systems with electrical conductivity	x ¹	x
6.5.2	Electrical installation duct systems without electrical conductivity	x ²	
6.6	According to the electrical insulation property		
6.6.1	Electrical installation duct systems with electrical insulation capability	x ²	
6.6.2	Electrical installation duct systems without electrical insulation capability	x ¹	x
6.7	According to the protection ratings offered by the housing or casing to EN 60529:1991		
6.7.1	According to protection against ingress of solid foreign bodies	x	x
6.7.3	According to protection against contact with dangerous parts	x	x
6.101	Depending on the type of floor care		
6.101.1	Electrical installation duct systems for dry floor cleaning	x	
6.101.2	Electrical installation duct systems for wet floor cleaning when the service outlet is not in use		x
6.101.3	Electrical installation duct systems for wet floor cleaning when the service outlet is in use		x
6.102	According to resistance to vertical loads affecting a small surface area		
6.102.5	Electrical installation duct systems for 2,000 N	x ²	
6.102.7	Electrical installation duct systems for 3,000 N	x ¹	x
6.103	According to resistance to vertical loads affecting a large surface area		
6.103.2	Electrical installation duct systems for 3,000 N	x ²	
6.103.3	Electrical installation duct systems for 5,000 N	x ¹	
6.103.4	Electrical installation duct systems for 10,000 N		x

¹Applies to metallic GES, ² applies to polyamide GES



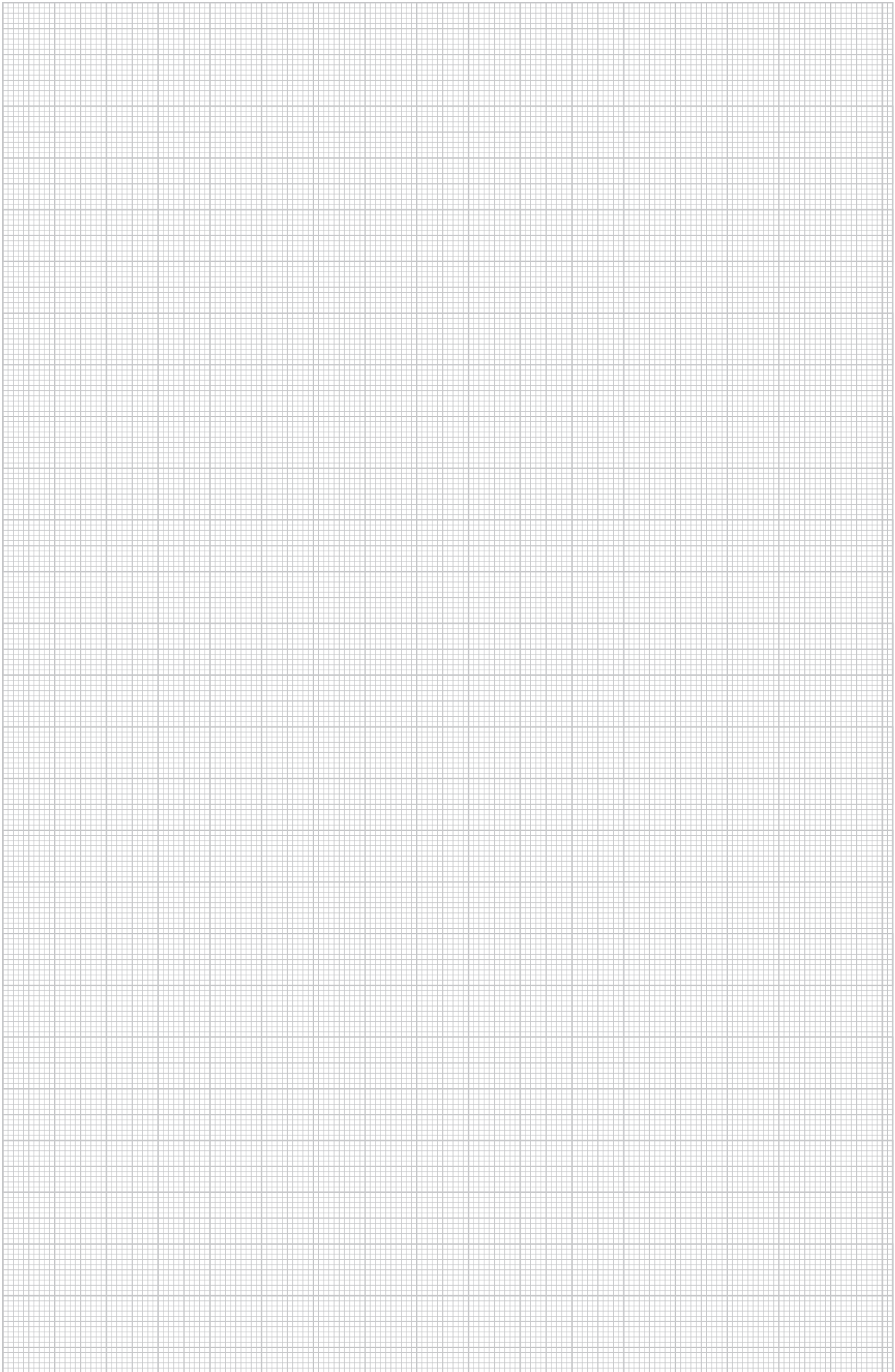


Planning checklist

When selecting underfloor systems with service outlets, the following planning criteria, amongst others, should be taken into account:

- ✓ Take the type of floor covering into account. With wet-cleaned floors, insert a service outlet with tube body
- ✓ Select the size of the service outlet according to the number of installation units
- ✓ Observe the minimum installation depth for the installation of sockets and data/multimedia connections
- ✓ Plastic service outlets are designed for normal loads in office and administration buildings. At increased load requirements, use metallic service outlets
- ✓ Apply the floor covering in the service outlet lid taking height adjustment and expansion joints into account







Frame cassettes and height adjustable cassettes

The compact, flush-floor cassettes from Ackermann made by OBO provide power, data and multimedia connections in a high-quality design. The height adjustable cassettes can be levelled to the height of the floor. They are available in round and rectangular versions. There are versions for dry, moist and wetcare floor coverings. Cassettes are suitable for raised and cavity floors and all kinds of screed-flush underfloor systems.



Stable and long-life

Frame cassettes are suitable for the top closure of an underfloor draw and junction box in dry, moist or wet-cleaned floors. They contain a 4 mm thick sheet steel plate, for safe absorption of the traffic loads.



Planning aids, cassettes - height-adjustable and decouplable



That's what we call variety.



Nominal size 4 with blanking lid
External dimension 199 x 199 mm
Two-compartment

Nominal size 4 for tube body
External dimension 199 x 199 mm
Two-compartment

Nominal size 4 with cord outlet
External dimension 199 x 199 mm
Two-compartment



Nominal size 9 with blanking lid
External dimension 243 x 243 mm
Three-compartment

Nominal size 9 for tube body
External dimension 243 x 243 mm
Three-compartment

Nominal size 9 with cord outlet
External dimension 243 x 243 mm
Three-compartment



Nominal size 250 with blanking lid
External dimension 288 x 288 mm
Three-compartment

Nominal size 250 with tube body
External dimension 288 x 288 mm
Three-compartment

Nominal size 250 with cord outlet
External dimension 288 x 288 mm
Three-compartment



Nominal size 350 with blanking lid
External dimension 388 x 388 mm
Three-compartment

Nominal size 350 with tube body
External dimension 388 x 388 mm
Three-compartment

Nominal size 350 with cord outlet
External dimension 388 x 388 mm
Three-compartment

Planning aids, cassettes - height-adjustable and decouplable



08 UFS Marktspezifischer Katalog 2016 Middle East / en / 2020/04/09 07:42:15 07:42:15 (LLExport_02472) / 2020/04/09 07:42:47



Nominal size R4 with blanking lid
External dimension \varnothing 214 mm
Two-compartment



Nominal size R4 for tube body
External dimension \varnothing 214 mm
Two-compartment



Nominal size R4 with cord outlet
External dimension \varnothing 214 mm
Two-compartment



Nominal size R7 with blanking lid
External dimension \varnothing 274 mm
Three-compartment



Nominal size R7 for tube body
External dimension \varnothing 274 mm
Three-compartment



Nominal size R7 with cord outlet
External dimension \varnothing 274 mm
Three-compartment



Nominal size R9 with blanking lid
External dimension \varnothing 304 mm
Three-compartment



Nominal size R9 for tube body
External dimension \varnothing 304 mm
Three-compartment



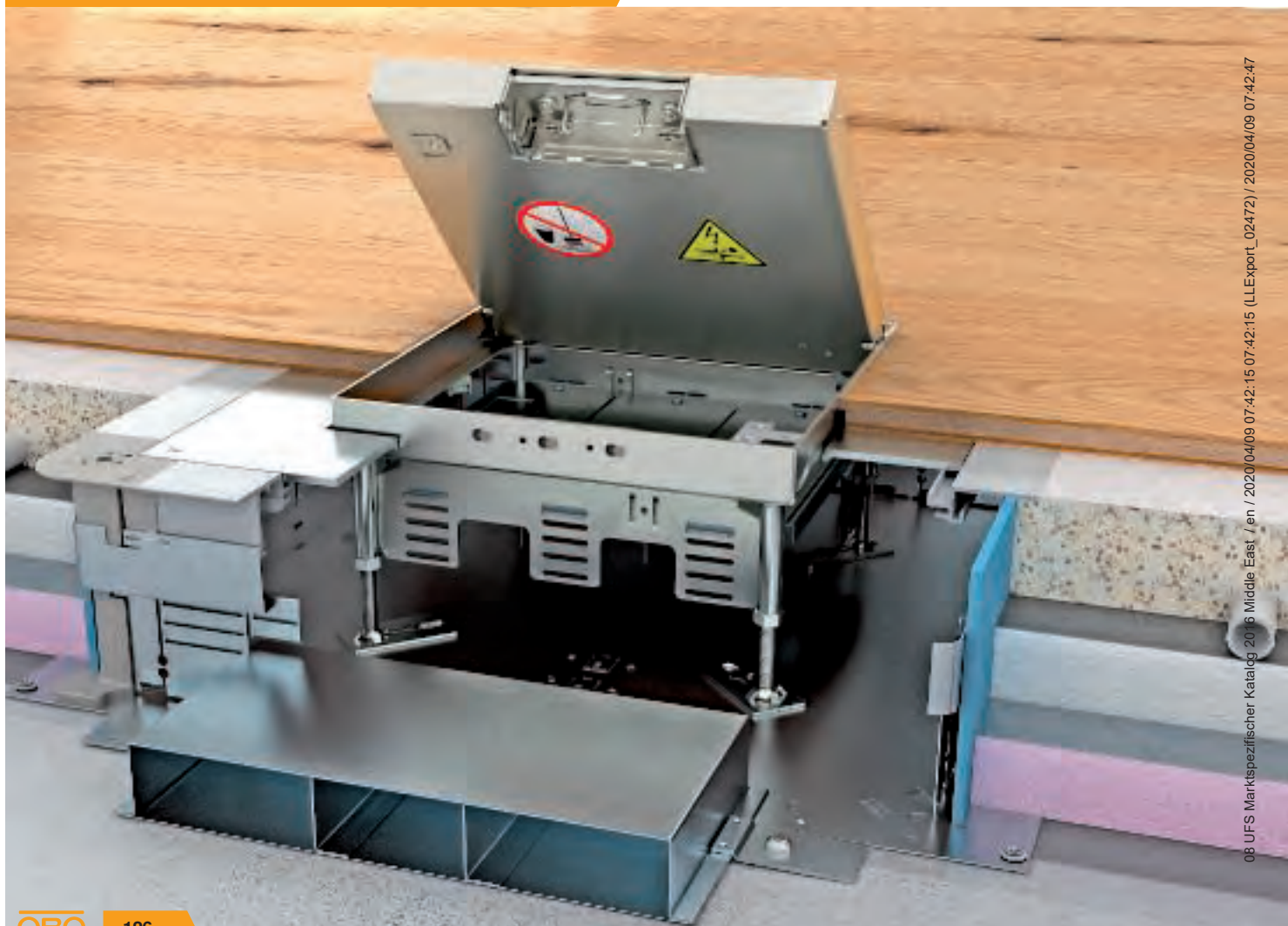
Nominal size R9 with cord outlet
External dimension \varnothing 304 mm
Three-compartment

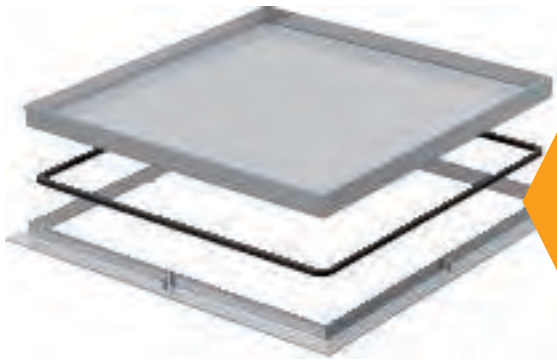


Cassette types

Height-adjustable cassettes

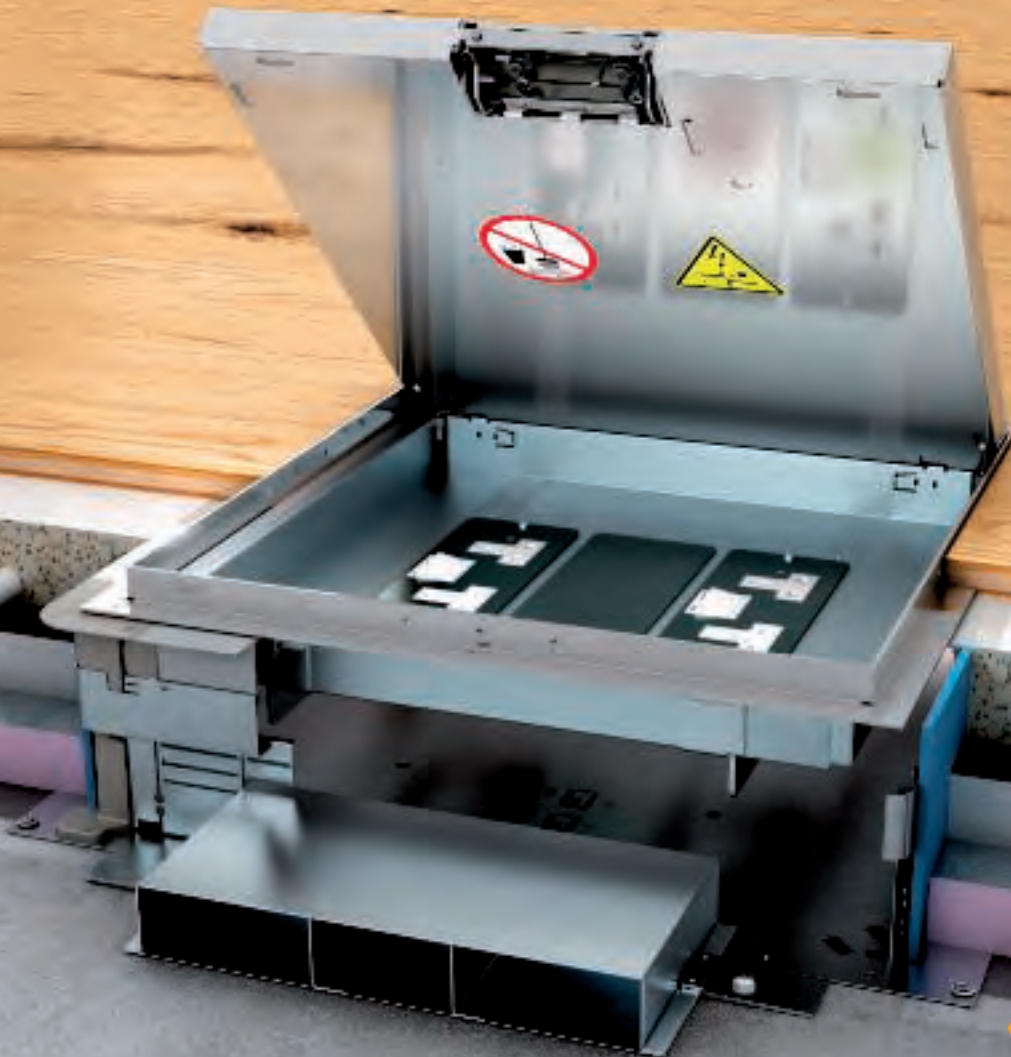
The height-adjustable cassettes can be adjusted exactly to the top edge of the floor covering. The cassettes can be installed inside underfloor duct systems in a screed box or in system floors, as shown below. They are fastened to the raw concrete using height-adjustment units.





Frame cassettes

They are fastened directly on an underfloor junction and branch box without the use of a blanking lid. The cassette frame is fastened to the box body using four fastening screws and forms an allround contact edge for the neighbouring floor covering. The cassette is laid in the junction and branch box and runs flush to the cassette frame. All the versions have a seal which acts either as knock protection or as moisture protection.



Cassettes with cord outlet

Cassettes with brass and stainless steel cord outlets are the ideal solution for dry and moist-cleaned floors, such as wooden planks or parquet.

Practical details

The integrated equipotential bonding guarantees the conductive connection between the cassette lid and frame.



Loads

The cassette frames are made from high-quality stainless steel or brass. An integrated, 4 mm-thick sheet steel plate also increases the load capacity of the cassettes. They are tested according to the standard EN 50085-2-2 in the highly modern testing systems of the company's own BET Test Centre.



Swivellable cord outlet

The models have a swivelling cord outlet which protects the cable exit in dry and moist-cleaned floors.



Highest quality, even when wet

The cassettes with tube body are suitable for wet-cleaned floors. The tube body opening also offers the option of passing through large-volume connector systems, such as CEE connectors.

Planning aids, cassettes - height-adjustable and decouplable

High-quality materials



The visible components of the tube cassettes are made of stainless steel. This means that the cassettes have a fine appearance and, at the same time, are resistant to cleaning agents.



Practical tube body

The tube body can be opened for cable routing with just a few actions and can just as easily be lowered to be flush with the floor. Three variants are available: With cover plate, with cover plate and handle clamp or with floor covering recess and handle clamp.



Wet care

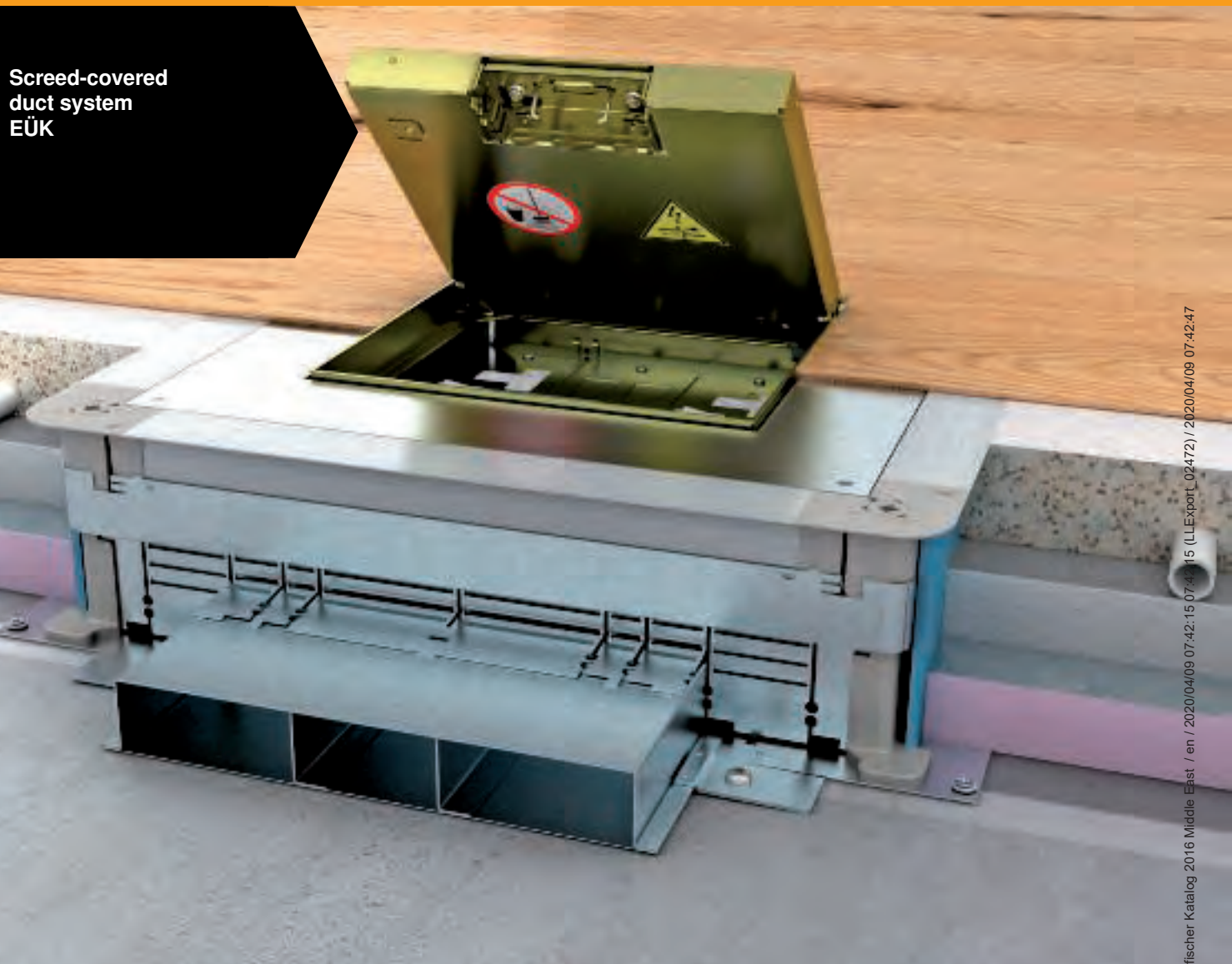
The tube body cassette possesses seals in the lid and in the tube body. If the service outlet is opened for cable installation, the 10 mm-high tube body ring protects the electrical installation against the ingress of water. The tube body cassettes thus fulfil the IP requirements for installation in wet-cleaned floors.



Compatible

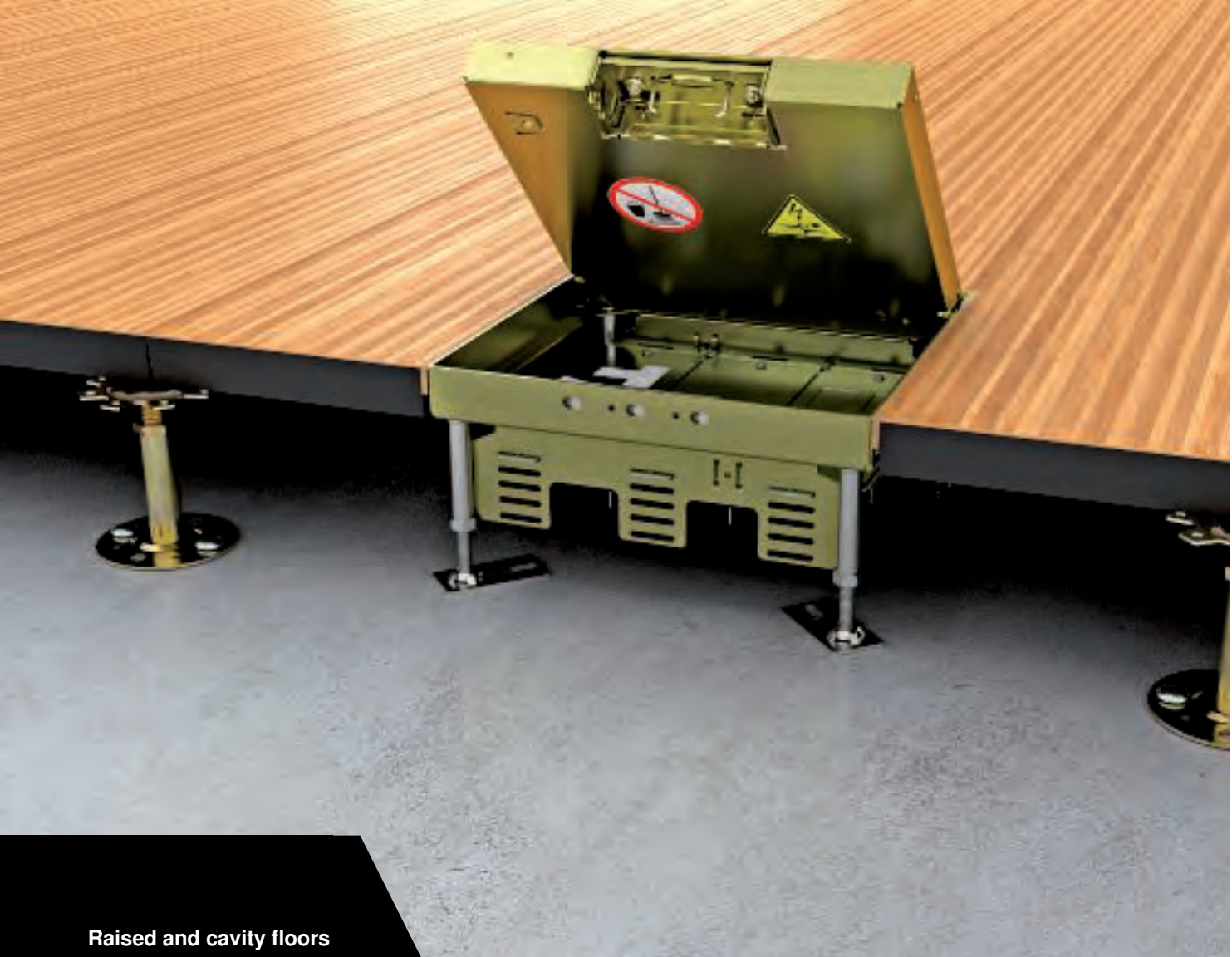
Cassettes from Ackermann made by OBO are suitable for installation in underfloor trunking systems, as well as in system floors. They are compatible with various underfloor systems, including the EÜK-SN screed-covered system and the open OKA-T screed-flush system.

Planning aids, cassettes - height-adjustable and decouplable



**Screed-covered
duct system
EÜK**

08 UFS Marktspezifischer Katalog 2016 Middle East / en / 2020/04/09 07:42:15 (LLExport_02472) / 2020/04/09 07:42:47



Raised and cavity floors

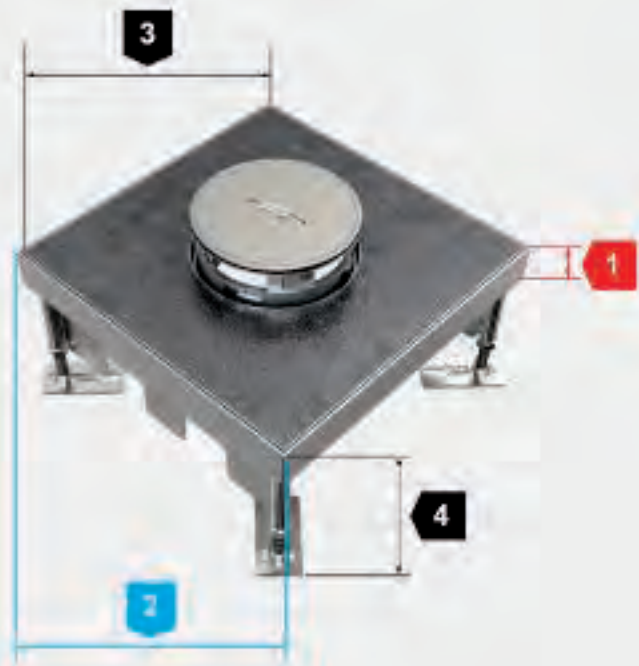
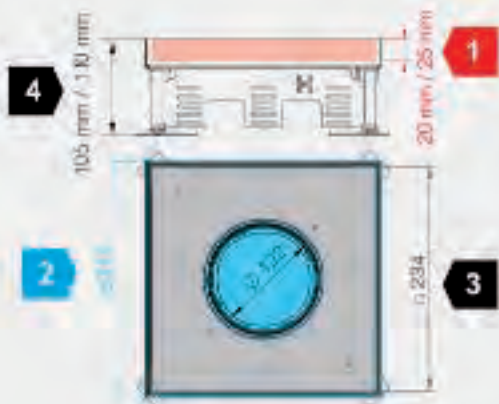


Planning aids, cassettes - height-adjustable and decouplable

Installation and floor cut-out dimensions

Planning aids, cassettes - height-adjustable and decouplable

Various installation and floor cut-out dimensions must be taken into account for the mounting of height-adjustable cassettes and the application of floor coverings in the cassette lids.



Frame height for the floor covering in the lid (red dimensions)

The frame height data relates to the maximum floor covering thickness, including adhesive. The cassettes are available in various frame heights.



Floor cut-out for the installation of cassettes (blue dimensions)

The dimensions for the floor cut-out should be considered as target dimensions for correct installation of the cassette in the floor. They are only generally required for the floor cut-out in system floors. The EÜK screed-covered duct system or the OKA open trunking system offer prefabricated mounting lids with matching installation openings.



Internal dimension of the lid to determine the floor covering cut-out (black dimensions)

The dimension data relates to the internal dimension of the cassette lid and is used to calculate the floor covering cut-out. Depending on the type of floor covering, appropriate reductions should be taken into account, e.g. for expansion gaps.

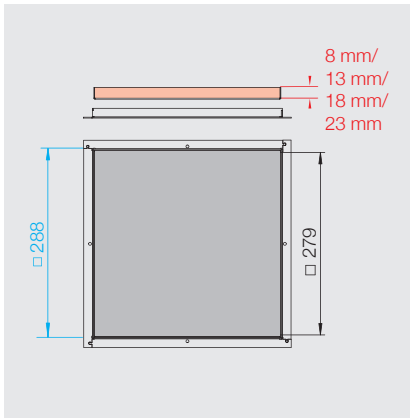


Minimum floor structure height (raw concrete ceiling to finished floor)

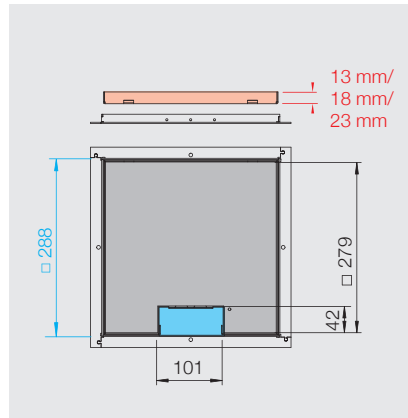
The dimension describes the minimum floor structure height from the raw concrete ceiling to the top edge of the finished floor. It guarantees correct installation and use of installation devices, such as sockets, data and multimedia connections.

System dimensions, frame cassettes

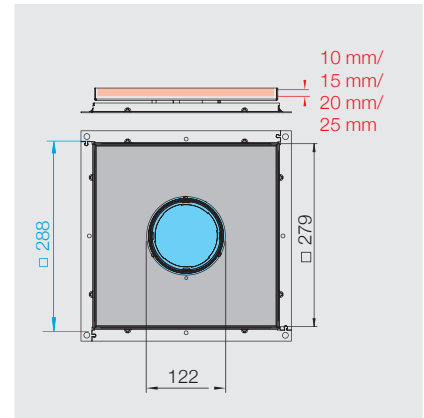
Planning aids, cassettes - height-adjustable and decouplable



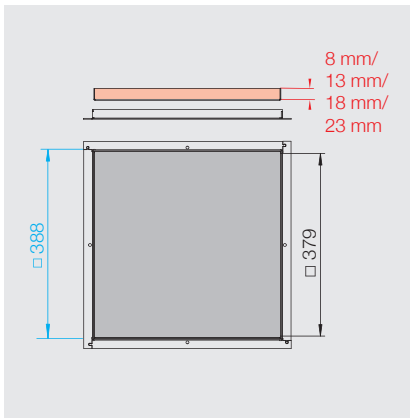
RK, blind, nominal size 250-3



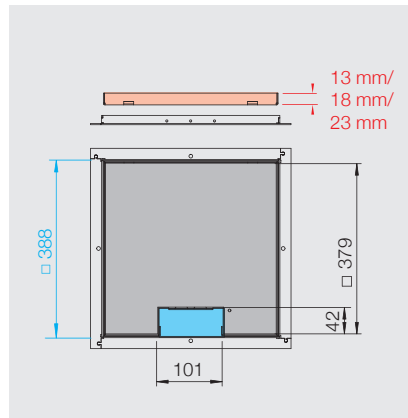
RKS, for cord outlet, nominal size 250-3



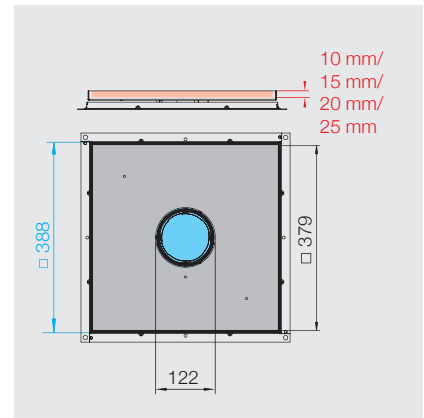
RKF 2, for tube body, nominal size 250-3



RK, blind, nominal size 350-3

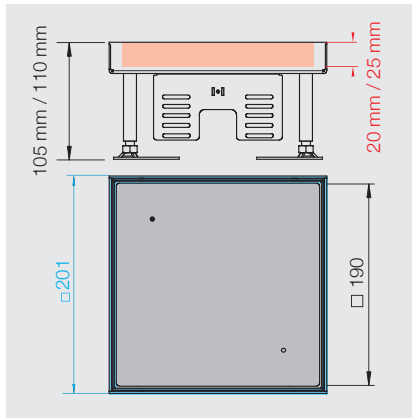


RKS, for cord outlet, nominal size 350-3

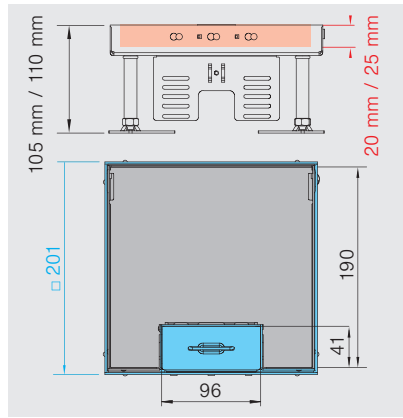


RKF 2, for tube body, nominal size 350-3

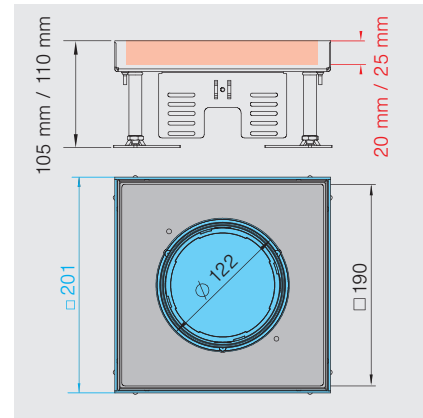
System dimensions, height-adjustable square cassettes



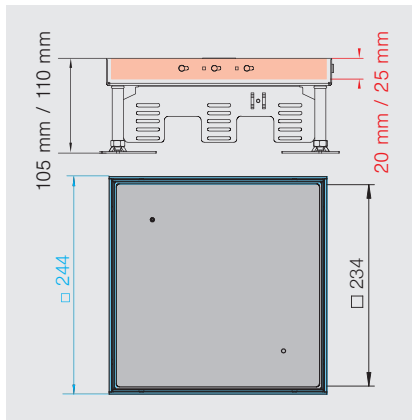
Nominal size 4, type RKN2



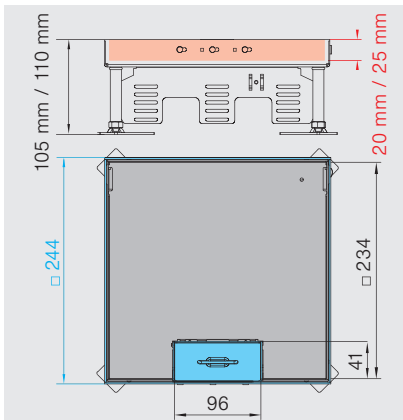
Nominal size 4, type RKSN2



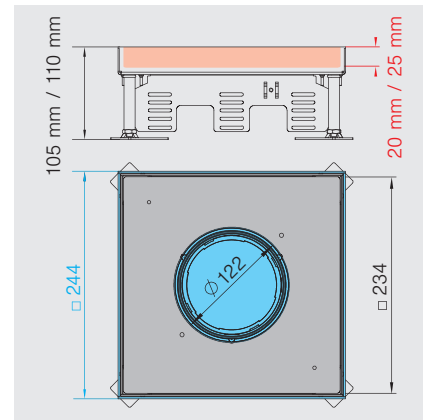
Nominal size 4, type RKFN 2



Nominal size 9, type RKN2



Nominal size 9, type RKSN2

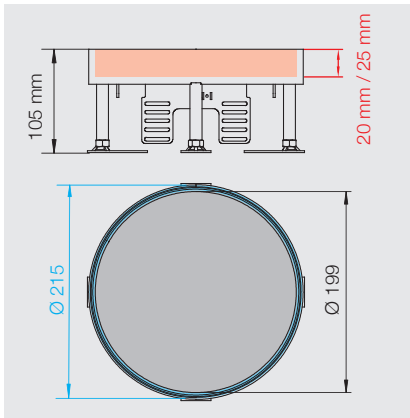


Nominal size 9, type RKFN 2

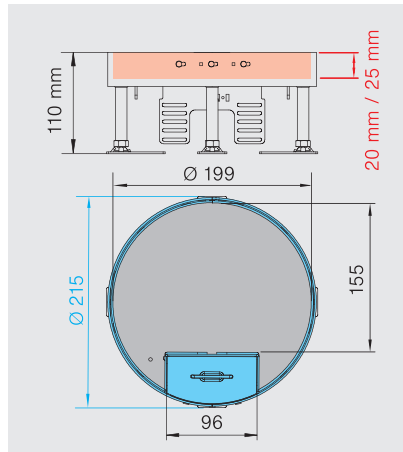


System dimensions, height-adjustable round cassettes

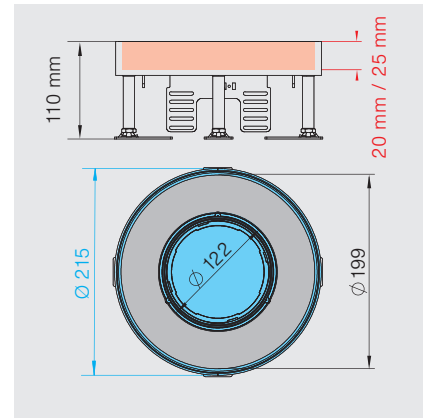
Planning aids, cassettes - height-adjustable and decouplable



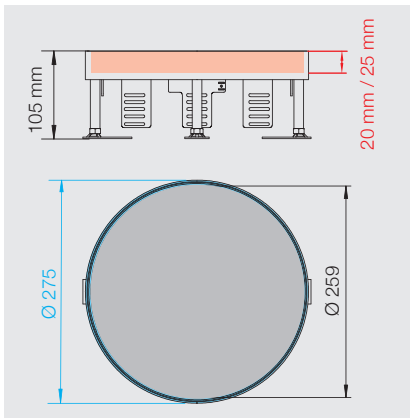
Nominal size R4, type RKR2 and RKR2N2



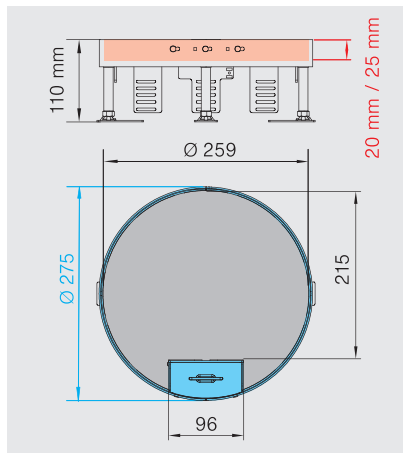
Nominal size R4, type RKS2 and RKS2N2



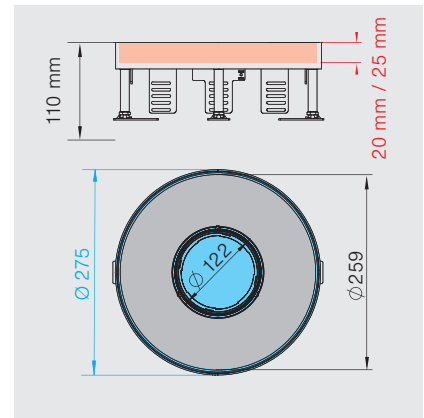
Nominal size R4, type RKFR2 and RKFR2N2



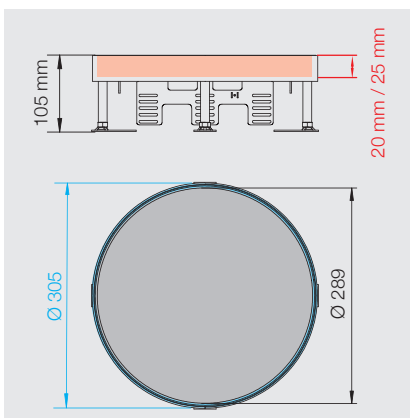
Nominal size R7, type RKR2 and RKR2N2



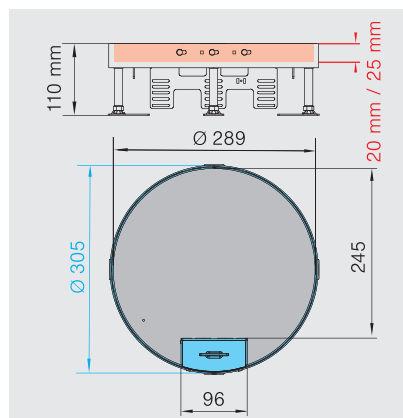
Nominal size R7, type RKS2 and RKS2N2



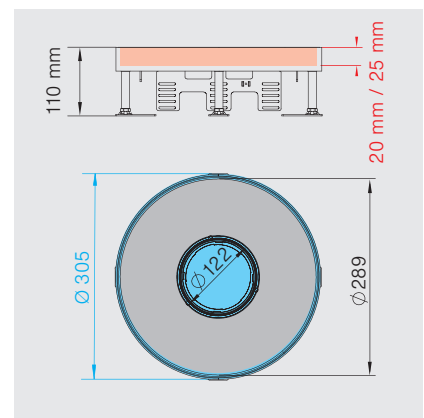
Nominal size R7, type RKFR2 and RKFR2N2



Nominal size R9, type RKR2 and RKR2N2



Nominal size R9, type RKS2 and RKS2N2

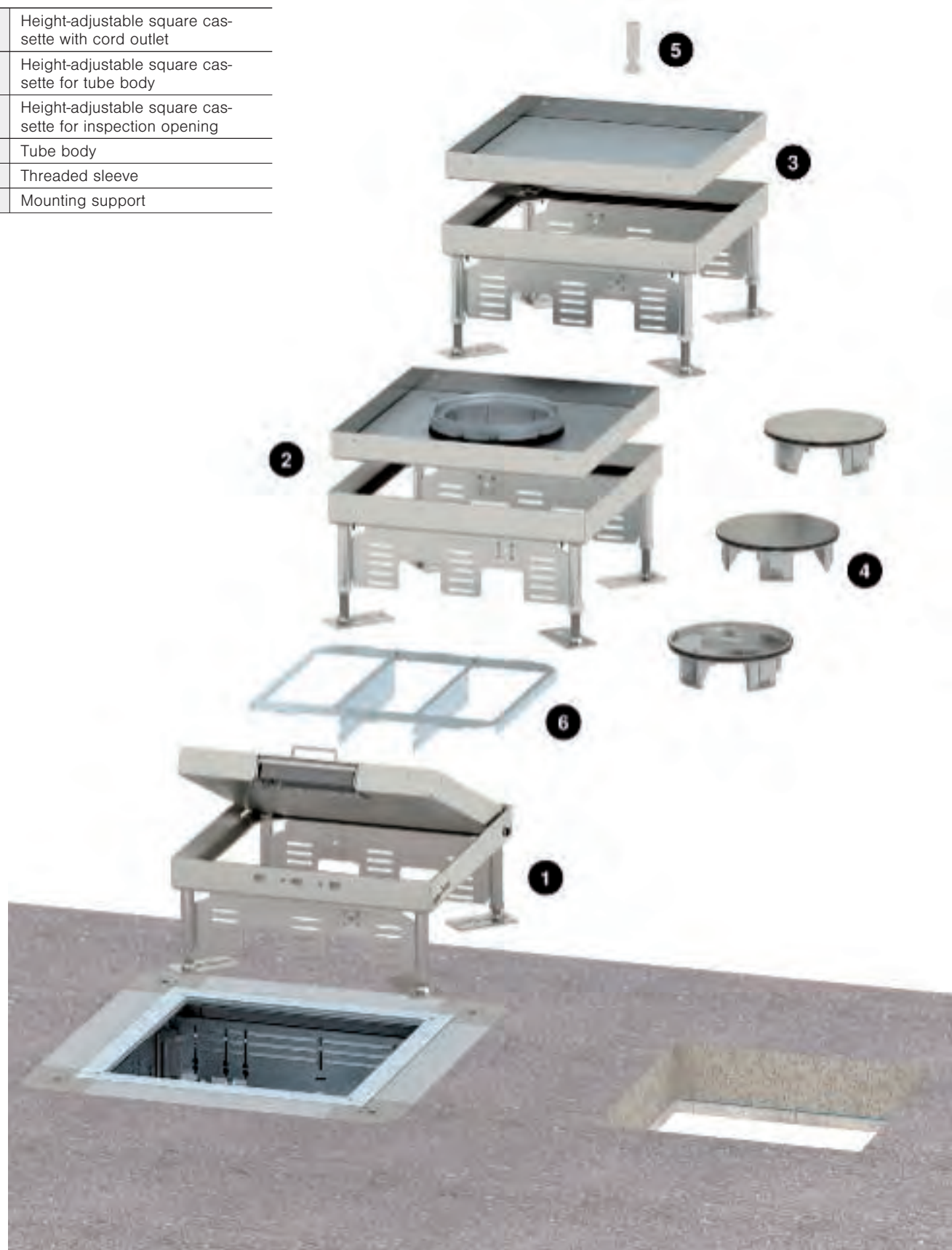


Nominal size R9, type RKFR2 and RKFR2N2

Installation principle, height-adjustable square cassette

System components

1	Height-adjustable square cassette with cord outlet
2	Height-adjustable square cassette for tube body
3	Height-adjustable square cassette for inspection opening
4	Tube body
5	Threaded sleeve
6	Mounting support

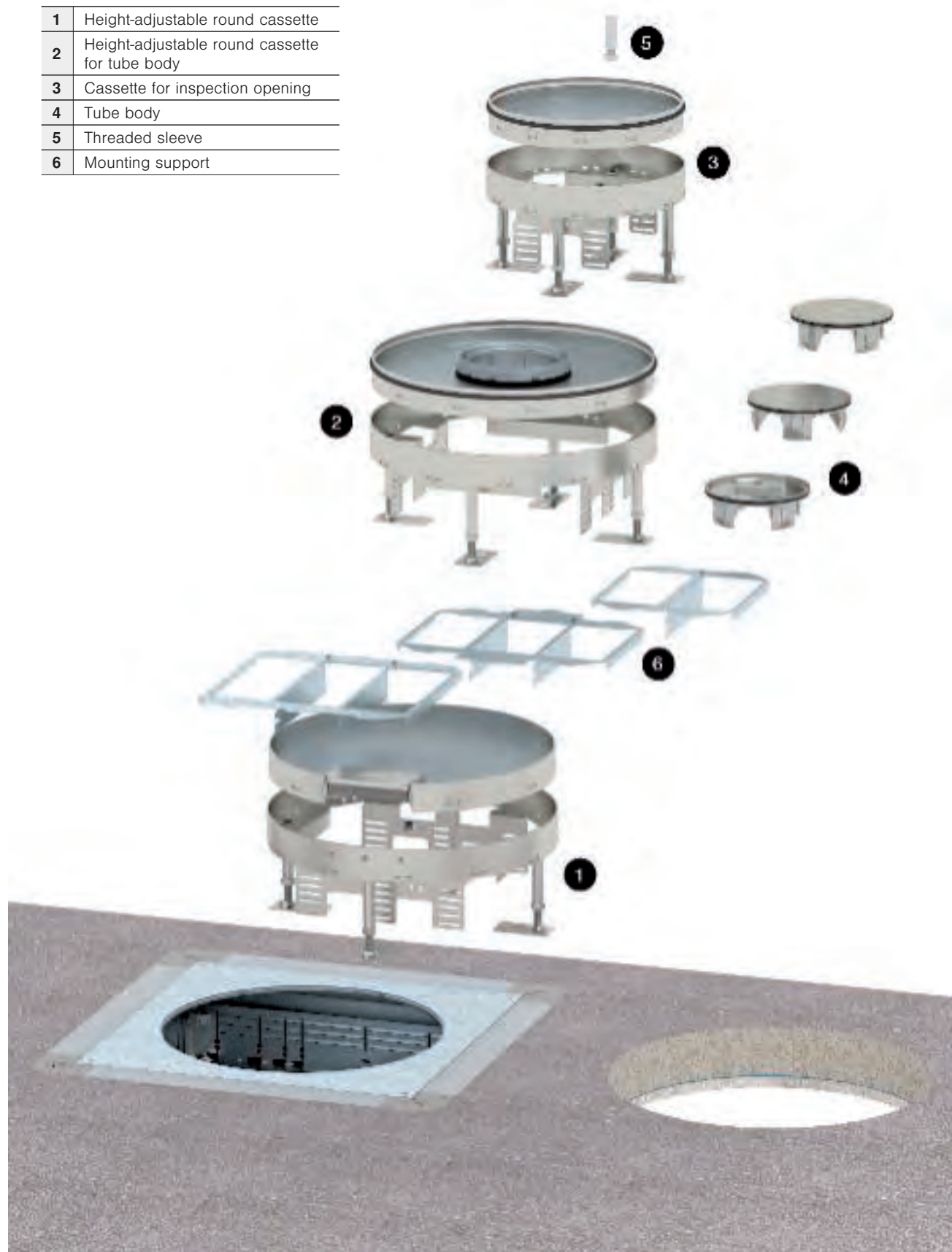


Planning aids, cassettes - height-adjustable and decouplable

Installation principle, height-adjustable round cassette

System components

1	Height-adjustable round cassette
2	Height-adjustable round cassette for tube body
3	Cassette for inspection opening
4	Tube body
5	Threaded sleeve
6	Mounting support



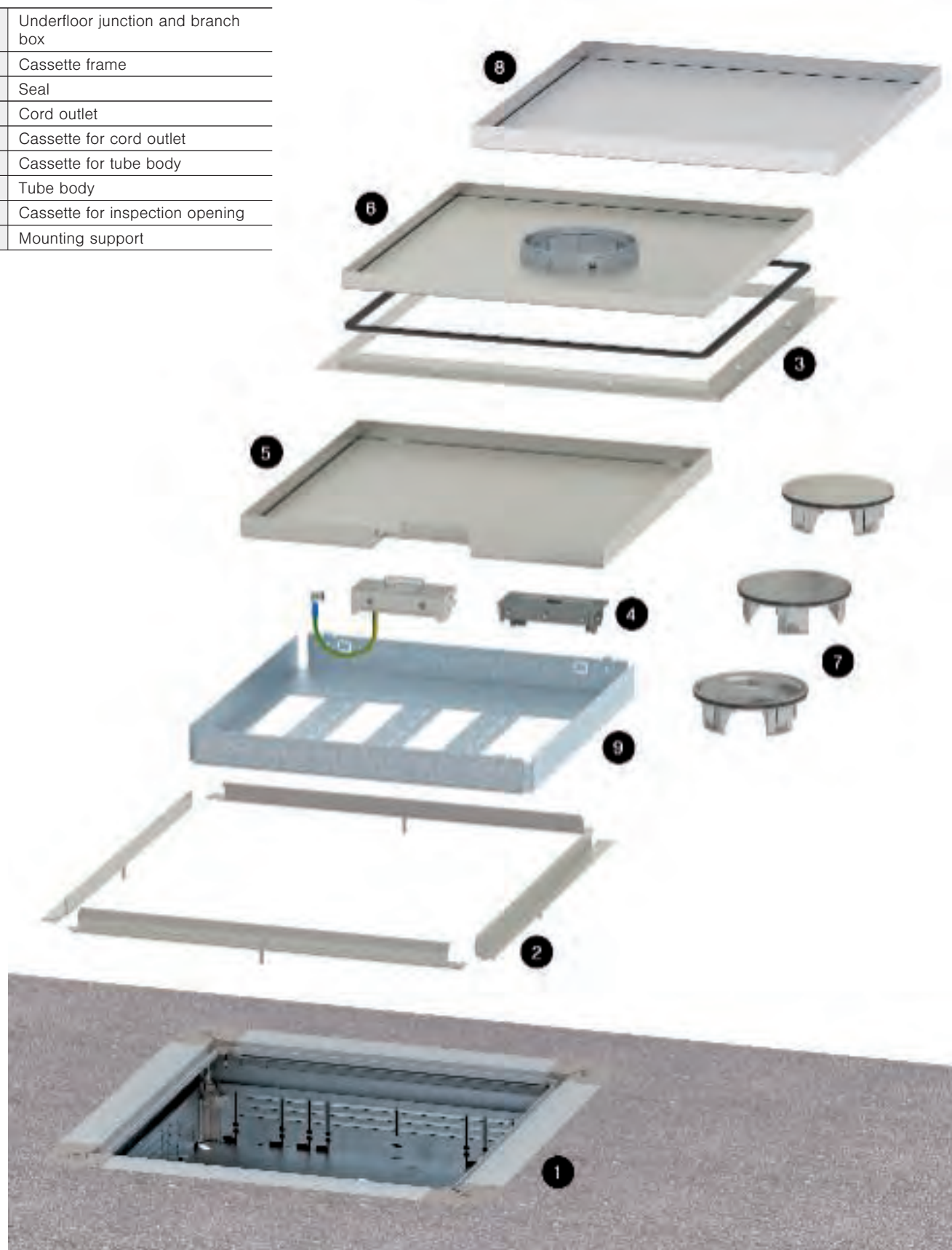
Planning aids, cassettes - height-adjustable and decouplable



Installation principle, frame cassette

System components

1	Underfloor junction and branch box
2	Cassette frame
3	Seal
4	Cord outlet
5	Cassette for cord outlet
6	Cassette for tube body
7	Tube body
8	Cassette for inspection opening
9	Mounting support



Planning aids, cassettes - height-adjustable and decouplable

System description of the tube body according to EN 50085-2-2

Planning aids, cassettes - height-adjustable and decouplable



The TUK2 tube body - the new dimension

The new TUK2 tube body allows the passing through of large-volume connector systems. It is suitable for high traffic loads and, depending on the version, covered with a floor covering.

Conforms with EN 50085-2-2

The new product standard EN 50085-2-2 places two primary re-

quirements on cable exits in wet-care floors: when used, moisture protection must be guaranteed to up to 10 mm above the floor and, when unused, the opening should be locked in such a way as to offer step protection. In both states, there must be sure protection against the ingress of water on the floor. The new tube body fulfils all the requirements of the standard regarding moisture protection.

Three tube body versions

For the use in wet-cleaned floors the following versions are available: with smooth surface and handle clamp, with smooth surface without handle clamp and with floor covering recess and a handle clamp.



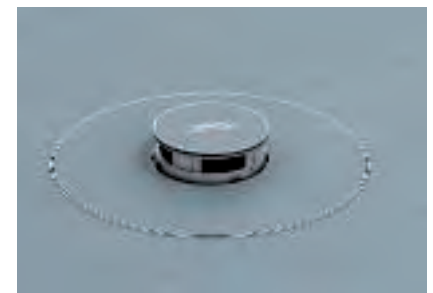
TUK2 GV with smooth surface and handle clamp.

The handle clamp is flush with the surface in the tube body and can be lifted without any aids.



TUK2 V with smooth surface without handle clamp

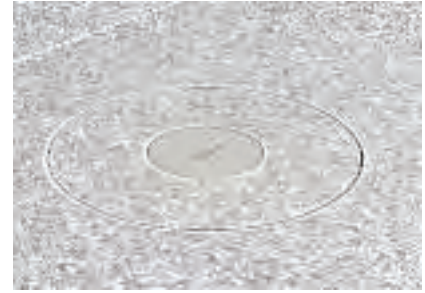
The upper end plate is made of brushed stainless steel and gives a fine appearance to the tube body. A suction lifter is required for opening.



TUK2 G4 with a floor covering recess and a handle clamp

The recess is 4 mm deep and is used to accept cut-resistant floor coverings.

System description of the tube body according to EN 50085-2-2



Basic tube body functions

The tube body is made entirely of die-cast zinc. Struts on the underside of the upper cover give it a high load capacity when not being used.

It can be operated with one hand. When unused, it is either lifted using the handle clamp or with the suction lifter. Turning it slightly to the left fixes the position. There are pressure areas on the four supports, which release the tube body cover from the tube body ring. When they have been actuated - actuation of two pressure areas is sufficient - the tube body can be lifted off. The cassette can be lifted out of the frame at the opening created. The entire opening is then available to pass through large-volume connectors, such as CEE connectors. When the cables have been connected to the accessories, the cassette is inserted again and the tube body cover engaged. The unused state is achieved again by lowering the tube body cover (by pressing the pressure surfaces), a slight turn to the right and flush-floor lowering.

Tube body seal

The tube body possesses two seals, which ensure moisture protection when used - lower seal - and when unused - upper seal. Both seals require regular care - cleaning and rubbing with a cleaning agent. The cleaning agent is, of course, contained in the scope of delivery of a cassette for tube bodies.



System description, height-adjustable square cassette

Planning aids, cassettes - height-adjustable and decouplable



Height-adjustable square cassettes are suitable for flushfloor device installation in raised and cavity floors and in all kinds of screed-flush installation systems. Depending on the design, they are suitable for dry, moist or wet-cleaned floors. The interior height adjustment allows exact adjustment of

the top edge of the cassette to the top edge of the surrounding floor covering. When mounted in a duct system, the system must have an appropriate installation opening. An underfloor box requires a blanking lid with an appropriate installation opening. The cassettes are made from stainless steel or

brass. All the cassettes contain a 4 mm thick sheet steel plate, for safe absorption of the traffic loads. The cassettes are available for different floor covering thicknesses of 20 and 25 mm.



Inspection opening version

The "blank" version RKN is suitable for the top closure of an inspection opening. A suction lifter or magnetic lifter is required for opening. Area of use: Dry, moist or wet-cleaned floor coverings.



Cord outlet version

The RKS version with cord outlet is intended for use in dry and damp-cared floors. The cassette is held in the frame by a hinge function and is always delivered with a metal cord outlet (stainless steel or brass).



Tube body version

The RKF version for tube bodies is intended for use in wet-cleaned floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

System description, height-adjustable round cassette



Height-adjustable round cassettes are suitable for flushfloor device installation in raised and cavity floors and in all kinds of screed-flush installation systems. Depending on the design, they are suitable for dry, moist or wet-cleaned floors. The interior height adjustment allows exact adjustment of

the top edge of the cassette to the top edge of the surrounding floor covering. When mounted in a duct system, the system must have an appropriate installation opening. An underfloor connection box requires a blanking lid with an appropriate installation opening. The cassettes are made from stainless

steel or brass. All the cassettes contain a 4 mm thick sheet steel plate, for safe absorption of the traffic loads. The cassettes are available for different floor covering thicknesses of 20 and 25 mm.

Planning aids, cassettes - height-adjustable and decouplable



Inspection opening version

The "blank" RKRN version is used as a top cover for inspection openings. A suction lifter or magnetic lifter is required for opening. Area of use: dry and wet-cleaned floor coverings.



Cord outlet version

The RKSR version with cord outlet is intended for use in dry and damp-cared floors. The cassette is always supplied with a metal (stainless steel or brass) cord outlet.



Tube body version

The RKFR version for tube bodies is intended for use in wet-cleaned floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

System description, frame cassette



Planning aids, cassettes - height-adjustable and decouplable



Frame cassettes are suitable for the top closure of an underfloor draw and junction box in dry, moist or wet-cleaned floors. They are fastened directly on an underfloor junction and branch box without the use of a blanking lid. The cassette frame is fastened to the box body using four fastening screws

and forms an all-round contact edge for the neighbouring floor covering. The cassette is laid in the junction and branch box and runs flush to the cassette frame. All the versions have a seal which acts either as knock protection or as moisture protection. The cassettes are made from stainless

steel or brass and thus match the colour of the floor coverings. The cassettes contain a 4 mm thick sheet steel plate, for safe absorption of the traffic loads. The cassettes are available for different floor covering thicknesses of 10, 15, 20 and 25 mm.



Inspection opening version

The "blank" version RK is suitable for the top closure of an inspection opening. A suction lifter or magnetic lifter is required for opening. Area of use: Dry, moist or wet-cleaned floor covering.



Cord outlet version

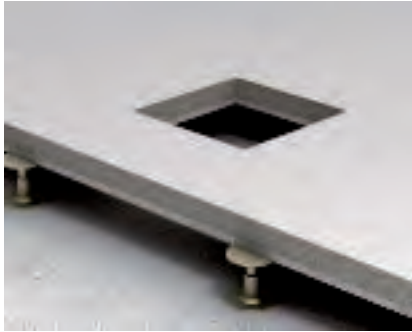
The "for cord outlet" version (RKS) is intended for use in dry and moist-cleaned floors. The cord outlet must be ordered separately.



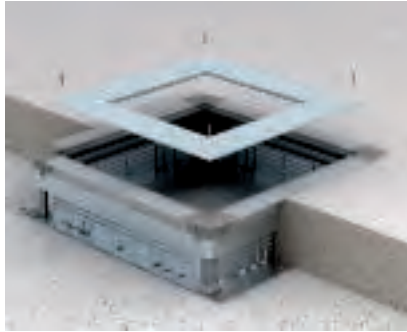
Tube body version

The "for tube body" version (RKF) is intended for use in wet-cleaned floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

Mounting aid, height-adjustable square cassette



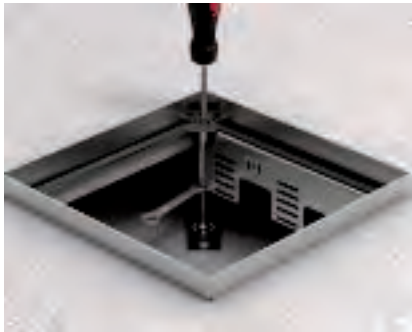
Preparation for mounting
The installation space for the cassette must be completed and clean.



Preparation of an underfloor system
Mounting the blanking lid on the underfloor box.



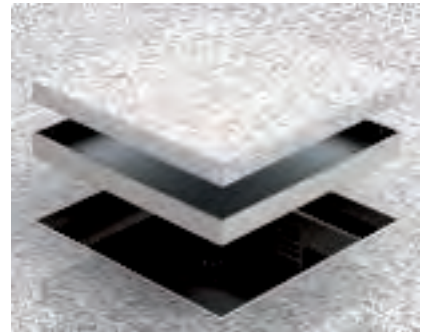
Mounting of cassette
Fasten the levelling units of the cassette on the raw ceiling.



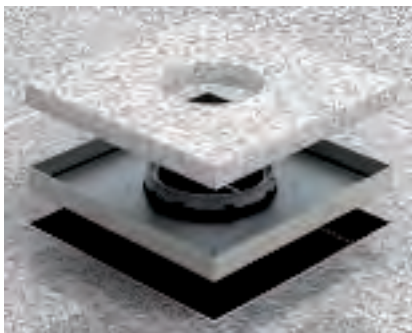
Adjustment of the cassette height
Adjust the cassette frame to the top edge of the floor covering. Secure the height adjustment of the height-adjustment screws with lock-nuts.



Laying the floor covering on the cassette frames
Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKN cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKFN cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Mounting of tube body
Insert the tube body cover into the tube body seat and lower it. Unlock the tube body by turning it to the right and close it flush to the floor.



Cleaning of the seals
To complete the mounting work, clean the interior of the cassette and the seals of the cassette and tube body. Apply Vaseline to the seals (contained in the scope of delivery).



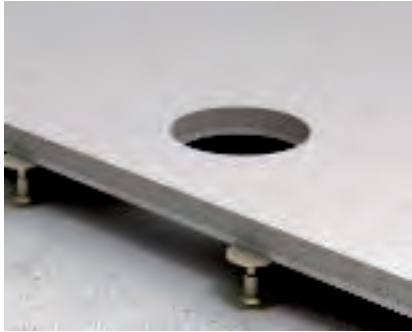
Installation mounting tray
Insert mounting tray in service outlet and fix it.



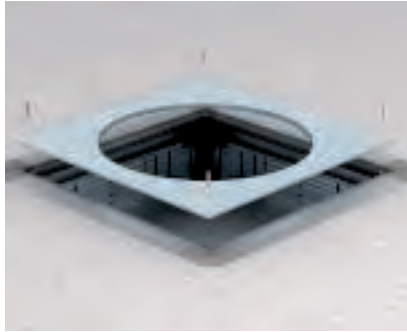
Device mounting
Connect device and fix it together with cover plate in mounting tray.

Planning aids, cassettes - height-adjustable and decouplable

Mounting aid, height-adjustable round cassette



Preparation for mounting
The installation space for the cassette must be completed and clean.



Preparation of an underfloor system
Mounting the blanking lid on the underfloor box.



Mounting of cassette
Fasten the levelling units of the cassette on the raw ceiling.



Adjustment of the cassette height
Adjust the cassette frame to the top edge of the floor covering. Secure the height adjustment of the height-adjustment screws with lock-nuts.



Laying the floor covering on the cassette frames
Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKR cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKFR cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Mounting of tube body
Insert the tube body cover into the tube body seat and lower it. Unlock the tube body by turning it to the right and close it flush to the floor.



Cleaning of the seals
To complete the mounting work, clean the interior of the cassette and the seals of the cassette and tube body. Apply Vaseline to the seals (contained in the scope of delivery).



Installation mounting tray
Insert mounting tray in service outlet and fix it.

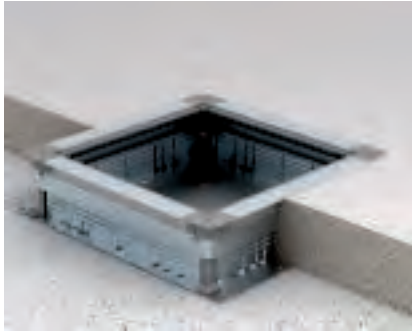


Device mounting
Connect device and fix it together with cover plate in mounting tray.

Planning aids, cassettes - height-adjustable and decouplable

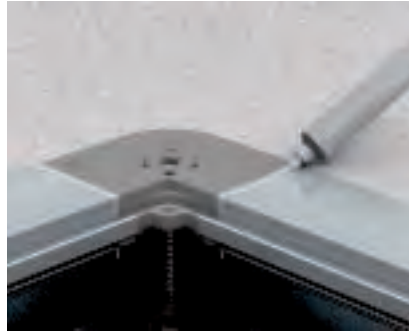


Mounting aid, frame cassettes



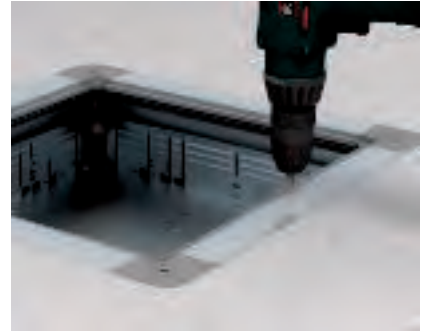
Preparation of an underfloor system

The frame cassette is mounted on the under-floor box.



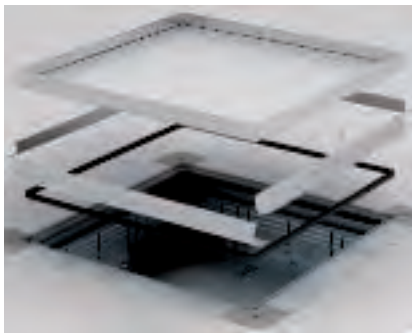
Sealing of the cassette frame with silicone (only RK and RKF)

Seal the frame of the underfloor box in the corners using silicone (silicone is included in the scope of delivery of the cassette).



Fasten the cassette frame to the underfloor box

Drill the fastening holes (Ø 3 mm) for the cassette frame at the marked points.



Mount the cassette frame to the underfloor box

Combine the cassette frame and mount it on the box body (fastening screws contained in the scope of supply).



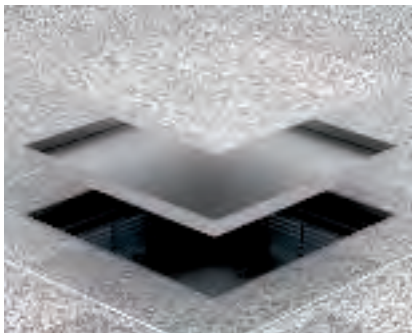
Laying the floor covering on the cassette frames RK/RKF

Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette frame with suitable materials.



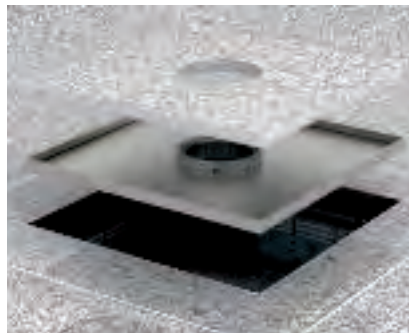
Laying the floor covering on the cassette frames RKS

Seal the remaining gap between the floor covering and the cassette frame with suitable materials (possibly with a cork strip).



Laying the floor covering in the RK cassette

Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKF cassette

Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Mounting of tube body

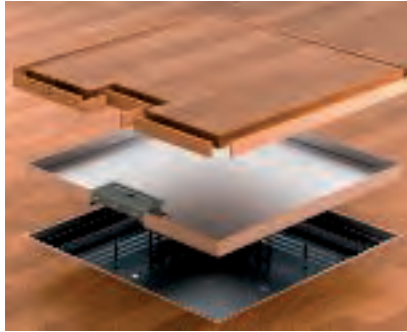
Insert the tube body cover into the tube body seat and lower it. Unlock the tube body by turning it to the right and close it flush to the floor.





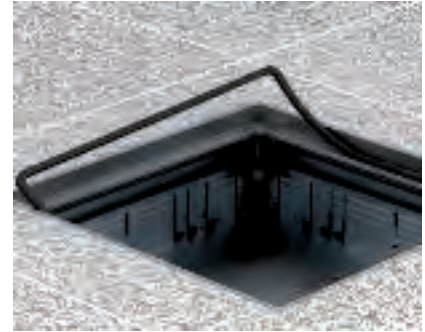
Mounting of cord outlet

Mount the cord outlet in the cassette. Mount the support piece in the cassette frame. Mount the cord outlet and support piece in such a way that the cord outlet ends flush with the floor covering.



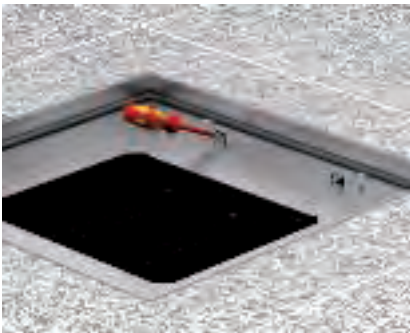
Laying the floor covering in the RKS cassette

Lay the floor covering in the cassette and stick it down. Fill the remaining gap between the floor covering and the tube body with suitable materials (e.g. cork strip).



Insertion of the seal

Before sticking in the sealing ring, clean the mounting area.



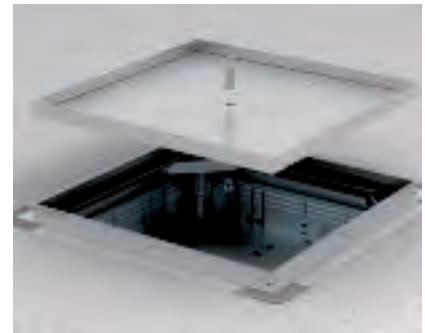
Device mounting beneath the cassette

Lay the mounting set in the underfloor box from above. Turn over the straps thus fastening the mounting set in the underfloor box.



Cleaning of the seals

To complete the mounting work, clean the interior of the cassette and the seals of the cassette and tube body. Apply Vaseline to the seals (contained in the scope of delivery).



Mounting of a threaded sleeve

This work step takes place before the floor covering is laid in the cassette. Drill a fastening hole for the threaded sleeve (Ø 8 mm). Insert the threaded sleeve and fasten it.



Mounting aid for expansion and additional parts for cassettes



Use of tube bodies

The tube body is intended for use in frame cassettes (RKF, RKFSL) and height-adjustable square and round cassettes. For installation solutions in wet-cleaned floors.



Lifting tools

Lifting tools are used to lift cassettes out of the cassette frame. Suction lifters can only be used on smooth floor coverings.



Mounting of polyamide cord outlet

Screw the cord outlet tight into the frame cassette (4 screws).



Mounting of polyamide cord outlet

Screw the support piece tight in the cassette frame.



Mounting of polyamide cord outlet

Adjust the cord outlet to the top edge of the floor covering. Adjust the height of the support piece so that the cord outlet is upon it when closed.



Mounting of metal cord outlet

Pre-mount the left screw in the cord outlet as an axis. Attach a toothed disc to the right screw and attach the protective conductor. Pre-mount the screw.



Mounting of metal cord outlet

Screw the cord outlet seat tight into the frame cassette (4 screws).



Mounting of metal cord outlet

Turn the axes (screw) in the cord outlet seat.



Mounting of metal cord outlet

Connect the protective conductor to the cassette.



Mounting of metal cord outlet

Fasten the support piece in the cassette frame.



Mounting of threaded sleeves

This work step takes place before the floor covering is laid in the cassette. Drill a fastening hole for the threaded sleeve (Ø 8 mm). Insert the threaded sleeve and fasten it.



Mounting of fitter in RKSN height-adjustable cassette

Fit the strap on the cassette and fasten the fitter.



Standard data

To DIN EN 50085-1 and DIN EN 50085-2-2

Class		Height-adjustable cassettes
6.2	According to impact resistance for installation and application	
6.2.4	Electrical installation duct systems for impact energy 5 J	5 J
6.3	According to temperatures, as specified in Tables 1, 2 and 3	
Table 1	Minimum storage and transport temperature ± 2 °C	-25 °C
Table 2	Minimum installation and application temperatures ± 2 °C	+5 °C
Table 3	Application temperatures ± 2 °C	+60 °C
6.4	According to the resistance against fire spread	
6.4.2	Electrical installation duct systems which do not permit the spread of fire	x
6.5	According to the electrical conductivity	
6.5.1	Electrical installation duct systems with electrical conductivity	x
6.6	According to the electrical insulation property	
6.6.2	Electrical installation duct systems without electrical insulation capability	x
6.7	According to the protection ratings offered by the housing or casing to EN 60529:1991	
6.7.1	According to protection against ingress of solid foreign bodies	x
6.7.2	According to protection against ingress of water	x
6.101	Depending on the type of floor care	
6.101.1	Electrical installation duct systems for dry floor cleaning	x ¹
6.101.2	Electrical installation duct systems for wet floor cleaning when the service outlet is not in use	x ²
6.101.3	Electrical installation duct systems for wet floor cleaning when the service outlet is in use	x ²
6.102	According to resistance to vertical loads affecting a small surface area	
6.102.7	Electrical installation duct systems for 3,000 N	x
6.103	According to resistance to vertical loads affecting a large surface area	
6.103.2	Electrical installation duct systems for 3,000 N	x

x¹: Applies to cas-settes with cord out-let, x²: Applies to cas-settes with tube body and blanking lid





Planning checklist

When selecting underfloor systems with cassettes, the following planning criteria, amongst others, should be taken into account:

- ✓ Take the type of floor covering into account. With wet-cleaned floors, insert a cassette with tube body
- ✓ Select the size of the cassettes according to the number of installation units
- ✓ Observe the minimum installation depth of the height-adjustable cassettes
- ✓ Height-adjustable cassettes are designed for normal loads in office and administrative buildings. With increased load requirements, use stainless steel heavy-duty cassettes
- ✓ Apply the floor covering in the cassette lid taking height adjustment and expansion joints into account





Heavy duty systems

Heavy-duty systems reliably supply areas with high load requirements with power, data and multimedia technology via the floor. Car dealerships, museums, airports, stations or hotels are typical areas of application. The construction and the material thickness is specially matched to the high load requirements. With the heavy-duty system, Ackermann made by OBO guarantees a particularly robust, safe and long-lasting installation solution.



Heavy-duty competence

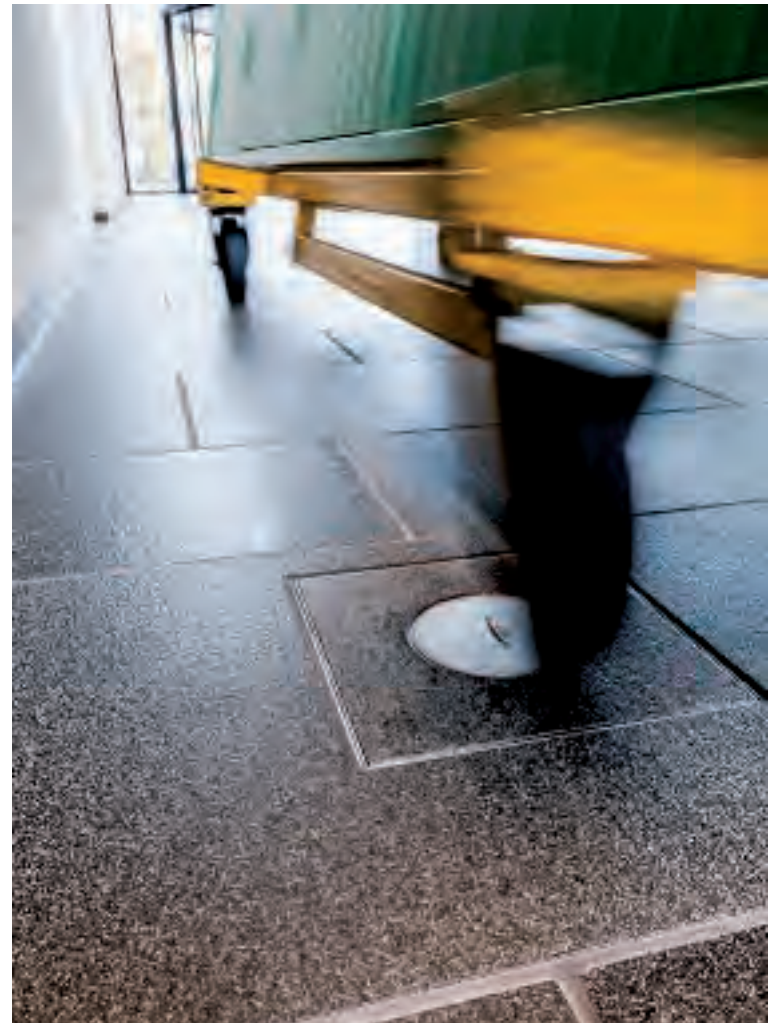
Ackermann made by OBO has developed the special heavy-duty solutions for underfloor installations in close consultation with planners and architects. Standard products, such as the EÜK screed-covered duct system or the height-adjustable cassettes, form the basis of the development.

An internal company testing standard ensures the highest quality and the highest load capacity: Its requirements go beyond the requirements of DIN EN 50085-2-2. The comprehensive heavy-duty system from Ackermann made by OBO is suitable for screed-covered installation in dry and wet-cleaned floors.



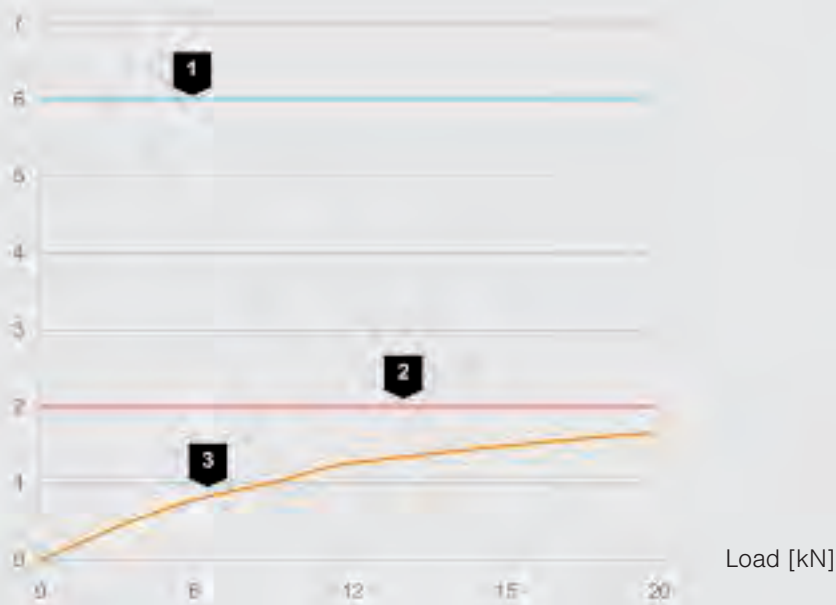
OBO testing standard

DIN EN 50085-2-2 specifies the load requirements for electrical installation systems. According to this standard, cassettes may only bend by a maximum of 6 mm when subjected to a load. However, with harder floor coverings, such as stone or tiles, bending of 6 mm will lead to breakage. For this reason, OBO has increased its internal quality criteria and goes a step further with the OBO testing standard: The maximum bend for heavy-duty systems was reduced from 6 mm to 2 mm. The tests according to the OBO testing standard take place in the company's own BET Test Centre.



Heavy load testing

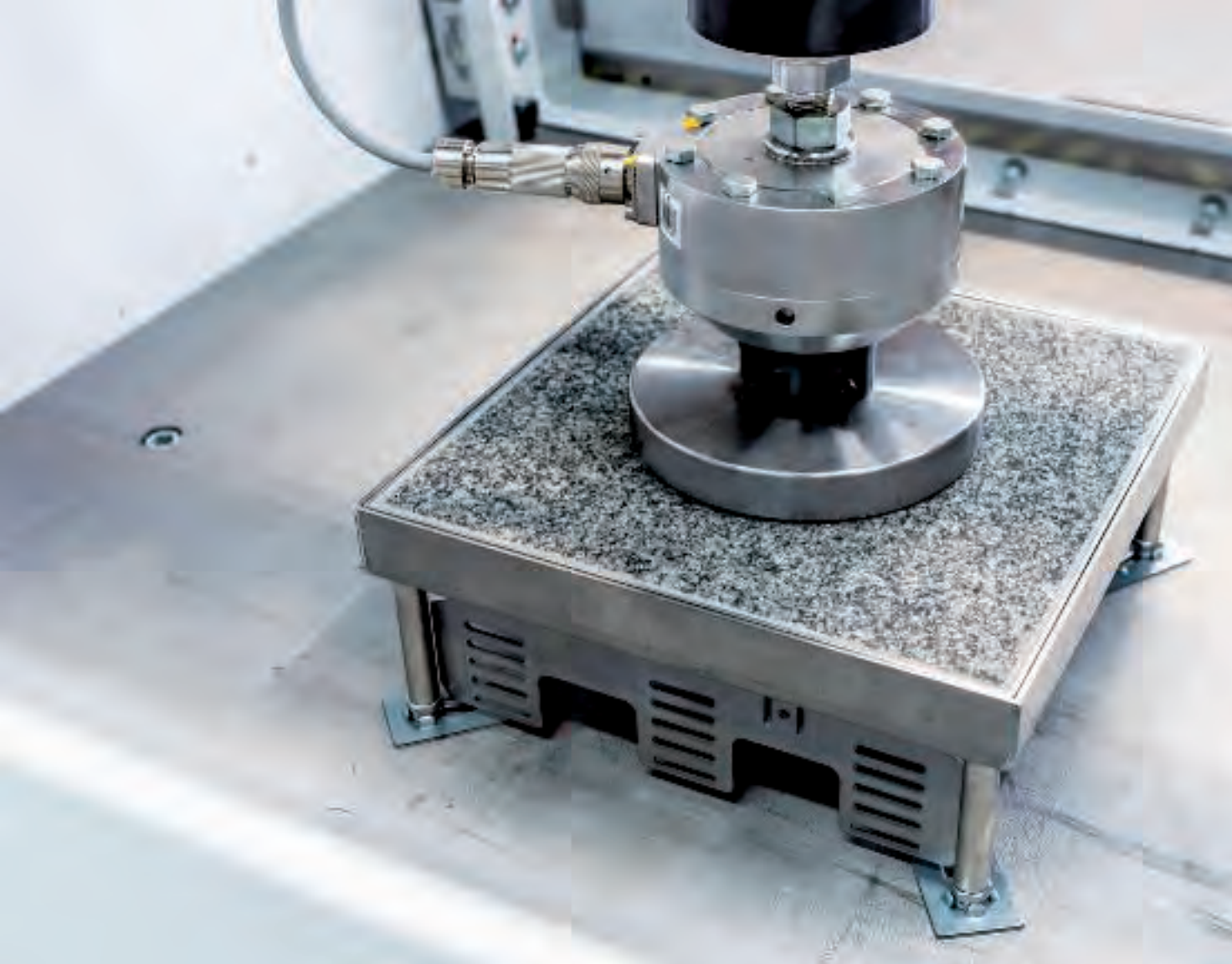
Bend [mm]



Tested heavy-duty system components:

- Underfloor junction and branch box of size 350-3
- Heavy-duty support, heavy-duty mounting lid
- Floor covering, tile, 20 mm
- Cassette RKF2 SL2 V3 35

1	Bend to DIN EN 50085-2-2: 6 mm
2	Bend to OBO testing standard: 2 mm
3	Measured bend, OBO heavy-duty system



OBO heavy-duty classes

Classification

DIN EN 50085-2-2 divides the load capacities of electrical installation duct systems into two classes. The classifications rate the articles according to resistance to vertical loads that act over a small (6.102) or large (6.103) surface area. The 6.103 classification and the test results from the BET Test Centre served as a basis for the development of the internal OBO classification into heavy-duty classes SL1 and SL2. Products of heavy-duty class SL1 are suitable for loads of up to 10 kN, whilst products of heavy-duty class SL2 are even suitable for loads of up to 20 kN. The maximum bending for both heavy-duty classes is 2 mm.

Class 6.103 according to DIN EN 50085-2-2

Classification*	Load in N
6.103.1	2,000
6.103.2	3,000
6.103.3	5,000
6.103.4	10,000
6.103.5	15,000

* The OBO heavy-duty classes were developed based on Class 6.103.

Classification according to the OBO testing standard

OBO heavy load class	Load in N
SL 1	10,000
SL 2	20,000

The screed-covered solution

The screed-covered heavy-duty solution consists of six system components: The underfloor ducts, underfloor sockets, heavy-duty supports, heavy-duty mounting lids, height-adjustment units and heavy-duty cassettes. The 2 or 3-compartment underfloor ducts are used for cable routing and can easily be connected to the prepared installation openings of the underfloor sockets. The underfloor sockets permit the installation of heavy-duty cassettes for inspection purposes or for the mounting of installation accessories such as sockets, data or multimedia technology. The heavy-duty supports and the special heavy-duty mounting lid provide the necessary stability. The heavy-duty cassettes are inserted in the heavy-duty mounting lid, allowing access to the installed installation devices.

Underfloor junction and branch box

The underfloor sockets of the nominal sizes 250 and 350 must have a non-positive connection to the screed. To avoid a reduction in the load capacity and damage to the floor covering, no edge insulation strips can be laid around the underfloor junction and branch box.



Heavy-duty cassettes

Heavy-duty cassettes are suitable for creating inspection openings or for the installation of devices in areas with high load requirements. The cassettes are adequately dimensioned for absorbing traffic loads and are rated for individual static loads up to 10 kN (SL1) or 20 kN (SL2). The GRAF9 service outlet is available for smaller loads up to 7.5 kN.



Heavy-duty mounting lid

The heavy-duty mounting lid is selected according to the appropriate heavy-duty cassette. The height-adjustment units enable the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.



Heavy-duty supports

Heavy-duty supports are additional expansion parts for underfloor sockets and increase the load capacity. The supports are inserted in the corner areas of the underfloor box and are tensioned under the socket frame.



Ducts

The screed-covered ducts are only subjected to loads during the mounting period. Before screed laying, the ducts are classified with a load capacity of 750 N according to DIN EN 50085-2-2. After screed laying, no loads impact on the ducts, as the screed accepts the loads as a static layer. For this reason, underfloor ducts from the standard product range can also be used in areas with high load requirements. 2 and 3-compartment underfloor ducts from the EÜK screed-covered duct system are available.



Overview of heavy-duty systems

Device installation units

Selection according to

- Load requirement
- Floor covering thickness
- Functional method
- Installation capacity

Cassettes for cable outlets and inspection purposes protect the electrical installation in the floor against water penetration. All heavy-duty solutions guarantee moisture protection according to DIN EN 50085-2-2 and are therefore approved for wet-cleaned floors indoors.

Heavy-duty mounting lid

Selection according to

- The shape of the selected service outlet or the cassette (nominal size)
- Screed height

With heavy-duty frame cassettes, a mounting set, not a mounting lid, must be used for the installation of installation devices.

Height-adjustment units

Selection according to

- Screed height

Heavy-duty supports for underfloor socket

Selection according to

- Screed height

Underfloor socket (UZD)

Selection according to

- Screed height
- Shape of the cassette and the heavy-duty mounting lid
- Duct width

Ducts

Selection according to

- Cable volume

Load capacity

7.5 kN



Service outlet



Heavy-duty mounting lid



Height-adjustment units



Heavy-duty support



Underfloor socket, nominal size 350





Square heavy-duty cassettes



Round heavy-duty cassettes



Heavy-duty frame cassettes



Heavy-duty mounting lid



Heavy-duty mounting lid



Mounting set



Height-adjustment units



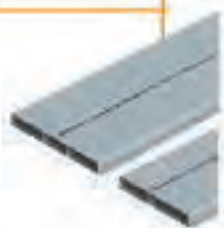
Height-adjustment units



Heavy-duty support



Underfloor socket, nominal size 250 and 350



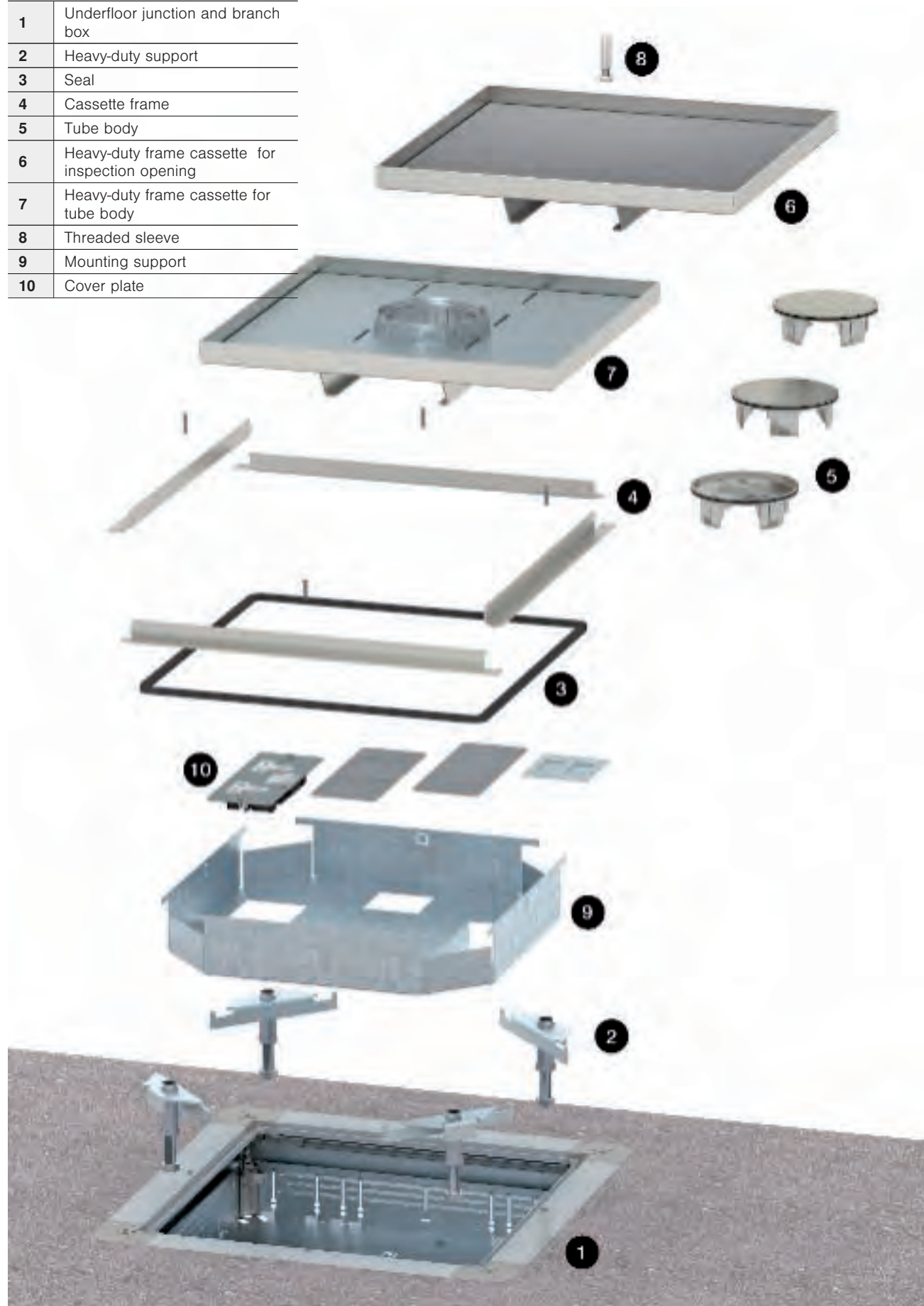
Trunking in various widths, 2-compartment and 3-compartment



Installation principle, heavy-duty frame cassette

System components

1	Underfloor junction and branch box
2	Heavy-duty support
3	Seal
4	Cassette frame
5	Tube body
6	Heavy-duty frame cassette for inspection opening
7	Heavy-duty frame cassette for tube body
8	Threaded sleeve
9	Mounting support
10	Cover plate



Installation principle, height-adjustable round heavy-duty cassette

System components

1	Heavy-duty support
2	Heavy-duty blanking lid
3	Height-adjustable round cassette for tube body
4	Tube body
5	Height-adjustable round heavy-duty cassette for inspection opening
6	Threaded sleeve



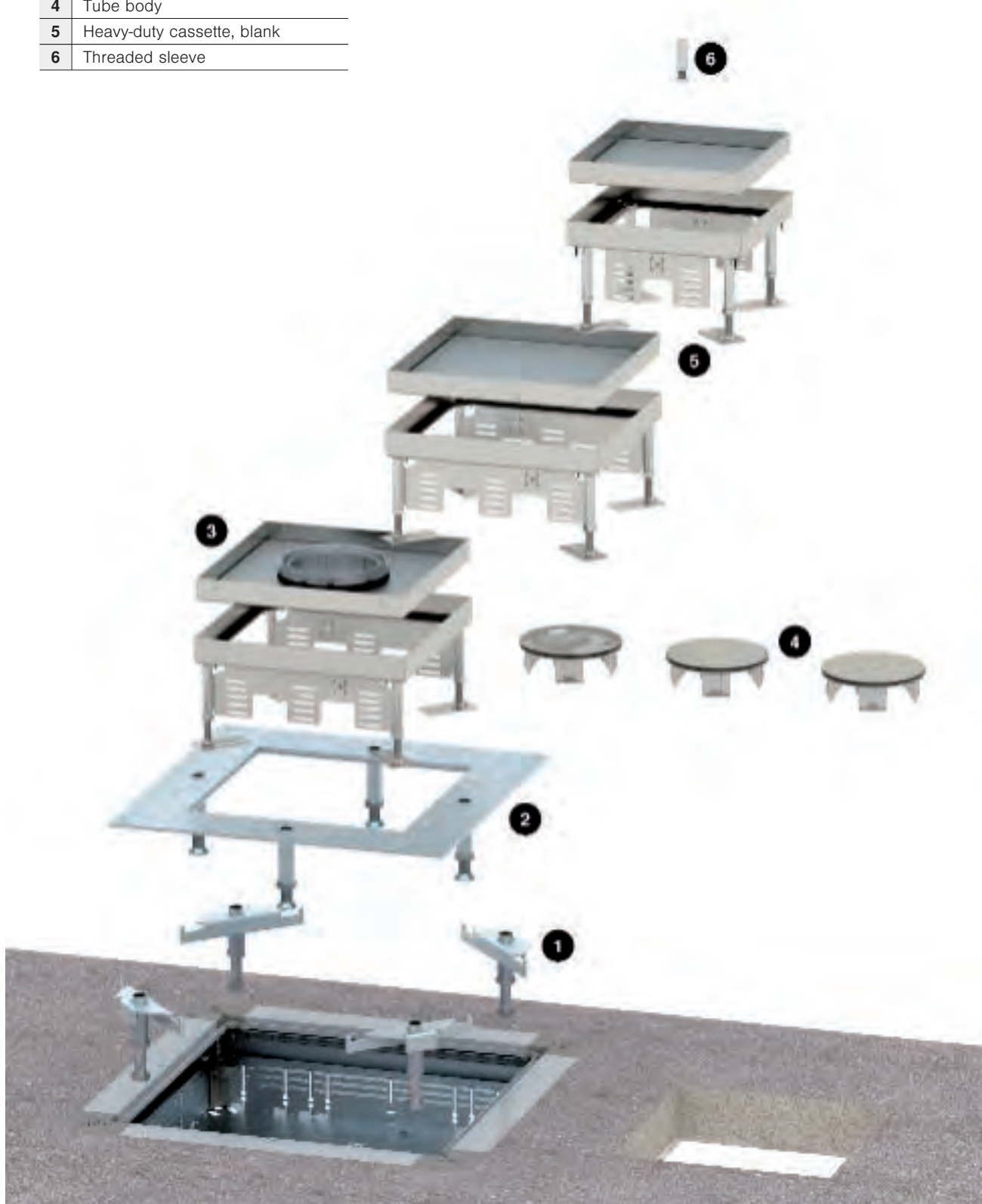
Planning aids, heavy-duty systems



Installation principle, height-adjustable square heavy-duty cassette

System components

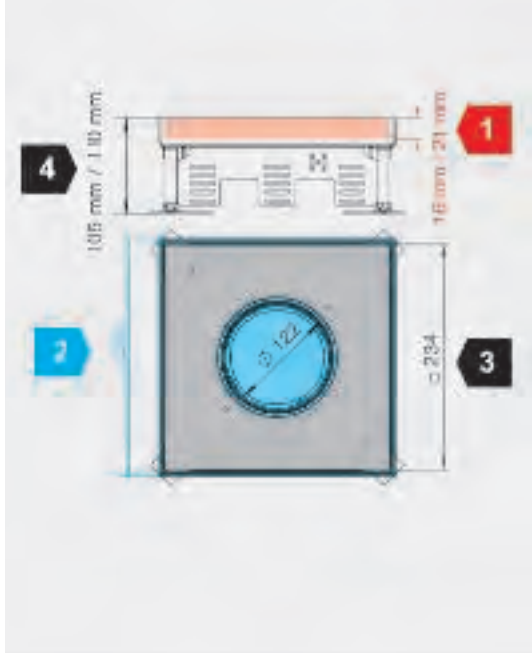
1	Heavy-duty support
2	Heavy-duty blanking lid
3	Heavy-duty cassette for tube body
4	Tube body
5	Heavy-duty cassette, blank
6	Threaded sleeve



Installation and floor cut-out dimensions

Various installation and floor cut-out dimensions must be taken into account for the mounting of height-adjustable cassettes and the application of floor coverings in the cassette lids.





Frame height for the floor covering in the lid (red dimensions)

The frame height data relates to the maximum floor covering thickness, including adhesive. The cassettes are available in various frame heights.



Floor cut-out for the installation of cassettes (blue dimensions)

The dimensions for the floor cut-out should be considered as target dimensions for correct installation of the cassette in the floor. They are only generally required for the floor cut-out in system floors. The EÜK screed-covered duct system or the OKA open trunking system offer prefabricated mounting lids with matching installation openings.



Internal dimension of the lid to determine the floor covering cut-out (black dimensions)

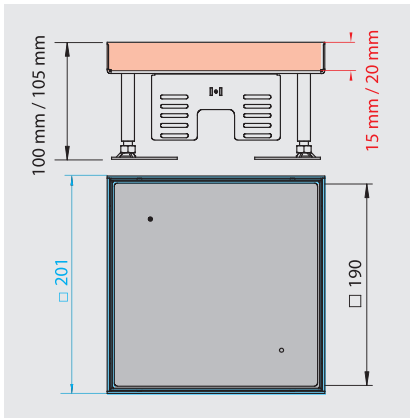
The dimension data relates to the internal dimension of the cassette lid and is used to calculate the floor covering cut-out. Depending on the type of floor covering, appropriate reductions should be taken into account, e.g. for expansion gaps.



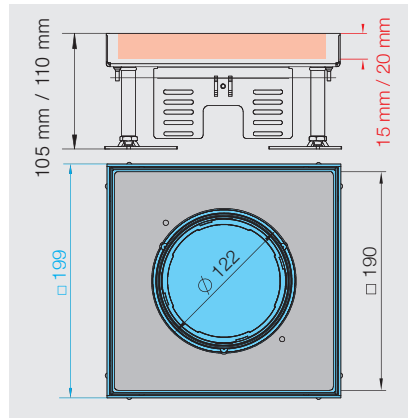
Minimum floor structure height (raw concrete ceiling to finished floor)

The dimension describes the minimum floor structure height from the raw concrete ceiling to the top edge of the finished floor. It guarantees correct installation and use of installation devices, such as sockets, data and multimedia connections.

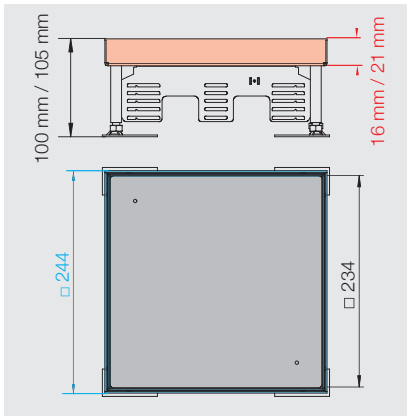
System dimensions, height-adjustable square cassettes



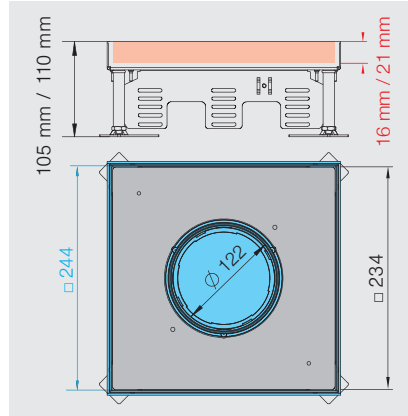
Nominal size 4, type RKN2 4



Nominal size 4, type RKFN 2 4



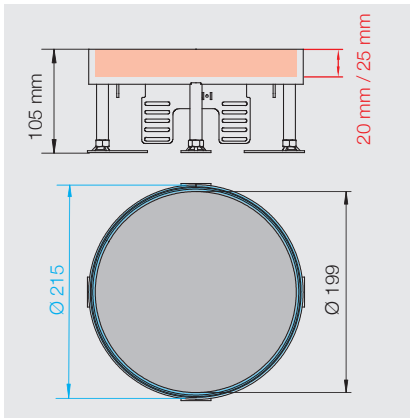
Nominal size 9, type RKN2 9



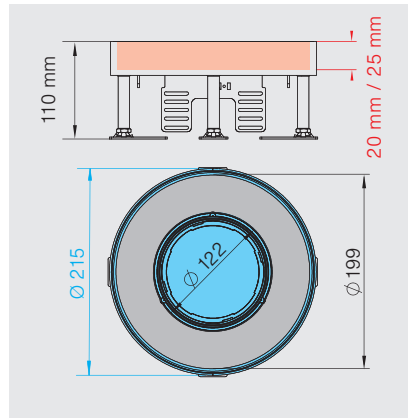
Nominal size 9, type RKFN 2 9



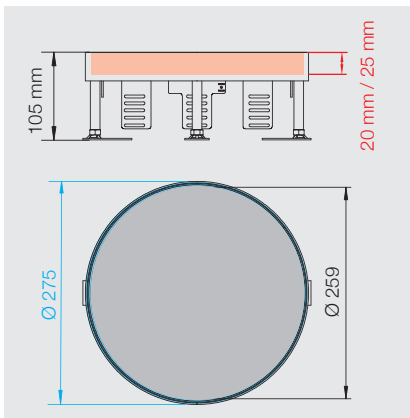
System dimensions, height-adjustable round cassettes



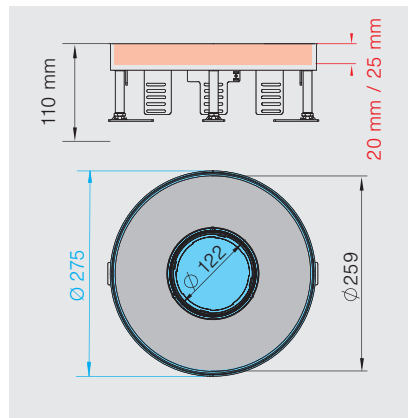
Nominal size R4, type RKR2 and RKR2N



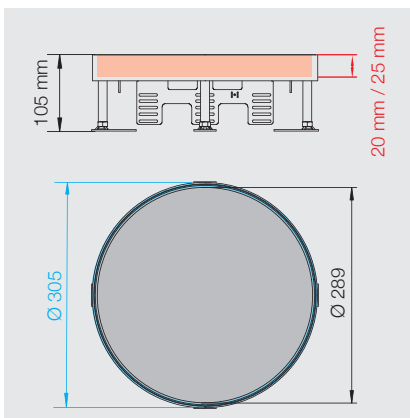
Nominal size R4, type RKFR2 and RKFR2N



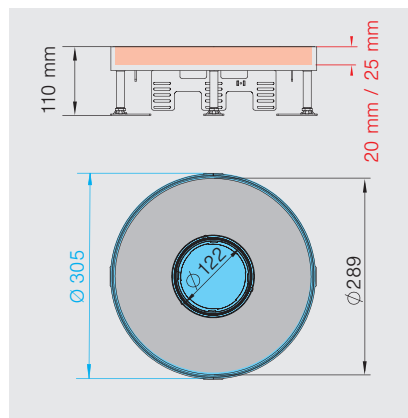
Nominal size R7, type RKR2 and RKR2N



Nominal size R7, type RKFR2 and RKFR2N



Nominal size R9, type RKR2 and RKR2N

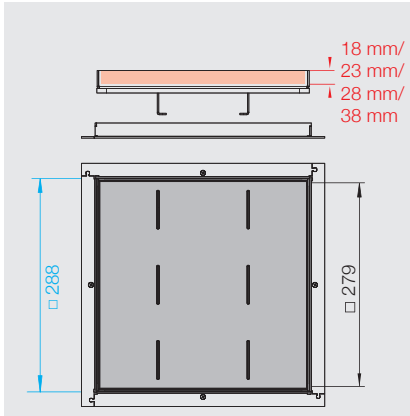


Nominal size R9, type RKFR2 and RKFR2N

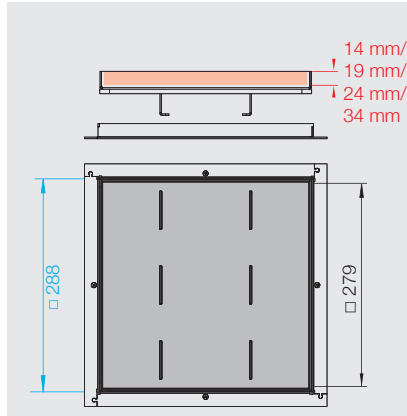
Planning aids, heavy-duty systems



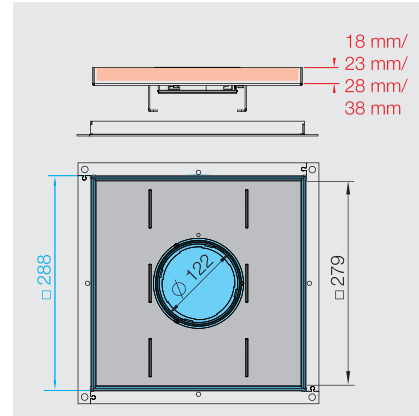
System dimensions, frame cassettes



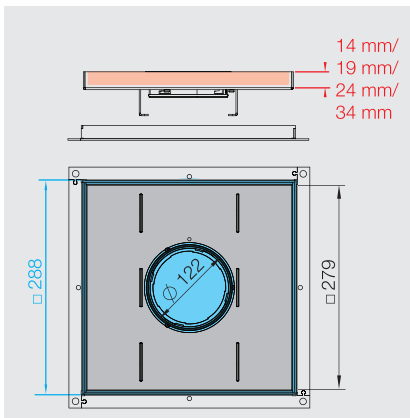
Nominal size 250-3, type RK SL1



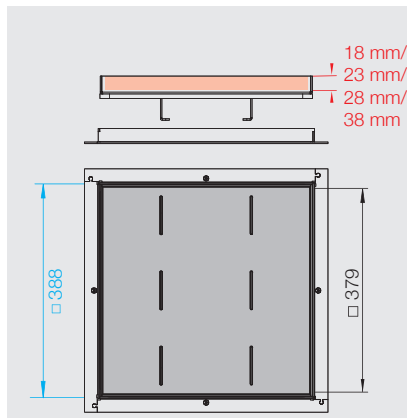
Nominal size 250-3, type RK SL2



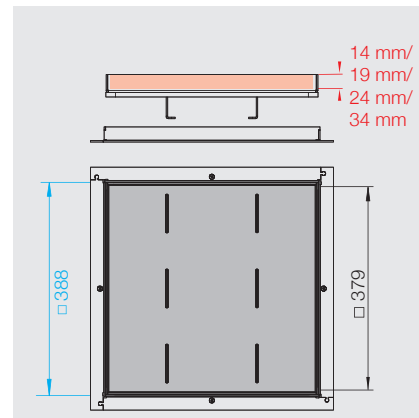
Nominal size 250-3, type RKF SL1



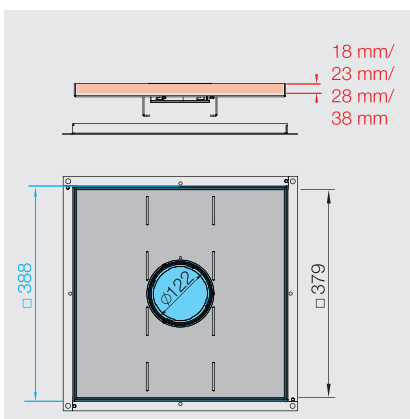
Nominal size 250-3, type RKF SL2



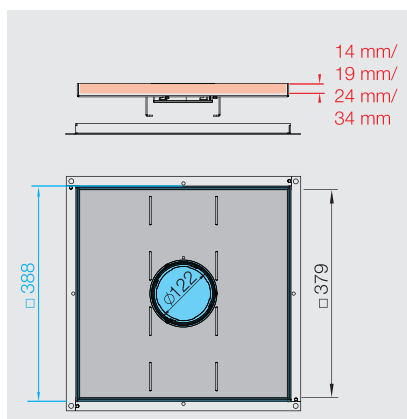
Nominal size 350-3, type RK SL1



Nominal size 350-3, type RK SL2



Nominal size 350-3, type RKF SL1



Nominal size 350-3, type RKF SL2



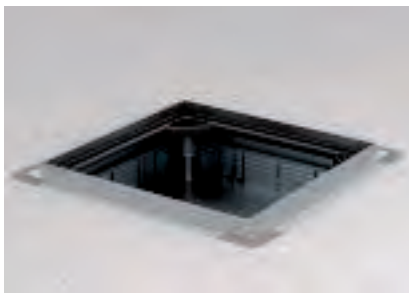
System description, heavy-duty frame cassette



Heavy-duty frame cassettes are suitable for the top closure of an underfloor draw and junction box in dry or wet-cleaned floors with high traffic loads. The cassettes are designed for individual static loads of up to 10 kN (load class 1) or 20 kN (load class 2). Additional heavy-duty supports in the box body ensure the necessary stiffness and load capacity. The cassettes are fastened directly on

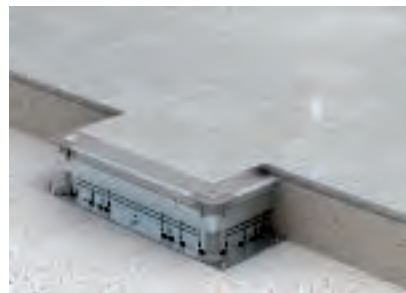
an underfloor junction and branch box without the use of a blanking lid. The cassette frame is fastened to the box body using four fastening screws and forms an all-round contact edge for the neighbouring floor covering. The cassette is inserted in the junction and branch box and is flush with the cassette frame. All the versions have a seal which acts as moisture protection. All the visible parts of the cas-

settes are made from stainless steel. The cassettes contain a 4 or 8 mm thick sheet steel plate, stiffened with additional angle profiles, for safe absorption of the traffic loads. The cassettes are available for different floor covering thicknesses of 20, 25, 30 and 40 mm.



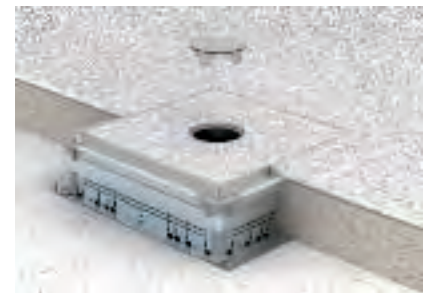
Load class

Load classes 1 and 2 apply for static individual loads of up to 10 kN or up to 20 kN. The load must be distributed over a surface of at least 100 x 150 mm. Always equip the underfloor box with the heavy-duty lid supports DSSL2.



Inspection opening version

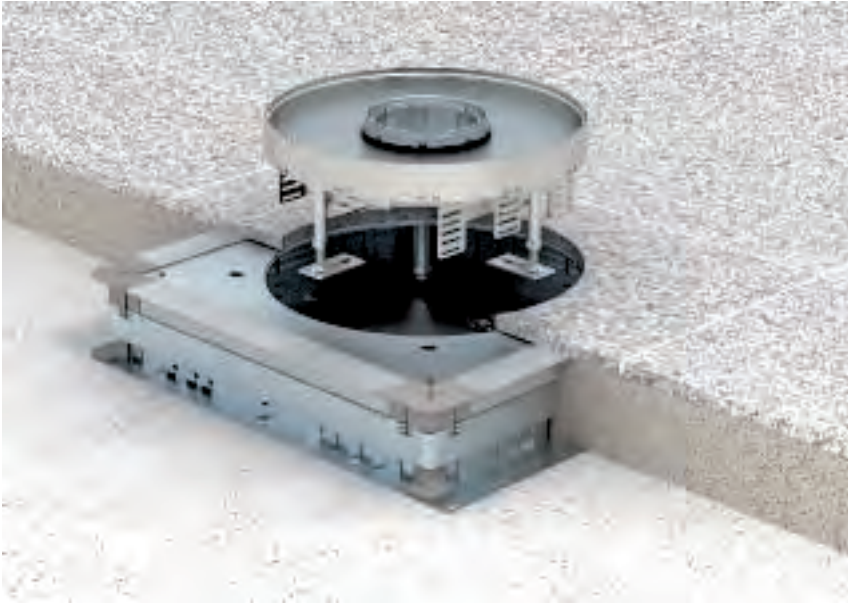
The "blank" version (RK.SL) is suitable for the top closure of an inspection opening. A suction lifter or magnetic lifter is required for opening.



Tube body version

The "for tube body" version (RK.FSL) is intended for use in wet-care floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

System overview, height-adjustable round heavy-duty cassette



Height-adjustable round heavy-duty cassettes are suitable for flush floor device installation in raised and cavity floors and in all kinds of screed-flush installation systems in dry or wet-cleaned floors with high traffic loads. The cassettes are designed for individual static loads of up to 20 kN (load class 2). The interior height adjustment allows exact adjustment of the top edge of

the cassette to the top edge of the surrounding floor covering. When mounted in a duct system, the system must have an appropriate installation opening. For this reason, an underfloor junction and branch box requires an appropriate blanking lid with height-adjustable heavy-duty supports and separate heavy-duty supports in the corner areas. All the visible parts of the

cassettes are made from stainless steel. The cassettes contain an 8 mm thick sheet steel plate, in order to accept the traffic loads which occur safely. The cassettes are available for different floor covering thicknesses of 20 and 25 mm.

Planning aids, heavy-duty systems



Load class

Load class 2 applies for static individual loads of up to 20 kN. The load must be distributed over a surface of at least 100 x 150 mm. Always equip the underfloor box with four heavy-duty lid supports DSSL2.



Inspection opening version

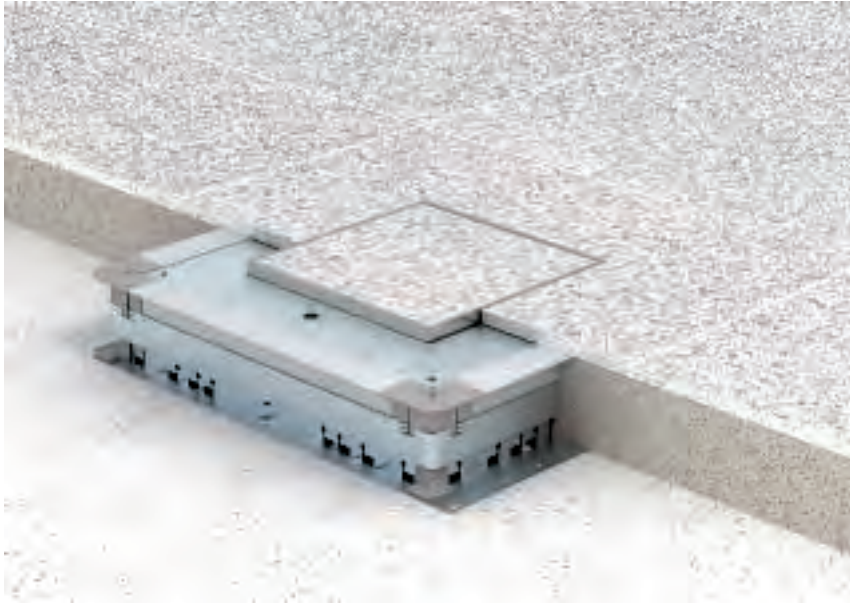
The "blank" version (RKRSLS) is suitable for the top closure of an inspection opening. A suction lifter or magnetic lifter is required for opening.



Tube body version

The version "for tube body" (RKFRSL) is intended for use in wet-cleaned floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

System description, height-adjustable square heavy-duty cassette

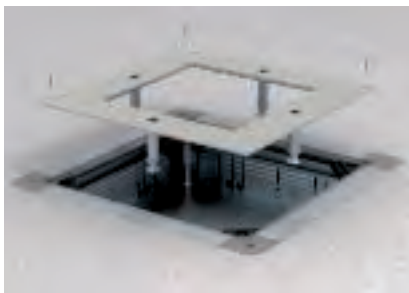


Height-adjustable square heavy-duty cassettes are suitable for flushfloor device installation in raised and cavity floors and in all kinds of screed-flush installation systems in dry or wet-cleaned floors with high traffic loads. The cassettes are designed for individual static loads of up to 10 kN (load class 1). The internal height-adjustment means that the top

edge of the cassette can be adjusted exactly to the top edge of the surrounding floor covering. When mounted in a duct system, the system must have an appropriate installation opening. For this reason, an underfloor junction and branch box requires an appropriate blanking lid with height-adjustable heavy-duty supports and separate heavy-duty supports in the corner

areas. All the visible parts of the cassettes are made from stainless steel. The cassettes contain an 8 mm thick sheet steel plate, in order to accept the traffic loads which occur safely. The cassettes are available for different floor covering thicknesses of 20 and 25 mm.

Planning aids, heavy-duty systems



Load class

Load class 1 applies for static individual loads of up to 10 kN. The load must be distributed over a surface of at least 100 x 150 mm. When the cassette is used in thin floor coverings, we recommend equipping the underfloor box with the heavy-duty lid supports DSSL2.



Inspection opening version

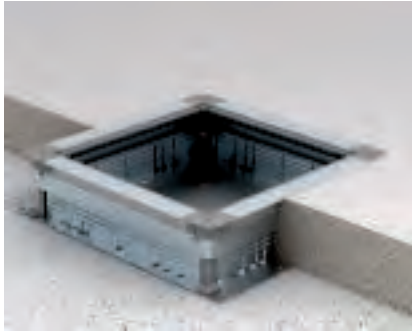
The "blank" version (RKNSL) is suitable for the top closure of an inspection opening. A suction lifter or magnetic lifter is required for opening.



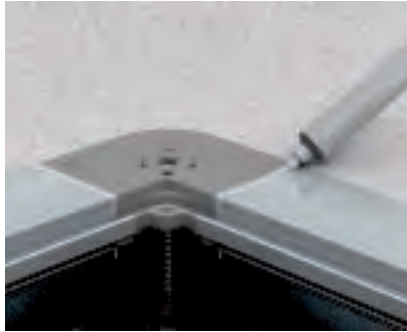
Tube body version

The version "for tube body" (RKFNSL) is intended for use in wet-cleaned floors. A continuous seal protects all the openings against the ingress of moisture. The tube body must be ordered separately.

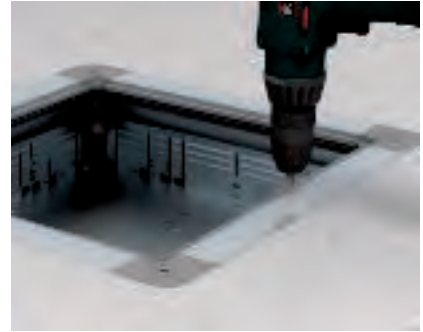
Mounting aid, heavy-duty frame cassette



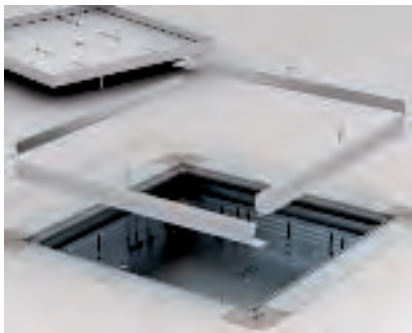
Preparation of an underfloor system
The frame cassette is mounted on an under-floor box.



Sealing of the underfloor box with silicone
Seal the frame of the underfloor box in the corners using silicone (silicone is included in the scope of delivery of the cassette).



Fasten the cassette frame to the underfloor box
Drill the fastening holes (\varnothing 3 mm) for the cassette frame at the marked points.



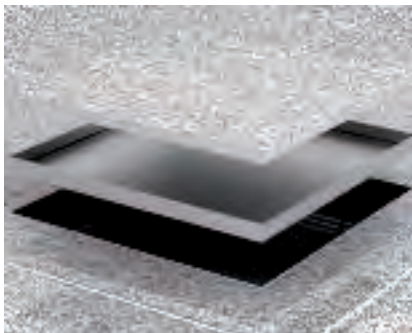
Mount the cassette frame to the underfloor box
Combine the cassette frame and mount it on the box body (fastening screws contained in the scope of supply).



Mounting of lid heavy-duty support
Insert the four heavy-duty lid supports in the corners of the underfloor box and adjust them to the required height. Lock the support screw with a locknut.



Laying the floor covering on the cassette frames
Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RK cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



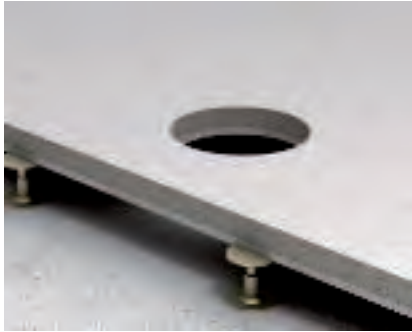
Insertion of the seal
Before sticking in the sealing ring, clean the mounting area.



Mounting of a threaded sleeve
This work step takes place before the floor covering is laid in the cassette. Drill a fastening hole for the threaded sleeve (\varnothing 8 mm). Insert the threaded sleeve and fasten it.



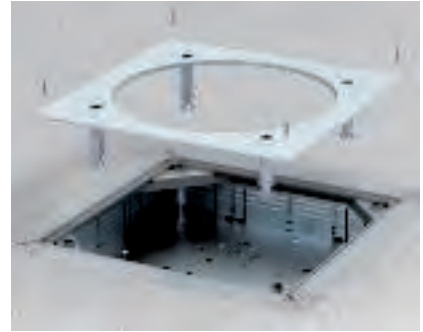
Mounting aid, height-adjustable round heavy-duty cassette



Preparation for mounting
The installation space for the cassette must be completed and clean.



Preparation of an underfloor system
Insert the four heavy-duty lid supports in the corners of the underfloor box and adjust them to the required height. Lock the support screw with a locknut.



Preparation of an underfloor system
Mounting the heavy-duty blanking lid on the underfloor box. Adjust the support feet to the right height and secure with a locknut.



Mounting of cassette frame
Fasten the levelling units of the cassette on the raw ceiling.



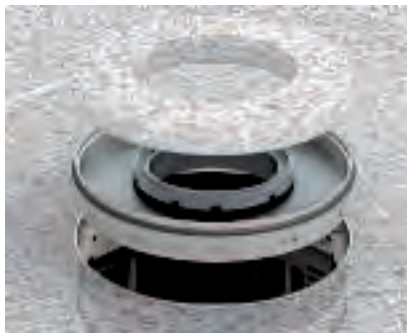
Adjustment of the cassette height
Adjust the cassette frame to the top edge of the floor covering. Secure the height adjustment of the height-adjustment screws with locknuts.



Laying the floor covering on the cassette frames
Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette frame with suitable materials.



Laying the floor covering in the RKR cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKFR cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Mounting of a threaded sleeve
This work step takes place before the floor covering is laid in the cassette. Drill a fastening hole for the threaded sleeve (Ø 8 mm). Insert the threaded sleeve and fasten it.



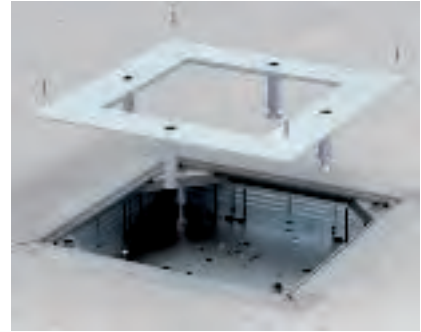
Mounting aid, height-adjustable square heavy-duty cassette



Preparation for mounting
The installation space for the cassette must be completed and clean.



Preparation of an underfloor system
Insert the four heavy-duty lid supports in the corners of the underfloor box and adjust them to the required height. Lock the support screw with a locknut.



Preparation of an underfloor system
Mounting the heavy-duty blanking lid on the underfloor box. Adjust the support feet to the right height and secure with a locknut.



Mounting of cassette
Fasten the levelling units of the cassette on the raw ceiling.



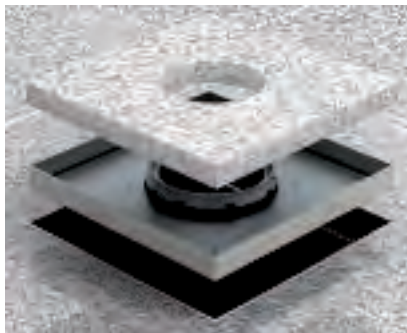
Adjustment of the cassette height
Adjust the cassette frame to the top edge of the floor covering. Secure the height adjustment of the height-adjustment screws with locknuts.



Laying the floor covering on the cassette frames
Work the floor covering to the cassette frame. Seal the remaining gap between the floor covering and the cassette frame with suitable materials.



Laying the floor covering in the RKN cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Laying the floor covering in the RKFN cassette
Lay the floor covering in the cassette and stick it down. Seal the remaining gap between the floor covering and the cassette with suitable materials.



Cleaning of the seals
To complete the mounting work, clean the interior of the cassette and the seals of the cassette and tube body. Apply Vaseline to the seals (contained in the scope of delivery).



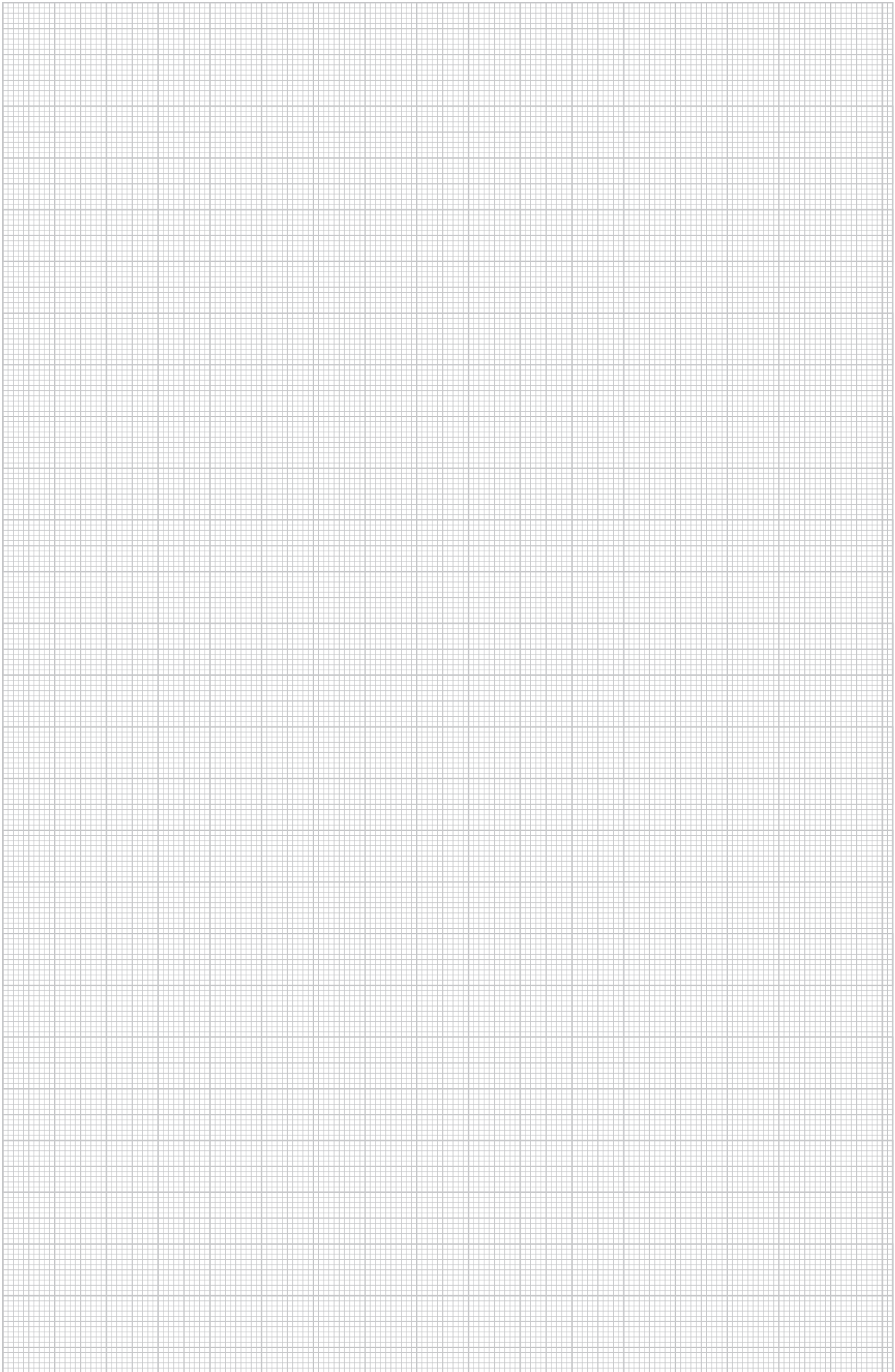


Planning checklist

When planning heavy-duty systems, the following points should be observed:

- ✓ Match floor structure, payloads and area loads
- ✓ Observe the minimum installation depths of device installation units
- ✓ The underfloor socket must sit entirely on the concrete floor. Cavities under the socket strongly reduce the load capacity
- ✓ The underfloor socket must have a non-positive connection to the screed. Do not apply a separating strip between the underfloor socket and the screed
- ✓ Work floor coverings exactly up to the opening of the blanking lid, e.g. GRAF9 Ø 305+1 mm
- ✓ Stick down the floor coverings onto the surface of the underfloor boxes and in the lid of the cassettes fully and firmly







Floor sockets and floor boxes: for perfect power and data connections

The range of UDHOME complete units can position power, data and multimedia technology exactly where they are required. Floor sockets and floor boxes of the UDHOME family are mounted directly on the raw floor and connected with flexible installation pipes – it couldn't be simpler.



UDHOME2



UDHOME4

Elegant, discreet and robust

Thanks to their elegant, discreet design, UDHOME floor sockets and floor tanks integrate themselves seamlessly into the interior architecture. When the hinged cover is closed, only the high-quality surfaces of pure stainless steel or solid brass are visible. Thanks to their stable construction, the floor sockets and floor tanks are also resistant to the everyday loads in homes, offices and administrative areas.



Easy handling from ordering to mounting



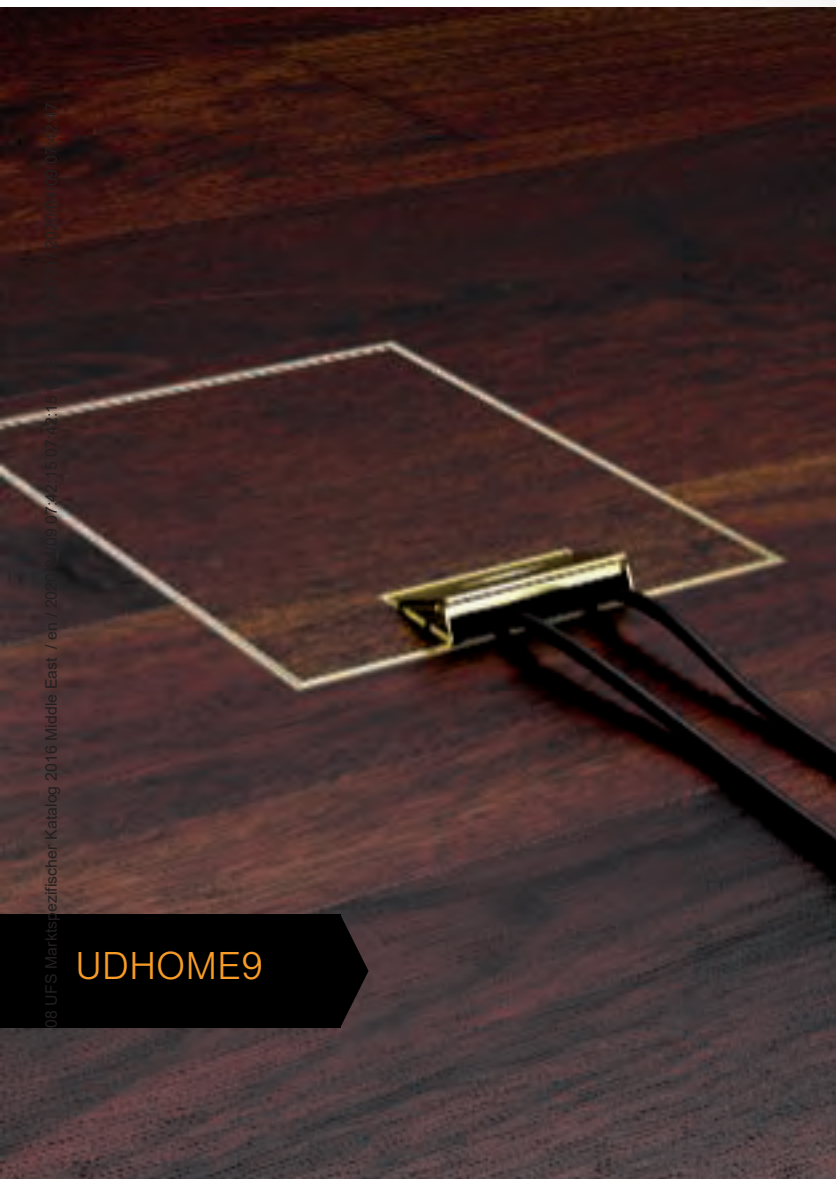
High-quality materials and solid processing



Maximum flexibility in equipment



Planning aids, floor sockets UDHOME



UDHOME9

A special customer: Old Master in a new light

Architect: Michele de Lucchi
Museo della Pietà

The Museo della Pietà in Milan is home to the last, uncompleted masterpiece by Michelangelo: The Pietà Rondanini. The 89-year-old master worked on the sculpture, which depicts Jesus and Mary, just six days before his death in February 1564.

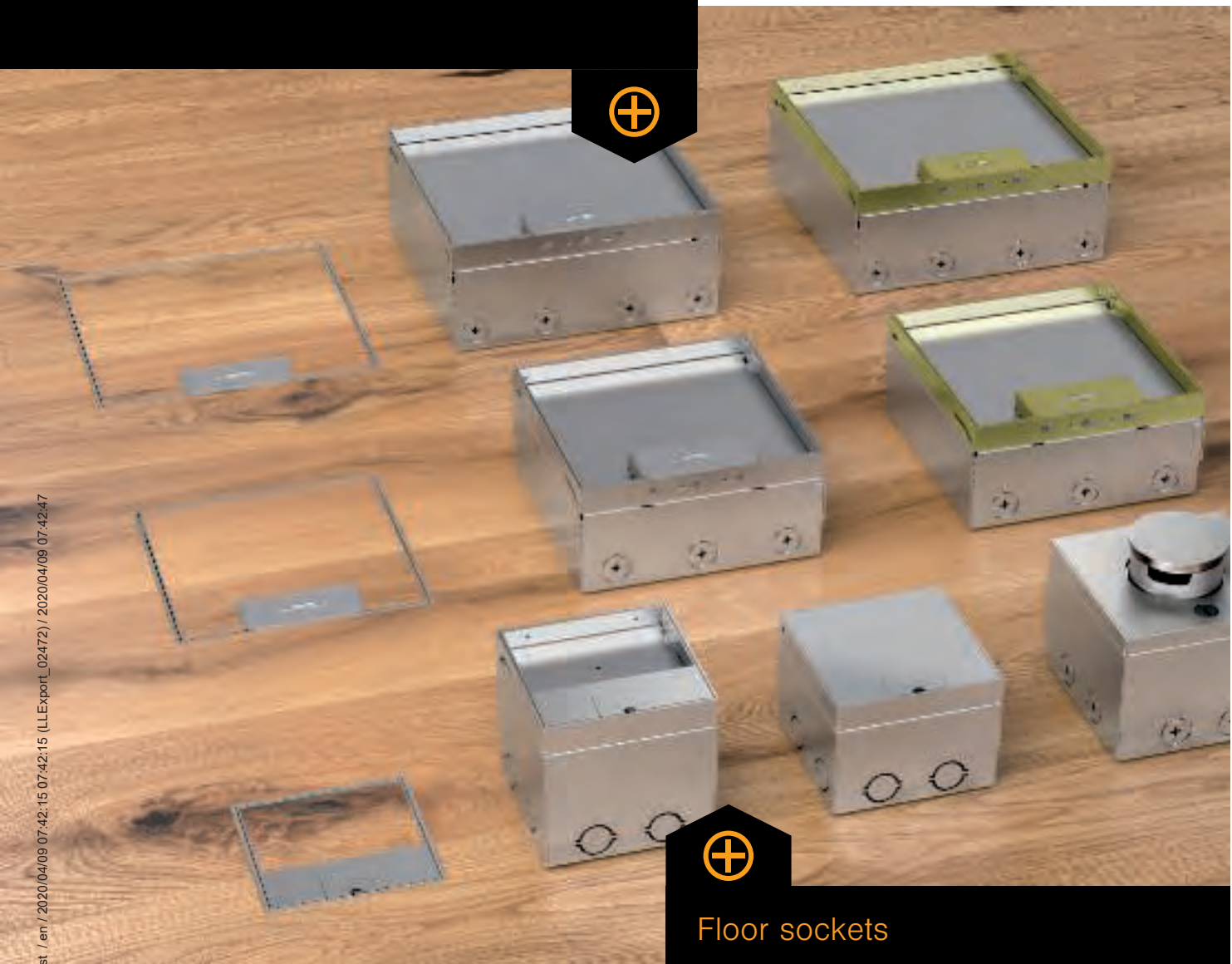
The compact UDHOME floor sockets and a special solution of OKA trunking from OBO Bettermann provide a discreet and flexible power supply around the famous sculpture.



Overview of the UDHOME series

Floor boxes

The UDHOME4 and UDHOME9 floor boxes are the ideal solution for a wide equipment range and dry-cleaned floor coverings. The floor boxes offer a lot of space for the installation of power, data and multimedia connections and are available in discreet stainless steel and in stylish brass.



Floor sockets

The UDHOME2 floor sockets, with their dimensions of 140 x 140 mm, combine both elegant appearance and functionality. The product range offers solutions for dry and wet-care floors. Stainless steel or aluminium are used as materials.

Floor structure

Thanks to their compact design, UDHOME floor sockets and floor boxes require considerably less space in the floor than other electrical installation systems.

Height-adjustment supports

With the easily accessible height-adjustable supports, it is possible to adjust the covers of the floor sockets and floor boxes to the top edge of the floor coverings without any difficulty. The optional height extension means that adjustment is easy, even with higher floor structures.





Tested quality

In addition, OBO tests its ducts and underfloor sockets in its own BET Test Centre. Thus, special solutions can be tested for their load capacity within a very short time.

Simple infeed



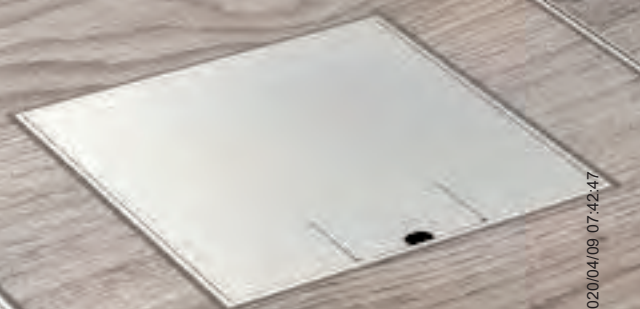
The feeding in of cables is not complex. They are simply run in standard empty tubes in the screed up to the UDHOME.



Small but perfect: UDHOME 2 floor socket

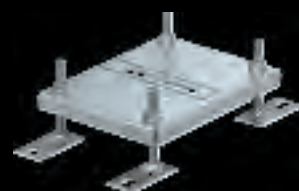
UDHOME2 are available in three versions: With stainless steel cover, with floor covering recess and with tube body. With its protection rating of IP65, the floor socket with tube body is suitable for use in wet-cleaned cavity and screed floors.

Planning aids, floor sockets UDHOME



Height adjustment

The cover is adjustable to the edge of the floor covering using four height-adjustment supports. A height extension with an additional adjustment range of 10–60 mm can be mounted for higher floor structures.

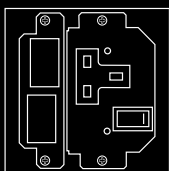


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Device installation

The scope of delivery contains one BS socket with switch and a mounting support for up to two LJ6C data modules.

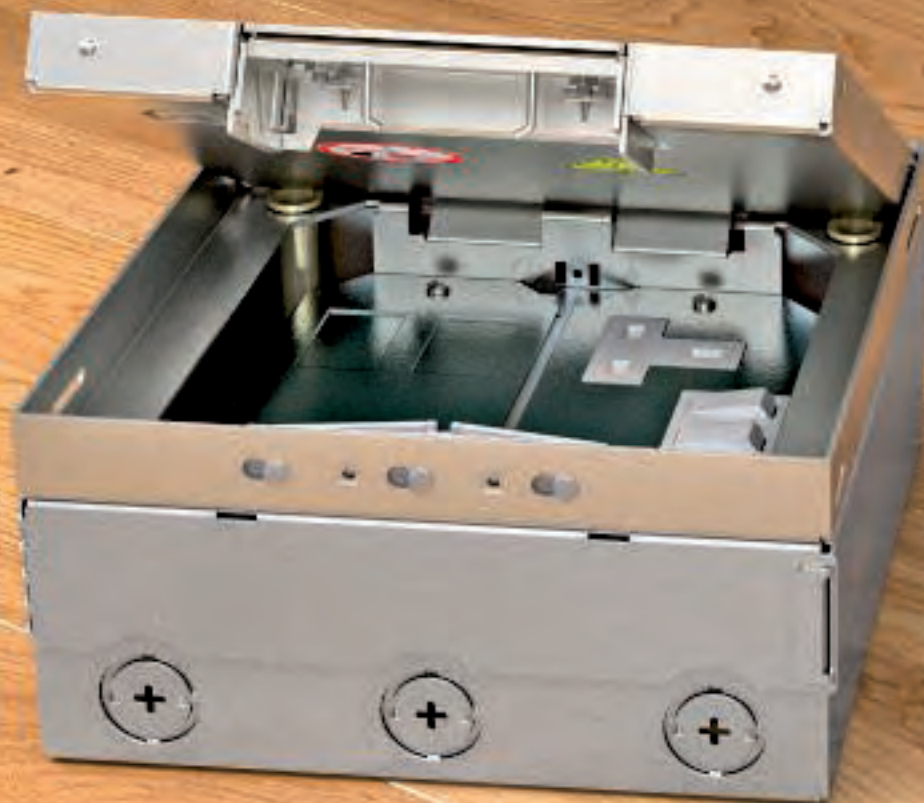


Connection

Eight pre-marked entry openings (M25) allow simple connection with flexible installation tubes.



For a wide range of equipment:
The UDHOME4 floor box

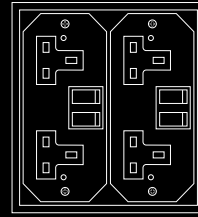


Design

The UDHOME4 can fit neatly into high quality interior architecture. All you can see is a slender metal edge and the cord outlet. The floor box is available in stainless steel or brass versions.

Device installation

The UDHOME4 can be flexibly equipped with power, data and multimedia devices via two APMT2 mounting plates for BS installations.



Dimensions

Body: 199 mm x 199 mm
Screed height: 95–110 mm
Floor height: 95–125 mm
Optional height extension



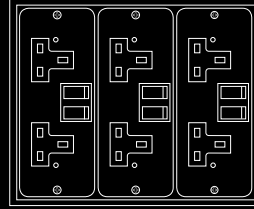
Height adjustment

The UDHOME has a height adjustment range of up to 30 mm and can thus be adjusted to the level of the finished floor.



Device installation

Via three APMT5 mounting plates for BS installations, the UDHOME9 can be flexibly equipped with power, data and multimedia devices.



Installed

The UDHOME9 is the largest floor box of the UDHOME family. It combines restrained design with a wide range of use options.





GES R2 floor sockets

The round floor sockets of the GES R2 series supply data and power exactly where they are required. Their handling is simple: The connection lines are inserted in the compact installation space and that space is closed off with a lid. Depending on the lid version, the floor sockets are suitable for dry or wet-cleaned floors.



Areas of application

OBO GES R2 floor sockets are an ideal underfloor solution when a discreet appearance, a high load capacity and varied functionality are required. Whether in the living room or in public areas – such as foyers, shopping centres or exhibition areas – the floor sockets stand out through their fine design and also add value to high-quality floor areas.

The installation socket of the GES R2 floor sockets is pre-equipped with two sockets. To the side of the socket, there is space for up to two connection sockets for data technology applications, as an option.

The floor sockets of the GES R2 series are available in various materials. The die-cast zinc variant is available surface-treated in the shades nickel, chrome, old copper and old brass and is certified to IP66 in the unused state.



Ideally suited to wet-cleaned floors



Withstands the highest loads



In use around the world for decades

Planning aids, floor sockets GES R2



Modular structure

The GES R2 floor sockets offer the tried-and-trusted functions of the Ackermann made by OBO underfloor systems – now newly constructed and with an up to 100% larger installation compartment compared to the predecessor model GESRM2. This provides space for a double socket of the Modul 45 series and up to two data modules.

The modular structure as a screed socket, installation socket and service outlet allows simple configuration, according to the area of application.

Lid variants

The classic service outlet for the GES R2 floor socket is available in various designs.



Installation socket

The installation socket is available empty or pre-equipped. The pre-equipped variant contains either a double socket or a free combination of two Modul 45 individual devices.

Screed box

The height-adjustable screed box is used to accept the service outlet when the GES R2 floor socket is installed in the screed.



Variable

All the cover variants of the GES R2 floor socket can be inserted in raised floors or in the screed.



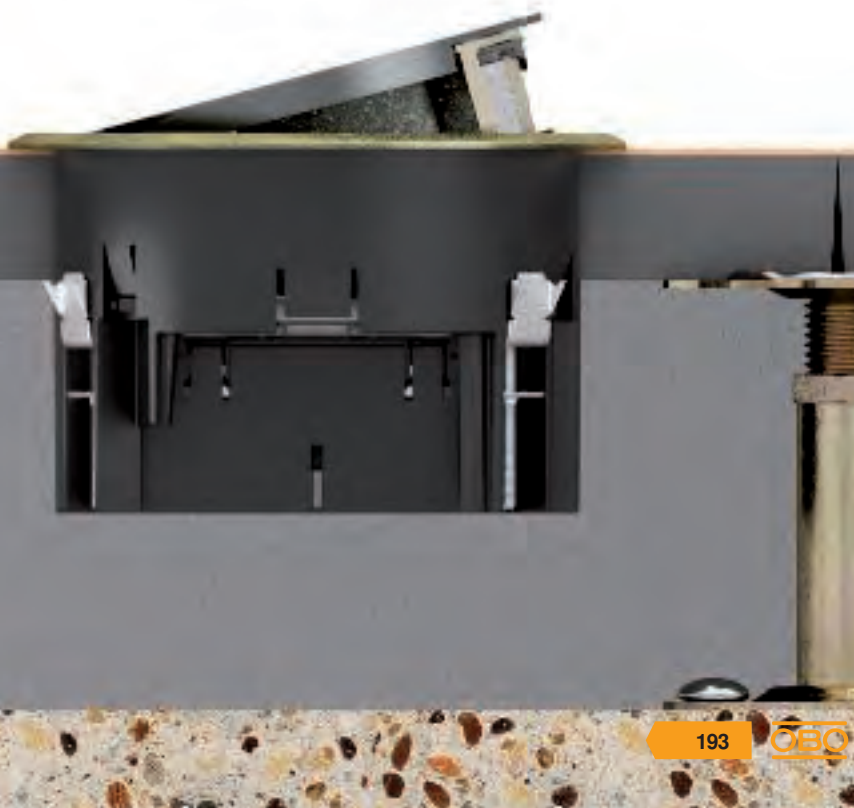
Installation in system floor

The installation socket can be installed simply in the system base. A drill hole of 122 mm is sufficient.



Mounting

The installation socket is mounted in the raised floor plate using three fastening brackets.



GES R2 floor socket for wet-cleaned floors

The tube body seals the closed installation space against the ingress of water, which occurs, for example, when the floor is cleaned. Even if the tube body cover is open for letting out cables, a seal in the lower ring of the installation socket offers protection against the ingress of water. The GES R2 floor socket with tube body thus fulfils the requirements for service outlets in wet-care floors according to EN 50085-2-2 and is certified to IP66 in the unused state.

Tube body

The tube body can be operated with one hand. To open it, the handle clamp is pulled up and, after the audible engaging of the support, turned slightly left and locked.

To insert the cables, it is sufficient to press two pressure points to release the cover. After the connectors have been inserted, the cover is audibly engaged on the tube body ring. The tube body cover is closed again by pressing the pressure points and lowering the cover by turning it to the right slightly.





IP
66



Blank version with metal lid

The metal cover with bayonet lock can be opened with an Allen key.

This version is particularly suitable for public areas and the supply of temporary installations.



Surfaces

The GES R2 floor socket with tube body stands out through its compact shape and discreet design. Four high-quality surfaces are available: Nickel, old brass, chromium and old copper.



IP
66

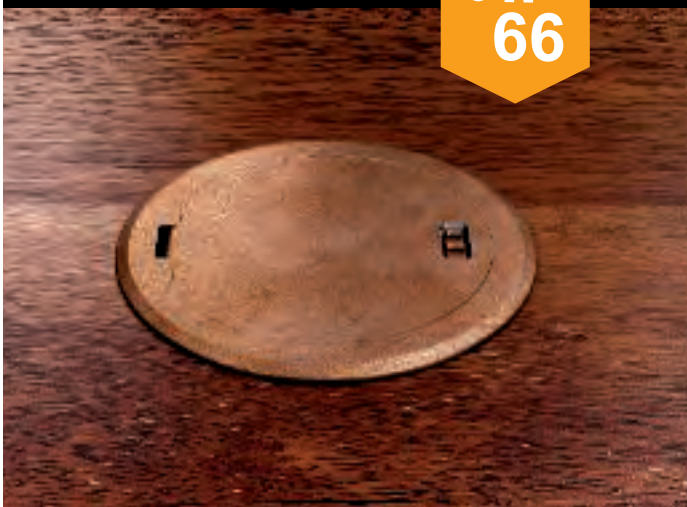


GES R2 floor socket with hinged lid for dry-cleaned floors

The GES R2 floor socket with hinged lid stands out through its fine design. It is the perfect solution for high-quality floor coverings, which are dry-cleaned.

Hinged lid

The locking function of the hinged lid allows a secure outlet for the cable routing. When closed, the floor socket is even suitable for wet cleaning.



GES R2 floor socket with cord outlet



The plastic GES R2 variants are particularly suitable for construction projects, which use carpet as the floor covering. Typical areas of application are office and administrative buildings.



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Cover versions

Two lid variants are available: The lid variant with cord outlet provides a permanent cable outlet to supply the electrical resources. The version with blanking lid, which can only be opened with a screwdriver, protects against unintentional third-party access.



Protective frame

The floor covering protection frame protects the carpet against damage and prevents wear at the cut edges of the carpet.



Colours

The plastic floor sockets are available in the colours iron grey or graphite black.



Installation socket for Modul 45

The installation socket for GES R2 service outlets accepts Modul 45 devices. After the routing of the electrical installation, the installation socket is inserted in the screed box.

Separation of different current types

The large installation socket offers separate installation spaces for heavy current connections and data or multimedia connections.



Functional

The installation socket possesses break-out cable entries and an integrated strain relief.



Varied installation options

The installation socket MT R2 1.5, in which a single switched socket can be installed, is suitable for standard applications. The variant for two single Modul 45 devices offers a great amount of installation flexibility. The installation space is separated here. This allows simultaneous installation of sockets, data and multimedia connections, such as HDMI or VGA.



Solid hold

The fixing bracket is used to fasten the installation socket in raised and cavity floors or in the screed box.



Mounting of the underfloor box in the screed

Installation in the screed box

The GES R2 floor sockets are installed in the screed in the compact screed box. The screed box possesses a sturdy pressure acceptance plate, whose frame serves as the screed drip edge. The mounting protection lid of the screed box is knocked out after the screed work has been completed. This makes the installation opening for the service outlet accessible.



Connection

Cables are routed via flexible installation pipes in the insulation layer of the screed construction. The screed box possesses four break-out pipe entries.





Screed-flush drip edge

The outlet edge of the screed box ensures sufficient stability and load dissipation in the area. The installation socket and the service outlet are installed after the floor covering work has been carried out.



Height adjustment

Using a simple 3-point height adjustment, the screed box can be adjusted exactly to the top edge of the screed. The height adjustment ranges from 85 to 130 mm.



Metal materials

Alu — Aluminium

AIG — Die-cast aluminium

VA (1.4301) — Stainless steel, rustproof 1.4301

VA (1.4303) — Stainless steel, rustproof 1.4303

CuZn — Brass

St — Steel

Zn — Die-cast zinc

Plastic materials

HP — Pressboard

MGUM — Foam rubber

PA — Polyamide

Temperature resistance:
permanently up to approx. 90 °C, briefly up to about 130 °C
and to about minus 40 °C*.

Chem. resistance generally as for polyethylene.

Resistant to

Petrol, benzene, diesel oil, acetone, solvents for paints and lacquers,
oils and greases.

Unstable with

Bleach, most acids, chlorine.

Risk of stress cracks

Low in air-humid conditions; only with some aqueous salt solutions.
Highly desiccated parts (high temperature and extremely low air
humidity) are highly sensitive to fuels and various solvents.

PVC — Polyvinylchloride

Temperature resistance:
permanently up to 65 °C, briefly up to 75 °C and to approx. minus 30
°C*.

Resistant to

Weak acids, alkalis, oils and greases, petrol.

Unstable with

Strong acids, benzene, acetone, iodine, toluene, trichloroethylene.

Risk of stress cracks

Low, only with some solvents such as benzene and acetone.

PS — Polystyrene

Temperature resistance:
Because of its relatively high sensitivity to the effects of chemicals, its
use is not recommended at temperatures above normal room
temperature, about 25 °C.

Resistance to cold: to about minus 40 °C*.

Resistant to

Alkalis, most acids, alcohol.

Conditionally resistant to

Oils and greases.

Unstable with

Butyric acid, concentrated nitric acid, concentrated acetic acid,
acetone, ether, petrol and benzene, solvents for paints and lacquers,
chlorine, diesel fuel.

Risk of stress cracks

Relatively high.

Stress cracks can be caused by, amongst other things, acetone, ether,
petrol, cyclohexane, heptane, methanol, propanol and the softeners
used in some PVC cable mixes.

PC/ABS — Polycarbonate/acrylonitrile butadiene styrene

Temperature resistance:
minus 30 °C to 90 °C, briefly up to approx. 105 °C, melting range at
approx. 200 °C, thermal decomposition at 300 °C. Material
thicknesses of 1.5 mm or more can achieve UL94 V-0. At material
thicknesses of 1 mm or more, the glow wire temperature of 960 °C
according to IEC 60695-2-12 is achieved.

Resistant to

Mineral acids, organic acids and aqueous salt solutions

Conditionally resistant to

Alkalis, hydrocarbons, aromatics and (in trace form) a series of
greases and oils.

PC — Polycarbonate

Temperature resistance:
permanently up to approx. 110 °C (in water 60 °C), briefly up to
125 °C, and to below minus 35 °C.

Resistant to

Petrol, turpentine, most weak acids.

Unstable with

Acetone, benzene, chlorine, methylene chloride, most concentrated
acids.

Risk of stress cracks

Relatively low.

Media which can cause tension cracking include benzene, aromatic
hydrocarbons, methanol, butanol, acetone, turpentine.

*The minus values apply only for parts in the quiescent condition with
no severe impact stress.

There is no plastic that is resistant to every chemical. The agents listed
are only a small selection. Plastic parts are especially at risk in the
presence of chemicals and high temperatures. Stress cracks may
occur. If in doubt, please consult us and/or ask for a detailed chemical
resistance table.

Stress crack formation: Stress cracks may occur if plastic parts under
tension are exposed to chemicals at the same time. Parts made of
polystyrene and polyethylene are particularly susceptible. Stress cracks
may even be caused by agents to which the plastic in question is
resistant in the absence of stress. Typical examples of parts under
constant stress when used as intended: Grip clips, intermediate
connectors of cable glands, ribbon clips.



Classification to EN 50085-1

		Screed-covered: EÜK ducts	Screed-flush: EÜK sockets, DUG, etc.	Screed-flush systems, OKA	Screed-flush systems, EBK	On-floor systems	GES service outlets	Height-adjustable cassettes	Frame cassettes	Heavy-duty support (UZD + cassettes)
		EÜK	UZD	OKA	EBK	AIK	GES	RK.N	RK	.SL
6.1	According to material									
	Under consultation									
6.2	According to impact resistance for installation and application									
6.2.1	Electrical installation duct systems for impact energy 0.5 J.									
6.2.2	Electrical installation duct systems for impact energy 1 J.									
6.2.3	Electrical installation duct systems for impact energy 2 J.									
6.2.4	Electrical installation duct systems for impact energy 5 J.						x	x	x	x
6.2.5	Electrical installation duct systems for impact energy 20 J.	x	x	x	x	x				
6.3	According to temperature, as specified in the tables 1, 2 and 3									
Table 1	Minimum storage and transport temperatures ± 2 °C									
	-45									
	-25	x	x	x	x	x				
	-15						x	x	x	x
	-5									
Table 2	Minimum installation and application temperatures ± 2 °C									
	-25									
	-15									
	-5									
	+5	x	x	x	x	x	x	x	x	x
	+15									
Table 3	Maximum application temperatures ± 2 °C									
	+60	x	x	x	x	x	x	x	x	x
	+90									
	+105									
	+120									



Classification to EN 50085-1

		Screed-covered: EÜK ducts	Screed-flush: EÜK sockets, DUG, etc.	Screed-flush systems, OKA	Screed-flush systems, EBK	On-floor systems	GES service outlets	Height-adjustable cassettes	Frame cassettes	Heavy-duty support (UZD + cassettes)
		EÜK	UZD	OKA	EBK	AIK	GES	RK.N	RK	.SL
6.4	According to the resistance against fire spread									
6.4.1	Electrical installation duct systems which permit the spread of fire						x	(x)	(x)	
6.4.2	Electrical installation duct systems which do not permit the spread of fire	x	x	x	x	x				x
6.5	According to the electrical conductivity									
6.5.1	Electrical installation duct system with electrical conductivity	x	x	x	x	x	x 2)	x	x	x
6.5.2	Electrical installation duct system without electrical conductivity						x 1)			
6.6	According to the electrical insulation property									
6.6.1	Electrical installation duct system without electrical insulation property	x	x	x	x	x	x 1)			x
6.6.2	Electrical installation duct system with electrical insulation property						x 2)	x	x	
6.7	According to the protection ratings offered by the housing or casing to EN 60529:1991									
6.7.1	According to protection against ingress of solid foreign bodies	x	x	x	x	x	x	x	x	x
6.7.2	According to protection against ingress of water		x	x				x	x	x
6.7.3	According to protection against contact with dangerous parts						x	x	x	x

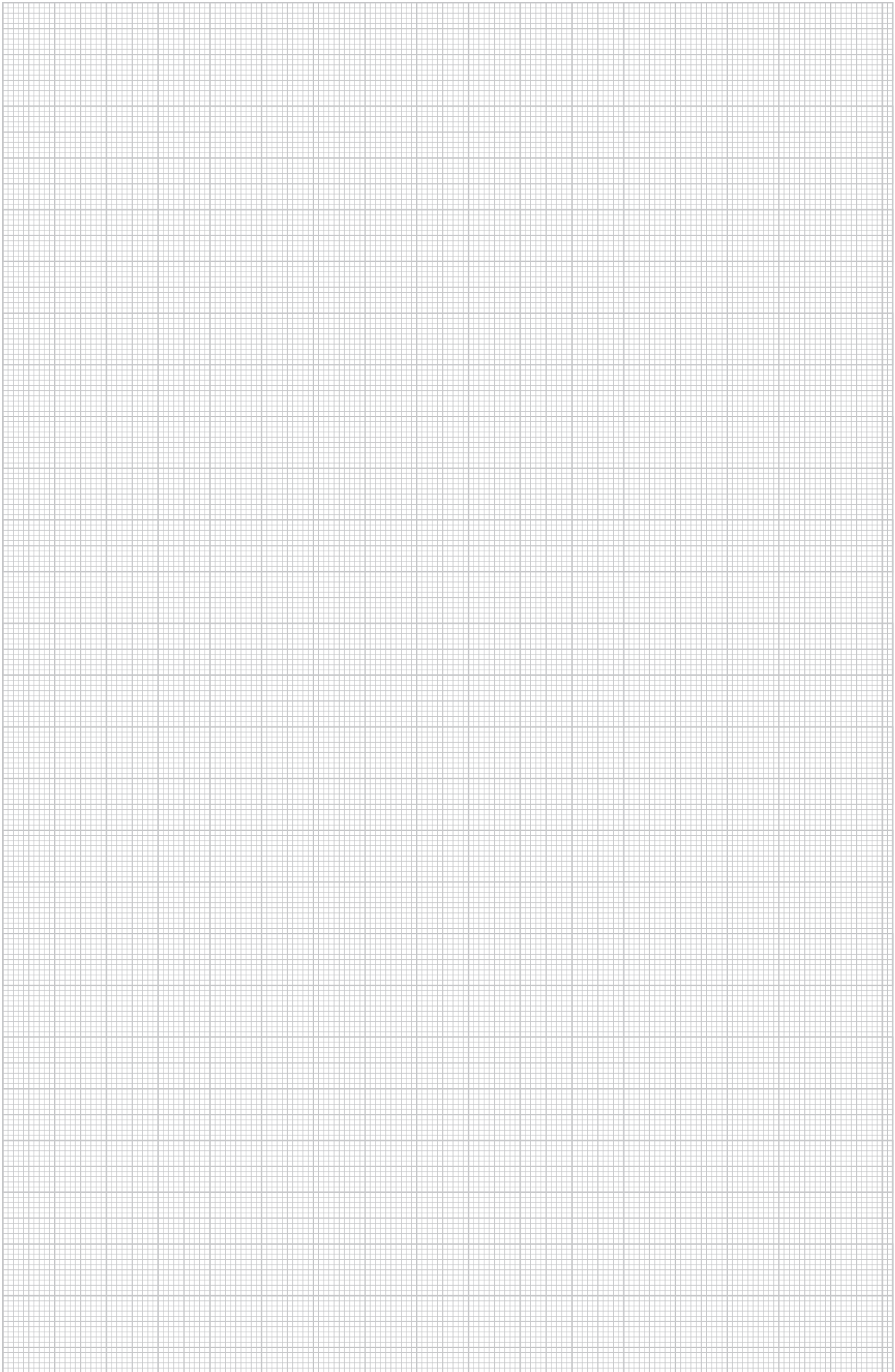
1) Applies to polyamide service outlets 2) Applies to metal service outlets



Classification to EN 50085-2-2

		Screed-covered: EÜK ducts	Screed-flush: EÜK sockets, DUG, etc.	Screed-flush systems, OKA	On-floor systems	GES service outlets	Height-adjustable cassettes	Heavy-duty support (UZD + cassettes)	Frame cassettes	Heavy-duty support (UZD + cassettes)
		EÜK	UZD	OKA	AIK	GES	RK.N	.SL	RK	.SL
6.101	Depending on the type of floor care									
6.101.1	Electrical installation duct systems for dry floor cleaning									
6.101.2	Electrical installation duct systems for wet floor cleaning when the service outlet is not in use		x				x	x	x	x
6.101.3	Electrical installation duct systems for wet floor cleaning when the service outlet is in use		x				x	x	x	x
6.102	According to resistance to vertical loads affecting a small surface area									
6.102.1	Electrical installation duct systems for 500 N									
6.102.2	Electrical installation duct systems for 750 N	x								
6.102.3	Electrical installation duct systems for 1,000 N									
6.102.4	Electrical installation duct systems for 1,500 N				x					
6.102.5	Electrical installation duct systems for 2,000 N					x				
6.102.6	Electrical installation duct systems for 2,500 N									
6.102.7	Electrical installation duct systems for 3,000 N		x	x			x		x	
6.103	According to resistance to vertical loads affecting a large surface area									
6.103.1	Electrical installation duct systems for 2,000 N									
6.103.2	Electrical installation duct systems for 3,000 N						x			
6.103.3	Electrical installation duct systems for 5,000 N					x			x	
6.103.4	Electrical installation duct systems for 10,000 N									
6.103.5	Electrical installation duct systems for 15,000 N		x					x		x







EÜK screed-covered duct system

The EÜK screed-covered duct system from Ackermann made by OBO is the ideal electrical installation system for large areas with fixed furnishing plans, for example in office or administration buildings. Duct sections and underfloor boxes form a tight grid, hidden in the screed, for cable routing. When combined with device installation units, access is given to power, data and multimedia technology.

OBO
BETTERMANN



EÜK screed-covered duct system

	Duct height 28 mm	212
	Duct height 38 mm	214
	Duct height 48 mm	216
	Underfloor box 250-3	220
	Underfloor box 350-3	224

 Duct height 28 mm

Underfloor installation duct, 2-compartment

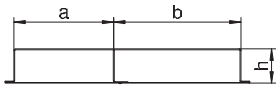


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S2 19028	190	2000	2	2	334.000	7400300
S2 25028	250	2000	2	2	410.000	7400312

St Steel

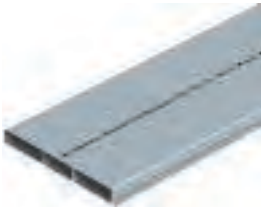
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S2 19028	80	110	28	2028	2808
S2 25028	110	140	28	2808	3588

Underfloor installation duct, 3-compartment

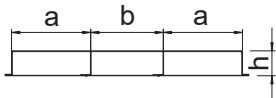


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S3 25028	250	2000	3	2	438.000	7400324
S3 35028	350	2000	3	2	561.000	7400336

St Steel

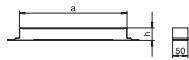
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S3 25028	90	70	28	2288	1794
S3 35028	120	110	28	3068	2834

Connection shackle, height 28 mm



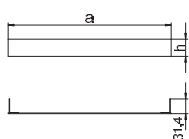
Type	Dimension a mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
VL 19028E	190	28	1	24.900	7400960
VL 25028E	250	28	1	32.300	7400966
VL 35028E	350	28	1	36.800	7400972

St Steel

FS Strip galvanised

Duct connectors for conductive mounting of screed-covered underfloor installation duct.

Duct end closure piece



Type	Dimension a mm	Dimen- sion h mm	Pack Piece	Weight kg/100 pc.	Item no.
SES 19027	190	27	1	7.100	7403980
SES 25027	250	27	1	8.800	7404002
SES 35027	350	27	1	10.300	7404014

St Steel

FS Strip galvanised

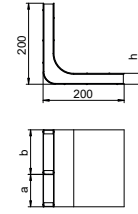
End cap for screed-covered and flushfloor underfloor installation ducts.

Vertical bend, two-compartment, height 28 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV2 19028	190	2	1	160.000	7400620
KV2 25028	250	2	1	201.000	7400632

- St** Steel
- FS** Strip galvanised

For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).

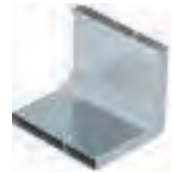
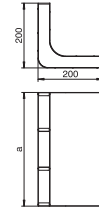


Vertical bend, three-compartment, height 28 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV3 25028	250	3	1	213.000	7400644
KV3 35028	350	3	1	275.000	7400656

- St** Steel
- FS** Strip galvanised

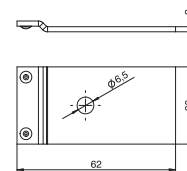
For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).



Duct connection bracket (conductive)

Type	Pack Piece	Weight kg/100 pc.	Item no.
VWE	20	2.800	7400980

- St** Steel
- FS** Strip galvanised



Duct height 38 mm

Underfloor installation duct, 2-compartment

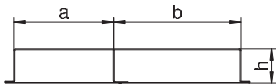


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S2 19038	190	2000	2	2	349.000	7400304
S2 25038	250	2000	2	2	427.000	7400316

St Steel

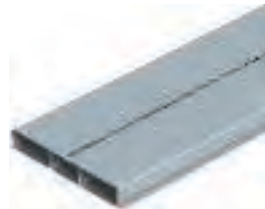
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S2 19038	80	110	38	2808	3888
S2 25038	110	140	38	3888	4968

Underfloor installation duct, 3-compartment

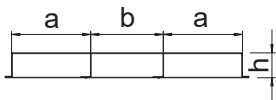


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S3 25038	250	2000	3	2	466.000	7400328
S3 35038	350	2000	3	2	595.000	7400340

St Steel

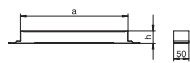
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S3 25038	90	70	38	3168	2484
S3 35038	120	110	38	4248	3924

Connection shackle, height 38 mm



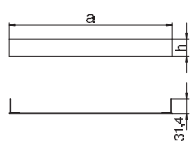
Type	Dimension a mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
VL 19038E	190	38	1	25.800	7400962
VL 25038E	250	38	1	33.100	7400968
VL 35038E	350	38	1	40.400	7400974

St Steel

FS Strip galvanised

Duct connectors for conductive mounting of screed-covered underfloor installation duct.

Duct end closure piece



Type	Dimension a mm	Dimen- sion h mm	Pack Piece	Weight kg/100 pc.	Item no.
SES 19037	190	37	1	9.500	7403984
SES 25037	250	37	1	11.700	7404006
SES 35037	350	37	1	14.400	7404018

St Steel

FS Strip galvanised

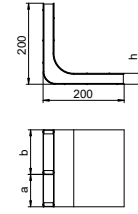
End cap for screed-covered and flushfloor underfloor installation ducts.

Vertical bend, two-compartment, height 38 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV2 19038	190	2	1	170.000	7400624
KV2 25038	250	2	1	210.000	7400636

- St Steel
- FS Strip galvanised

For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).

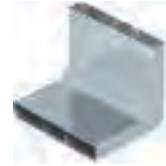
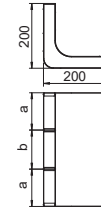


Vertical bend, three-compartment, height 38 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV3 25038	250	3	1	223.000	7400648
KV3 35038	350	3	1	286.000	7400660

- St Steel
- FS Strip galvanised

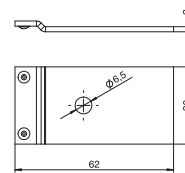
For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).



Duct connection bracket (conductive)

Type	Pack Piece	Weight kg/100 pc.	Item no.
VV E	20	2.800	7400980

- St Steel
- FS Strip galvanised



 Duct height 48 mm

Underfloor installation duct, 2-compartment

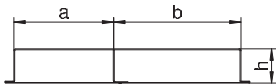


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S2 19048	190	2000	2	2	376.000	7400308
S2 25048	250	2000	2	2	451.000	7400320

St Steel

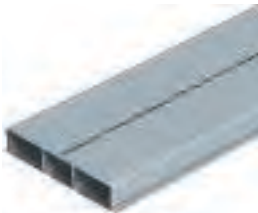
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S2 19048	80	110	48	3588	4968
S2 25048	110	140	48	4968	6348

Underfloor installation duct, 3-compartment

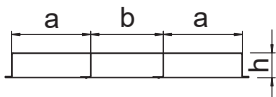


Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S3 25048	250	2000	3	2	500.000	7400332
S3 35048	350	2000	3	2	607.000	7400344

St Steel

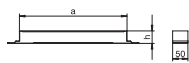
FS Strip galvanised

Underfloor installation duct for laying cables under the floor.



Type	Dimension a mm	Dimen- sion b mm	Dimen- sion h mm	Cross- section draw a mm ²	Cross- section draw b mm ²
S3 25048	90	70	48	4048	3174
S3 35048	120	110	48	5428	5014

Connection shackle, height 48 mm



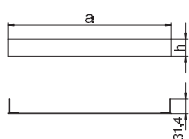
Type	Dimension a mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
VL 19048E	190	48	1	26.600	7400964
VL 25048E	250	48	1	34.000	7400970
VL 35048E	350	48	1	41.200	7400976

St Steel

FS Strip galvanised

Duct connectors for conductive mounting of screed-covered underfloor installation duct.

Duct end closure piece



Type	Dimension a mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
SES 19047	190	48	1	12.500	7403988
SES 25047	250	48	1	16.000	7404010
SES 35047	350	48	1	17.900	7404022

St Steel

FS Strip galvanised

End cap for screed-covered and flushfloor underfloor installation ducts.

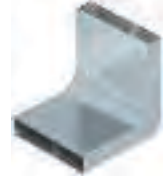
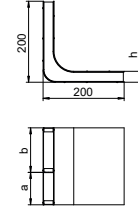
Vertical bend, two-compartment, height 48 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV2 19048	190	2	1	176.000	7400628
KV2 25048	250	2	1	215.000	7400640

St Steel

FS Strip galvanised

For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).



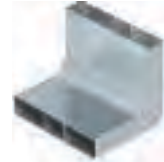
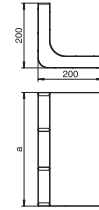
Vertical bend, three-compartment, height 48 mm

Type	Width mm	Number of compartments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV3 25048	250	3	1	233.000	7400652
KV3 35048	350	3	1	296.000	7400664

St Steel

FS Strip galvanised

For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).

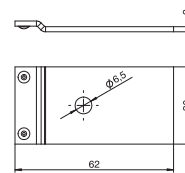


Duct connection bracket (conductive)

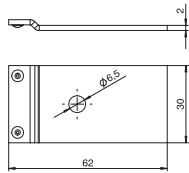
Type	Pack Piece	Weight kg/100 pc.	Item no.
VV E	20	2.800	7400980

St Steel

FS Strip galvanised



Duct connection bracket (conductive)

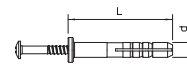


Type	Pack Piece	Weight kg/100 pc.	Item no.
VW E	20	2.800	7400980

- St** Steel
- FS** Strip galvanised

Connection brackets for the conductive connection between screed-covered duct and underfloor boxes UZD and UGD.

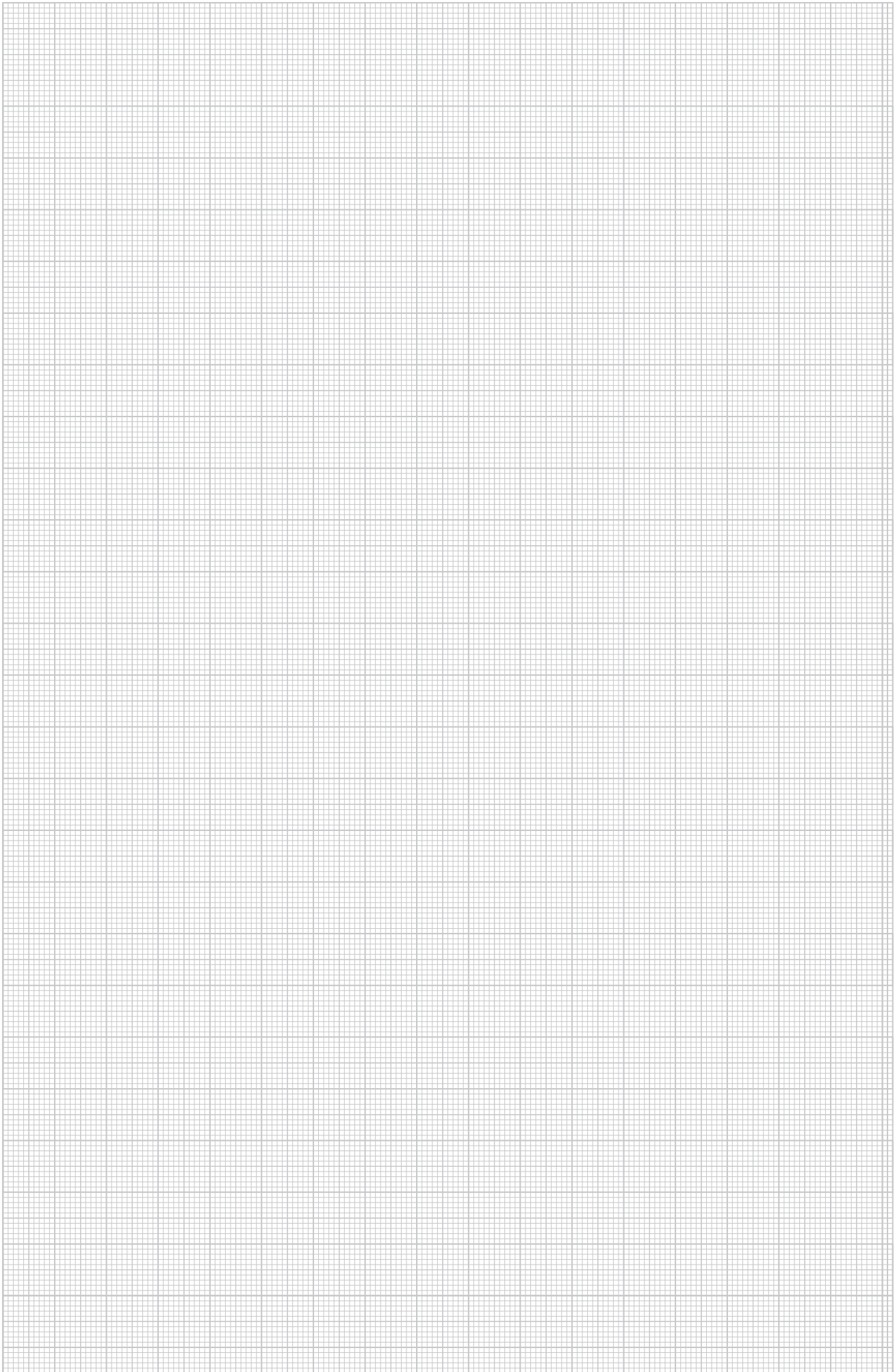
Knock-in anchor



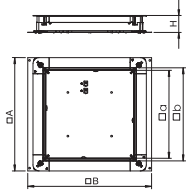
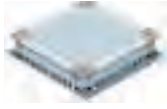
Type	Dowel Ø mm	Length mm	Pull-out force N min/concrete	Pack Piece	Weight kg/100 pc.	Item no.
910 SD 6X35	6	35	260	100	0.310	2351056
910 SD 6X40	6	40	260	100	0.555	2351064

PA Polyamide

Knock-in anchor: steel, electrogalvanised and transparently passivated.



UZD250-3 for screed height 70–125 mm

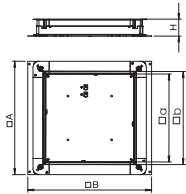


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 250-3	367	410	262	283	70 - 125	1	420.000	7410030

- St Steel
- FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls are prepared for duct widths 190 and 250 mm.

UZD250-3 for screed height 115–170 mm

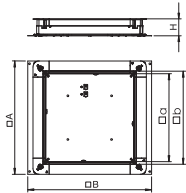


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 115170 250-3	367	410	262	283	115 - 170	1	480.000	7410043

- St Steel
- FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct width 250 mm.

UZD250-3 for screed height 165–220 mm

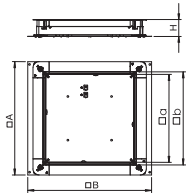
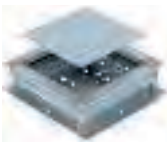


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 165220 250-3	367	410	262	283	165 - 220	1	530.000	7410052

- St Steel
- FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct width 250 mm.

UZD250-3 with pipe entry for screed height 70–125 mm

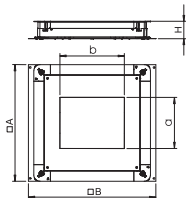


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 250-3 R	367	410	262	283	70 - 125	1	436.000	7410031

- St Steel
- FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems with pipe insertion openings M20 and M32.

UGD250-3 for rectangular installation units, for screed height 70–125 mm



Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Nominal size	Pack Piece	Weight kg/100 pc.	Item no.
UGD 250-3 4	367	410	201	201	70 - 125	4	1	594.000	7410079
UGD 250-3 6	367	410	201	253	70 - 125	6	1	584.000	7410083
UGD 250-3 9	367	410	244	244	70 - 125	9	1	580.000	7410087

- St Steel
- FS Strip galvanised

Underfloor box for direct installation of device installation units with mounting lid and lid blanking plate for screed-covered underfloor installation systems. Side walls are prepared for duct widths 190 and 250 mm.

UGD250-3 for round installation units, for screed height 70–125 mm

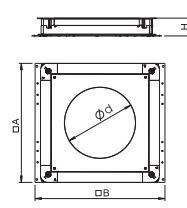
Type	Dimension A mm	Dimension B mm	Dimension d Ø mm	Screed height mm	Nominal size	Pack Piece	Weight kg/100 pc.	Item no.
UGD 250-3R4	367	410	215	70 - 125	R4	1	594.000	7410091

St Steel

FS Strip galvanised

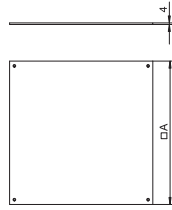
Underfloor box for direct installation of device installation units with mounting lid and lid blanking plate for screed-covered underfloor installation systems.

Side walls are prepared for duct widths 190 and 250 mm.



Blanking and mounting lids for UZD250-3

Blanking lid for UZD250-3

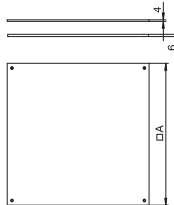
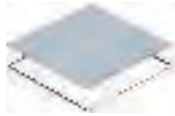


Type	Dimension A mm	Pack Piece	Weight kg/100 pc.	Item no.
DU 250-2	282	1	250.000	7400573

St Steel
FS Strip galvanised

Blanking lid for frameless end cover of the underfloor junction and branch boxes of type UZD250-3.

Blanking lid, moisture-protected, for UZD250-3

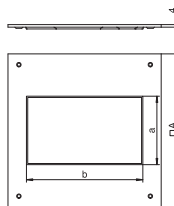


Type	Dimension A mm	Pack Piece	Weight kg/100 pc.	Item no.
DUF 250-2	282	1	250.000	7400589

St Steel
FS Strip galvanised

Blanking lid for moisture-protected, frameless end cover of the underfloor junction and branch boxes of type UZD250-3.

Mounting lid 250 for installation units of nominal size 2

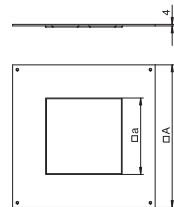


Type	Dimension A mm	Dimension a mm	Dimension b mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 2	282	105	181	1	180.000	7400455

St Steel
FS Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD250-3 for the installation of a installation unit of nominal size 2. Installation opening 3 mm recessed for later blanking lock with lid blind plate.

Mounting lid 250 for installation units of nominal size 4

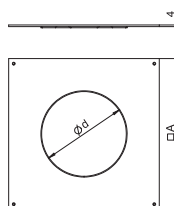


Type	Dimension A mm	Dimension a mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 4	282	201	1	121.000	7400459

St Steel
FS Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD250-3 for the installation of a installation unit of nominal size 4. Installation opening 3 mm recessed for later blanking lock with lid blind plate.

Mounting lid 250 for installation units of nominal size R4



Type	Dimension A mm	Dimension d mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 R4	282	215	1	131.000	7400471

St Steel
FS Strip galvanised

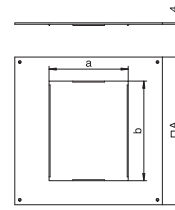
Mounting lid for underfloor junction and branch boxes of type UZD250-3 for the installation of an installation unit of nominal size R4. Installation opening 3 mm recessed as a later blanking lock with lid blind plate.

Mounting lid 250 for installation units of nominal size 6

Type	Dimension A mm	Dimension a mm	Dimension b mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 6	282	201	253	1	89.000	7400463

- St** Steel
- FS** Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD250-3 for the installation of a installation unit of nominal size 6. Installation opening 3 mm recessed for later blanking lock with lid blind plate.

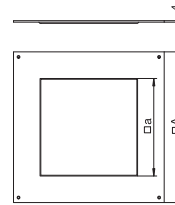


Mounting lid 250 for installation units of nominal size 9

Type	Dimension A mm	Dimension a mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 9	282	244	1	62.000	7400467

- St** Steel
- FS** Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD250-3 for the installation of a installation unit of nominal size 9. Installation opening 3 mm recessed for later blanking lock with lid blind plate.

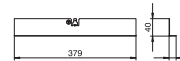


Separating retainer for UZD250-3 and UGD250-3

Type	Pack Piece	Weight kg/100 pc.	Item no.
UZD BD2	1	23.600	7428120

- St** Steel
- FS** Strip galvanised

Separating retainer for multi-compartment division of the box interior.

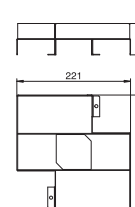


Separating element, intersection, for UZD250-3 and UGD250-3

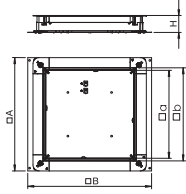
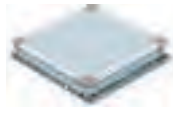
Type	Pack Piece	Weight kg/100 pc.	Item no.
UZD CC2 250250	1	73.000	7428134

- St** Steel
- FS** Strip galvanised

Separating element, three-compartment, for intersections in a UZD250-3 or UGD250-3 underfloor box, for branching-off trunking with a width of 250 mm.



UZD350-3 for screed height 70–125 mm

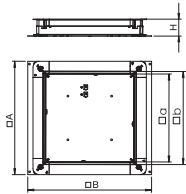


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 350-3	467	510	362	383	70 - 125	1	590.000	7410034

- St** Steel
- FS** Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct widths of 190, 250 and 350 mm.

UZD350-3 for screed height 115–170 mm

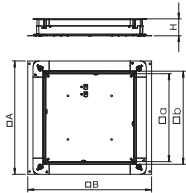
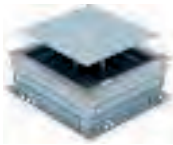


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 115170 350-3	467	510	362	383	115 - 170	1	665.000	7410047

- St** Steel
- FS** Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct widths 250 and 350 mm.

UZD350-3 for screed height 165–220 mm

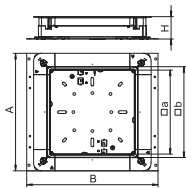
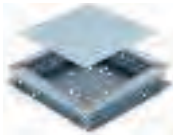


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 165220 350-3	467	510	362	383	165 - 220	1	740.000	7410056

- St** Steel
- FS** Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct widths 250 and 350 mm.

UZD350-3 with pipe entry for screed height 70–125 mm

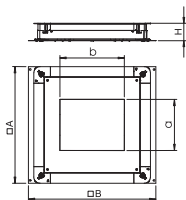


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 350-3 R	467	510	362	383	70 - 125	1	590.000	7410035

- St** Steel
- FS** Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems with pipe insertion openings M20 and M32.

UGD350-3 for rectangular installation units, for screed height 70–125 mm



Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Nominal size	Pack Piece	Weight kg/100 pc.	Item no.
UGD 350-3 4	467	510	201	201	70 - 125	4	1	910.000	7410104
UGD 350-3 6	467	510	201	253	70 - 125	6	1	898.000	7410108
UGD 350-3 9	467	510	244	244	70 - 125	9	1	895.000	7410112

- St** Steel
- FS** Strip galvanised

Underfloor box for direct installation of device installation units with mounting lid and lid blanking plate for screed-covered underfloor installation systems. Side walls prepared for duct widths of 190, 250 and 350 mm.

UGD350-3 for round installation units, for screed height 70–125 mm

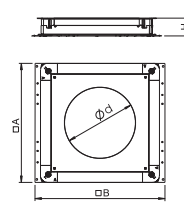
Type	Dimension A mm	Dimension B mm	Dimension d Ø mm	Screed height mm	Nominal size	Pack Piece	Weight kg/100 pc.	Item no.
UGD 350-3 R4	467	510	215	70 - 125	R4	1	910.000	7410116
UGD 350-3 R7	467	510	275	70 - 125	R7	1	887.000	7410120
UGD 350-3 R9	467	510	305	70 - 125	R9	1	880.000	7410124

St Steel

FS Strip galvanised

Underfloor box for direct installation of device installation units with mounting lid and lid blanking plate for screed-covered underfloor installation systems.

Side walls prepared for duct widths of 190, 250 and 350 mm.



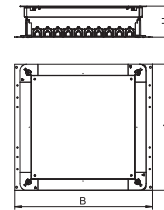
UZD/UGD 350 underfloor connection sockets

Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 170 350-3 R	467	510	362	383	115 - 170	1	600.000	7410048

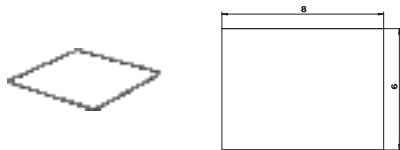
St Steel

FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems with pipe insertion openings M20 and M32.



Frame seal



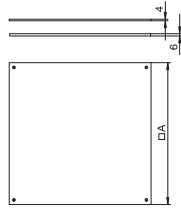
Type	Nominal size	Pack Piece	Weight kg/100 pc.	Item no.
FD 250-2	250	1	4.400	7400784
FD 350-02	350	1	4.900	7400788

MGUM Foam rubber

Frame seal as flat seal for underfloor boxes UZD/UGD.

Blanking and mounting lids for UZD350-3

Blanking lid for UZD350-3

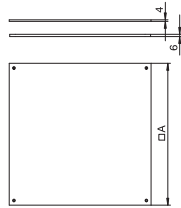
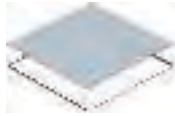


Type	Dimension A mm	Pack Piece	Weight kg/100 pc.	Item no.
DU 350-2	383	1	440.000	7400577

- St** Steel
- FS** Strip galvanised

Blanking lid for frameless end cover of the underfloor junction and branch boxes of type UZD350-3.

Blanking lid, moisture-protected, for UZD350-3

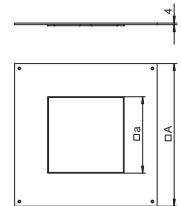


Type	Dimension A mm	Pack Piece	Weight kg/100 pc.	Item no.
DUF 350-2	383	1	466.000	7400597

- St** Steel
- FS** Strip galvanised

Blanking lid for moisture-protected, frameless end cover of the underfloor junction and branch boxes of type UZD350-3.

Mounting lid 350 for installation units of nominal size 4

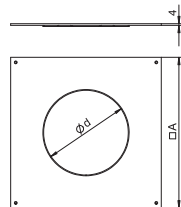


Type	Dimension A mm	Dimension a mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 4	383	201	1	320.000	7400505

- St** Steel
- FS** Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD350-3 for the installation of a installation unit of nominal size 4. Installation opening 3 mm recessed for later blanking lock with lid blanking plate.

Mounting lid 350 for installation units of nominal size R4

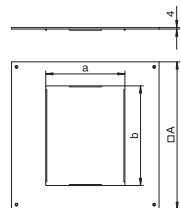


Type	Dimension A mm	Dimension d mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 R4	383	215	1	335.000	7400517

- St** Steel
- FS** Strip galvanised

Mounting lid for underfloor junction and branch boxes of type UZD350-2 for the installation of an installation unit of nominal size R4. Installation opening 3 mm recessed as a later blanking lock with lid blanking plate.

Mounting lid 350 for installation units of nominal size 6



Type	Dimension A mm	Dimension a mm	Dimension b mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 6	383	201	253	1	290.000	7400509

- St** Steel
- FS** Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD350-3 for the installation of a installation unit of nominal size 6. Installation opening 3 mm recessed for later blanking lock with lid blanking plate.

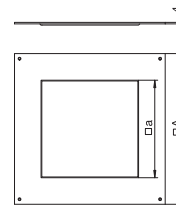
Mounting lid 350 for installation units of nominal size 9

Type	Dimen-	Dimen-	Pack	Weight	Item no.
	sion A	sion a			
	mm	mm	Piece	kg/100 pc.	
DUG 350-3 9	383	244	1	267.000	7400513

St Steel

FS Strip galvanised

Mounting lid for underfloor junction and branch box of type UZD350-3 for the installation of an installation unit of nominal size 9. Installation opening 3 mm recessed for later blanking lock with lid blanking plate.



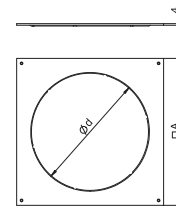
Mounting lid 350 for installation units of nominal size R9

Type	Dimen-	Dimen-	Pack	Weight	Item no.
	sion A	sion d Ø			
	mm	mm	Piece	kg/100 pc.	
DUG 350-3 R9	383	305	1	230.000	7400549

St Steel

FS Strip galvanised

Mounting lid for underfloor junction and branch boxes of type UZD350-3 for the installation of an installation unit of nominal size R9. Installation opening 3 mm recessed as a later blanking lock with lid blanking plate.



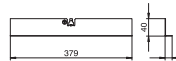
Separating retainers for UZD350-3 and UGD350-3

Type	Pack	Weight	Item no.
UZD BD3	1	32.200	7428122

St Steel

FS Strip galvanised

Separating retainer for three-compartment division of the box interior.



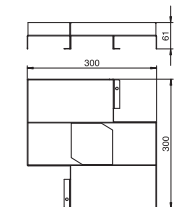
Separating element, intersection, for UZD350-3 and UGD350-3

Type	Pack	Weight	Item no.
UZD CC3 350350	1	115.000	7428136

St Steel

FS Strip galvanised

Separating element, three-compartment, for intersections in a UZD350-3 or UGD350-3 underfloor box, for branching-off ducts with a width of 350 mm.



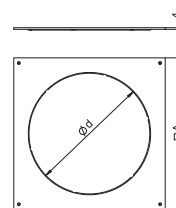
Mounting lid 350 for installation units of nominal size R7

Type	Dimen-	Dimen-	Pack	Weight	Item no.
	sion A	sion d Ø			
	mm	mm	Piece	kg/100 pc.	
DUG 350-3 R7	383	275	1	260.000	7400533

St Steel

FS Strip galvanised

Mounting lid for underfloor junction and branch boxes of type UZD350-3 for the installation of an installation unit of nominal size R7. Installation opening 3 mm recessed as a later blanking lock with lid blanking plate.









EÜK-SN screed-covered duct system

The EÜK-SN screed-covered duct system from Ackermann made by OBO is the ideal electrical installation system for large areas with fixed furnishing plans, for example in office or administration buildings. Duct sections and underfloor boxes form a tight grid, hidden in the screed, for cable routing. When combined with device installation units, access is given to power, data and multimedia technology.

Single-compartment PVC duct systems, multi-compartment metal ducts and installation pipes are suitable for cable routing beneath screed layers.

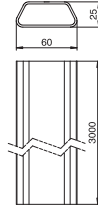
OBO
BETTERMANN

EÜK-SN screed-covered duct system

	PVC duct system, duct height 25 mm	230
	PVC duct system, Duct height 35 mm	231
	Underfloor connection box for PVC ducts, self-levelling	232
	Underfloor connection box, for metal duct and installation pipe, self-levelling	235

PVC duct system, duct height 25 mm

EÜK PVC underfloor installation duct, duct height 25 mm



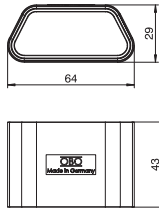
Type	Trunking			Number of compartments	Cross-section draw area mm ²	Pack m	Weight kg/100 m	Item no.
	Width mm	height mm	Length mm					
DU 6025	60	25	3000	1	1030	3	43.000	7425900

PVC Polyvinylchloride

Trapezoidal duct, one-compartment, for use in cement screeds and under false floors.

An important precondition for correct underfloor installation is the screed structure. In the case of a screed-covered system, it is important that the screed thickness above the duct has a sufficiently high load capacity.

EÜK duct connector

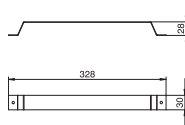


Type	Trunking		Pack Piece	Weight kg/100 pc.	Item no.
	Width mm	height mm			
DUC 6025	60	25	50	1.698	7425910

PVC Polyvinylchloride

Coupling element for connecting one-compartment PVC duct lengths with a trapezoid-shaped cross-section.

EÜK fastening clamp



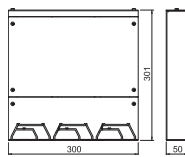
Type	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FS Strip galvanised

Fixing strap for three neighbouring 1-compartment PVC duct lengths of width 60 mm.

EÜK vertical connection socket



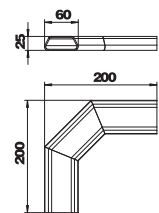
Type	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FS Strip galvanised

Vertically mountable connection socket for up to three PVC ducts of heights 25 mm and 35 mm.

EÜK horizontal bend

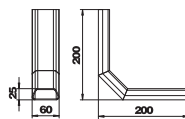


Type	Trunking		Pack Piece	Weight kg/100 pc.	Item no.
	Width mm	height mm			
KH DU 6025 90	60	25	1	10.400	7425920

PVC Polyvinylchloride

Horizontal bend, 90°, suitable for duct size 60x25.

EÜK vertical bend



Type	Trunking		Pack Piece	Weight kg/100 pc.	Item no.
	Width mm	height mm			
KV DU 6025 90	60	25	1	13.000	7425935

PVC Polyvinylchloride

Vertical bend, 90°, suitable for duct size 60x25.

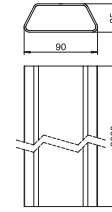
EÜK PVC underfloor installation duct, duct height 35 mm

Type	Width mm	Trunking height mm	Length mm	Number of compart- ments St.	Cross- section draw a mm ²	Pack m	Weight kg/100 m	Item no.
DU 9035	90	35	3000	1	2305	3	58.000	7425902

PVC Polyvinylchloride

Trapezoidal duct, one-compartment, for use in cement screeds and under false floors.

An important precondition for correct underfloor installation is the screed structure. In the case of a screed-covered system, it is important that the screed thickness above the duct has a sufficiently high load capacity.

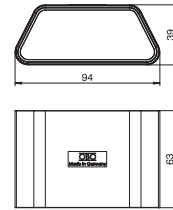


Duct connector

Type	Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
DUC 9035	90	35	50	3.525	7425912

PVC Polyvinylchloride

Coupling element for connecting one-compartment PVC duct lengths with a trapezoid-shaped cross-section.



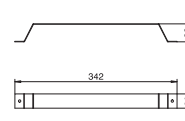
Mounting bracket

Type	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
DC9035	35	10	10.000	7428340

St Steel

FS Strip galvanised

Fixing strap for three neighbouring 1-compartment PVC duct lengths of width 90 mm.



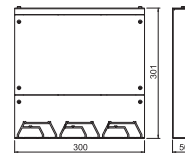
EÜK vertical connection socket

Type	Pack Piece	Weight kg/100 pc.	Item no.
VAB DU 6090	1	220.800	7428325

St Steel

FS Strip galvanised

Vertically mountable connection socket for up to three PVC ducts of heights 25 mm and 35 mm.

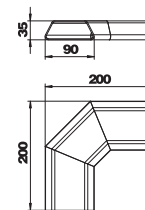


EÜK horizontal bend

Type	Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
KH DU 9035 90	90	35	1	15.500	7425925

PVC Polyvinylchloride

Horizontal bend, 90°, suitable for duct size 90x35.

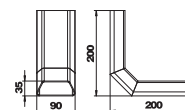


EÜK vertical bend

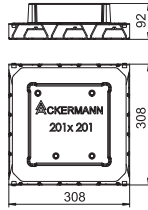
Type	Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
KV DU 9035 90	90	35	1	19.200	7425940

PVC Polyvinylchloride

Vertical bend, 90°, suitable for duct size 90x35.



Underfloor box UDS4 for PVC duct

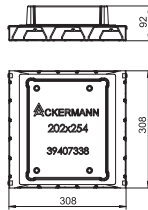
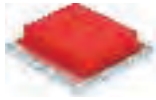


Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSPD 9035 4	65 - 90	1	246.000	7400348

- St** Steel
- FS** Strip galvanised

Underfloor outlet box with fixed, unchangeable 201 x 201 mm installation opening for an installation unit of nominal size 4. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for three single-compartment PVC ducts of nominal size 60 x 25 and 90 x 35 on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.

Underfloor box UDS6 for PVC duct

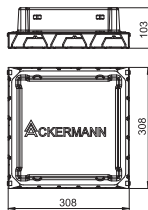


Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSPD 9035 6	65 - 90	1	231.000	7400350

- St** Steel
- FS** Strip galvanised

Underfloor outlet box with fixed, unchangeable 202 x 254 mm installation opening for an installation unit of nominal size 6. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for three single-compartment PVC ducts of nominal size 60 x 25 and 90 x 35 on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.

Underfloor box UDS9 for PVC duct

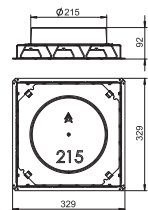


Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSPD 9035 9	65 - 100	1	225.000	7400352

- St** Steel
- FS** Strip galvanised

Underfloor outlet box with fixed, unchangeable 244 x 244 mm installation opening for an installation unit of nominal size 9. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for three single-compartment PVC ducts of nominal size 60 x 25 and 90 x 35 on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 100 mm.

Underfloor box UDSR4 for PVC duct



Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSPD 9035 R4	65 - 90	1	217.000	7400354

- St** Steel
- FS** Strip galvanised

Underfloor outlet box with fixed, unchangeable installation opening of $\varnothing 215$ mm for an installation unit of nominal size R4. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for three single-compartment PVC ducts of nominal size 60 x 25 and 90 x 35 on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.

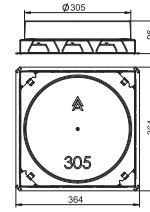
Underfloor box UDSR9 for PVC duct

Type	Screed height mm	Pack Piece	Weight		Item no.
			kg/100 pc.		
UDSPD 9035 R9	65 - 95	1	236.000		7400358

St Steel

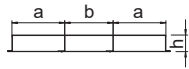
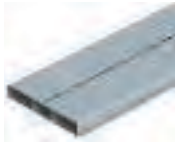
FS Strip galvanised

Underfloor outlet box with fixed, unchangeable installation opening of \varnothing 305 mm for an installation unit of nominal size R9. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for three single-compartment PVC ducts of nominal size 60 x 25 and 90 x 35 on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 95 mm.



Metallic duct system, duct height 38 mm

Underfloor installation duct, 3-compartment



Type	Width mm	Length mm	Number of compart- ments St.	Pack m	Weight kg/100 m	Item no.
S3 25038	250	2000	3	2	466.000	7400328

St Steel

FS Strip galvanised

Underfloor installation duct for laying cables under the floor.

Connection shackle, height 38 mm



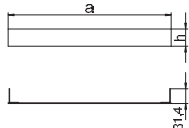
Type	Dimension a mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
VL 25038E	250	38	1	33.100	7400968

St Steel

FS Strip galvanised

Duct connectors for conductive mounting of screed-covered underfloor installation duct.

Duct end closure piece



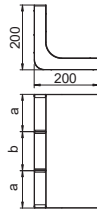
Type	Dimension a mm	Dimen- sion h mm	Pack Piece	Weight kg/100 pc.	Item no.
SES 25037	250	37	1	11.700	7400406

St Steel

FS Strip galvanised

End cap for screed-covered and flushfloor underfloor installation ducts.

Vertical bend, three-compartment, height 38 mm



Type	Width mm	Number of compart- ments St.	Pack Piece	Weight kg/100 pc.	Item no.
KV3 25038	250	3	1	223.000	7400648

St Steel

FS Strip galvanised

For vertical direction changes of screed-covered underfloor installation ducts (wall connections, supplies).

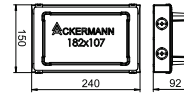
Underfloor box UGE2 for installation pipe and metal duct

Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UGE 2C	70 - 90	1	74.100	7428062

St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable 106 x 182 mm installation opening for an installation unit of nominal size 2. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box has two openings for M20 conduit on the narrow sides. The underfloor box is suitable for screed floor constructions with height 70 mm up to 90 mm.



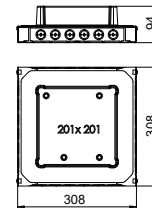
Underfloor box UDS4 for installation pipe and metal duct

Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSSD 25038 4	65 - 90	1	277.400	7400349

St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable 201 x 201 mm installation opening for an installation unit of nominal size 4. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for a 2 or 3-compartment sheet steel underfloor duct of nominal size 25038 as well as six M20 or M25 installation pipes on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.



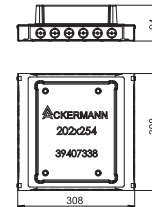
Underfloor box UDS6 for installation pipe and metal duct

Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSSD 25038 6	65 - 90	1	232.000	7400351

St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable 202 x 254 mm installation opening for an installation unit of nominal size 6. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for a 2 or 3-compartment sheet steel underfloor duct of nominal size 25038 as well as six M20 or M25 installation pipes on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.



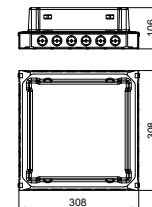
Underfloor box UDS9 for installation pipe and metal duct

Type	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDSSD 25038 9	65 - 100	1	226.000	7400353

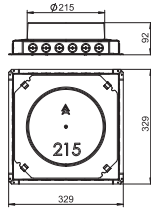
St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable 244 x 244 mm installation opening for an installation unit of nominal size 9. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for a 2 or 3-compartment sheet steel underfloor duct of nominal size 25038 as well as six M20 or M25 installation pipes on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.



Underfloor box UDSR4 for installation pipe and metal duct



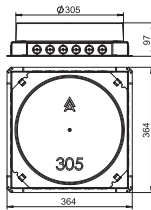
Type	Dimension d	Screed height	Pack Piece	Weight kg/100 pc.	Item no.
UDSSD 25038 R4	215	65 - 90	1	224.500	7400355

St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable installation opening of \varnothing 215 mm for an installation unit of nominal size R4. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for a 2 or 3-compartment sheet steel underfloor duct of nominal size 25038 as well as six M20 or M25 installation pipes on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 90 mm.

Underfloor box UDSR9 for installation pipe and metal duct



Type	Dimension d	Screed height	Pack Piece	Weight kg/100 pc.	Item no.
UDSSD 25038 R9	305	65 - 95	1	229.000	7400359

St Steel

FS Strip galvanised

Underfloor outlet box with fixed, unchangeable installation opening of \varnothing 305 mm for an installation unit of nominal size R9. The mounting opening is created using the screed protection cover contained in the scope of supply. The underfloor box possesses installation openings for a 2 or 3-compartment sheet steel underfloor duct of nominal size 25038 as well as six M20 or M25 installation pipes on all four sides. The box is principally suited for use in floor structures in cement screed with a structure height of up to 95 mm.

Protective conductor connection bracket

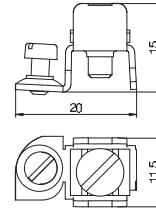
Type	Pack Piece	Weight kg/100 pc.	Item no.
8AWR	10	0.610	6288704

- St Steel
- G Electrogalvanised

Protective conductor connection bracket to include steel and aluminium device installation trunking, service poles and system components of underfloor trunking systems in the protective measure.

Clamping area: 2 x 1.5 – 4 mm²

If there is a fault, metallic parts will carry voltage. Tighten the contact screw with at least 1.2 Nm or ensure the contact with mechanical work.



Separating retainer, intersection, for UDS

Type	Pack Piece	Weight kg/100 pc.	Item no.
UDS 9 C3	1	58.000	7428336

- St Steel
- FS Strip galvanised

Separating retainer, 3-compartment, for intersection in a UDS underfloor box.

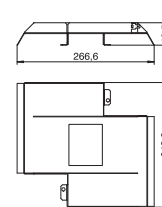


Separating retainer UZE/UGE/UDS

Type	Pack Piece	Weight kg/100 pc.	Item no.
UZE 9 C3	1	10.000	7428330

- St Steel
- FS Strip galvanised

Separating element, three-compartment, in a UZE underfloor box.








OKA-T Flush floor trunking systems

The open, screed-flush OKA-T trunking system is used for cable routing and the installation of electrical resources in the underfloor area. The trunking system is closed on all sides. It can be opened along the entire length.

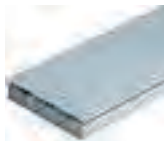




OKA-T Flush floor trunking systems

	OKA-T installation trunking, width 300 mm	240
	OKA-T installation trunking, width 400 mm	242
	Service outlet	244

Trunking unit, blank, height 65 mm



Type	Length mm	Width mm	Height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA-T 30065	2400	300	65	1	2,989.200	7402223

- St** Steel
- FS** Strip galvanised

3 compartment flush floor trunking with 3 blind lids. Trunking unit consists of trunking connectors, fixing brackets and separating retainers.

Trunking unit for GES9, height 65 mm



Type	Length mm	Width mm	Height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA-T 30065 D9	2400	300	65	1	2,531.500	7402224

- St** Steel
- FS** Strip galvanised

3 compartment flush floor trunking with 3 mounting lids for GES9. Trunking unit consists of trunking connectors, fixing brackets and separating retainers.

OKA-T trunking cover, blank

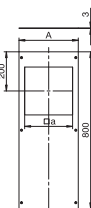


Type	Dimen- sion A mm	Width mm	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
OKAT D 300	303	300	800	1	570.000	7402535

- St** Steel
- FS** Strip galvanised

Trunking cover for flushfloor OKA-T trunking system, blind version.

OKA-T trunking cover with GES9 mounting opening

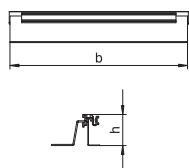


Type	Dimen- sion A mm	Dimension a mm	Width mm	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
OKAT DG 9 300	303	244	300	800	1	430.000	7402549

- St** Steel
- FS** Strip galvanised

Trunking cover for flushfloor OKA-T trunking system with installation opening for installation units of nominal size 9.

OKA-T 90° branch for trunking width 300 mm

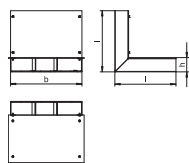
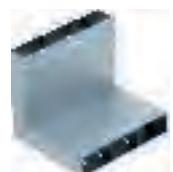


Type	Dimen- sion A mm	Dimen- sion b mm	Dimen- sion h mm	Trunking Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA B30065	303	65	300	65	65	1	34.800	7402304

- St** Steel
- FS** Strip galvanised

90° branch for a flushfloor OKA-T trunking system, consisting of an end cap and connection brackets.

OKA-T vertical bend



Type	Trunking Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA RB3 30065	300	65	1	501.000	7402420

- St** Steel
- FS** Strip galvanised

For vertical direction change of 3-compartment flushfloor OKA-T trunking system (wall connections, supplies).

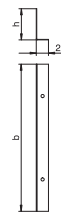
OKA-T trunking end piece

Type	Dimension h mm	Width mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA E30065	64	300	65	1	20.500	7402364

St Steel

FS Strip galvanised

End cap for flushfloor OKA-T trunking system, consisting of an L-shaped bracket.



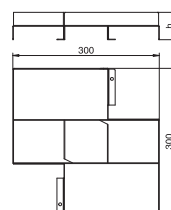
OKA-T separating element, intersection for trunking width 300 mm with 300 mm

Type	Dimension h mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
OKA CC3 30030065	61	65	1	112.500	7404340

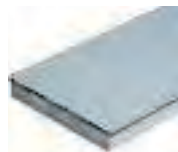
St Steel

FS Strip galvanised

Separating element for a three-compartment cross branch of OKA-T flushfloor trunking systems of width 300 mm.



Trunking unit, blank, height 65 mm



Type	Length	Width	Height	Pack	Weight	Item no.
	mm	mm	mm			
OKA-T 40065	2400	400	65	1	3,744.700	7402225

- St** Steel
- FS** Strip galvanised

3 compartment flush floor trunking with 3 blind lids. Trunking unit consists of trunking connectors, fixing brackets and separating retainers.

Trunking unit for GES9, height 65 mm



Type	Length	Width	Height	Pack	Weight	Item no.
	mm	mm	mm			
OKA-T 40065 D9	2400	400	65	1	3,287.000	7402226

- St** Steel
- FS** Strip galvanised

3 compartment flush floor trunking with 3 mounting lids for GES9. Trunking unit consists of trunking connectors, fixing brackets and separating retainers.

OKA-T trunking cover, blank

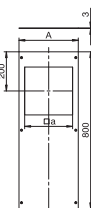


Type	Dimension A	Width	Length	Pack	Weight	Item no.
	mm	mm	mm			
OKAT D 400	403	400	800	1	760.000	7402539

- St** Steel
- FS** Strip galvanised

Trunking cover for flushfloor OKA-T trunking system, blind version.

OKA-T trunking cover with GES9 mounting opening

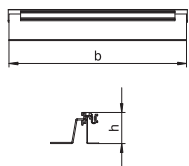


Type	Dimension A	Dimension a	Width	Length	Pack	Weight	Item no.
	mm	mm	mm	mm			
OKAT DG 9 400	403	244	400	800	1	620.000	7402553

- St** Steel
- FS** Strip galvanised

Trunking cover for flushfloor OKA-T trunking system with installation opening for installation units of nominal size 9.

OKA-T 90° branch for trunking width 400 mm

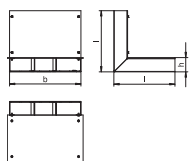
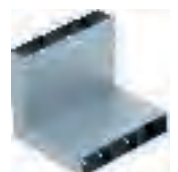


Type	Dimension A	Dimension b	Dimension a	Dimension h	Trunking width	Trunking height	Pack	Weight	Item no.
	mm	mm	mm	mm	mm	mm			
OKA B40065	403	65	400	65	400	65	1	42.700	7402320

- St** Steel
- FS** Strip galvanised

90° branch for a flushfloor OKA-T trunking system, consisting of an end cap and connection brackets.

OKA-T vertical bend



Type	Trunking width	Trunking height	Pack	Weight	Item no.
	mm	mm			
OKA RB3 40065	400	65	1	639.000	7402436

- St** Steel
- FS** Strip galvanised

For vertical direction change of 3-compartment flushfloor OKA-T trunking system (wall connections, supplies).

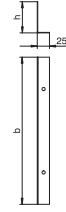
OKA-T trunking end piece

Type	Trunking		Pack Piece	Weight kg/100 pc.	Item no.
	Width mm	height mm			
OKA E40065	400	65	1	27.300	7402380

St Steel

FS Strip galvanised

End cap for flushfloor OKA-T trunking system, consisting of an L-shaped bracket.



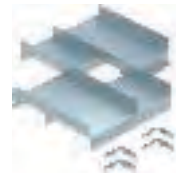
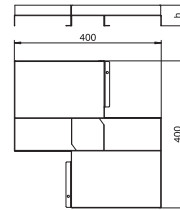
OKA-T separating element, intersection for trunking width 400 mm with 400 mm

Type	Dimension h mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FS Strip galvanised

Separating element for a three-compartment cross branch of flushfloor OKA/T trunking systems of width 400 mm.



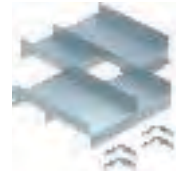
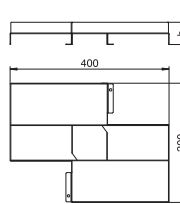
OKA-T separating element, intersection for trunking width 400 mm with 300 mm

Type	Dimension h mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FS Strip galvanised

Separating element for a three-compartment cross branch of flushfloor OKA/T trunking systems of width 300 mm.



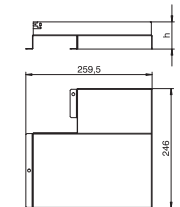
OKA-T separating element, T branch for trunking width 400 mm with 400 mm

Type	Dimension h mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FS Strip galvanised

Separating element for a three-compartment T branch in an OKA-T flushfloor trunking system for branching trunking of width 400 mm.



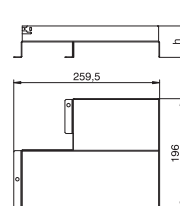
OKA-T separating element, T branch for trunking width 400 mm with 300 mm

Type	Dimension h mm	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.

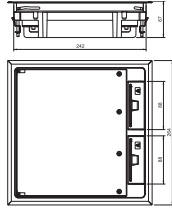
St Steel

FS Strip galvanised

Separating element for a three-compartment T branch in an OKA-T flushfloor trunking system for branching trunking of width 300 mm.



GES9/10 service outlet for OKA-T, 3-compartment

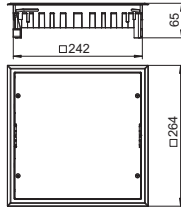


Type	Colour	Floor covering thickness mm	Pack	Weight	Item no.
			Piece	kg/100 pc.	
GES9 10OK U 7011	Iron grey	10	1	211.000	7402290

PA Polyamide

Service outlet with handle clamp for mounting in a OKA-T trunking system. With mounting support for receiving up to three APMT5 cover plates.

ZES9 inspection cover

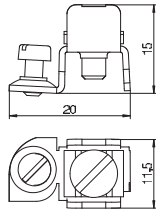


Type	Colour	Floor covering thickness mm	Pack	Weight	Item no.
			Piece	kg/100 pc.	
ZES9-2 U10T 7011	Iron grey	10	1	206.300	7406672

PA Polyamide

Junction box insert for blank closing of a square mounting opening of nominal size 9 in an under-floor duct or trunking system or in raised floor. Polyamide floor covering profile. Recess is 5 mm, if necessary, adjustable to 3, 8 or 10 mm.

Protective conductor connection bracket



Type	Pack	Weight	Item no.
		Piece	
8AWR	10	0.610	6288704

St Steel

G Electrogalvanised

Protective conductor connection bracket to include steel and aluminium device installation trunking, service poles and system components of underfloor trunking systems in the protective measure.

Clamping area: 2 x 1.5 – 4 mm²

If there is a fault, metallic parts will carry voltage. Tighten the contact screw with at least 1.2 Nm or ensure the contact with mechanical work.

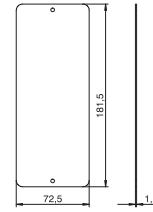
Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 0	Grey-white	181.5	20	12.700	7406904

St Steel

FSO Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.



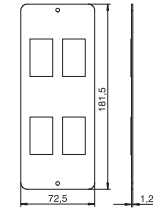
Cover plate APMT5/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 1	Grey-white	181.5	20	12.700	7406908

St Steel

FSO Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.



Cover plate APMT5 with single socket

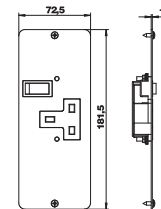
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS SS0	Grey-white	181.5	4	18.700	7407874

St Steel

FSO Strip galvanised/organically coated

Cover plate with a switched single socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



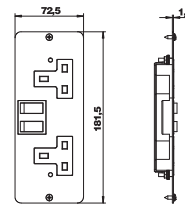
Cover plate APMT5 with double socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS 2SS0	Grey-white	181.5	4	23.200	7407870

St Steel

FSO Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

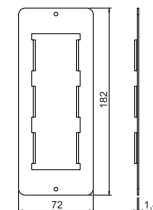


Cover plate APMT5/10

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 10	—	181.5	20	11.600	7406894

St Steel

Cover plate for installation of 3 Modul 45 devices.
L = 181.5 mm.



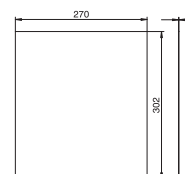
Mounting protection lid OKAT DG 9

Type	Pack Piece	Weight kg/100 pc.	Item no.
OKAT DG 9	1	64.200	7402587

St Steel

FS Strip galvanised

Protective mounting lid für flushfloor OKA-T trunking system with installation opening for installation unit.





RFT raised floor trunking system

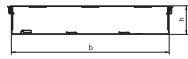
Raised floor trunking systems are suitable for routing electrical cables beneath raised floor plates. The trunking is used either for cable routing or routing cables for connection to service outlets. Depending on the version, the trunking is available in the widths 225, 300 and 450 mm, and the height 40 mm.

OBO
BETTERMANN

RFT raised floor trunking system

	RFT trunking system, width 225 mm	248
	RFT trunking system, width 300 mm	250
	Service outlet	252
	Service outlet	254
	Mounting support and cover plate	254

Trunking unit with cable outlet M25



Type	Length	Width	Height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm	mm			
RFT 225 40	2400	225	40	1	1,019.500	7428193

- St** Steel
- FS** Strip galvanised

The raised floor trunking can be used for routing cables underneath raised floor panels. Retaining straps permit the self-contacting mounting of separating retainers.

Included in the delivery are one trunking base, four trunking covers and eight locking brackets. Two trunking covers have three M25 pipe entry openings. Two trunking covers are completely closed. Separating retainers should be ordered separately.

RFT trunking cover

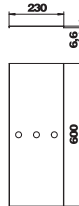


Type	Width	Length	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
OT RFT 225 1	225	600	1	113.300	7428181

- St** Steel
- FS** Strip galvanised

System cover for raised floor trunking without knock-outs.

RFT trunking cover, with knock-out

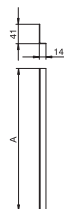


Type	Width	Length	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
OT KO RFT 225 1	225	600	1	120.000	7428186

- St** Steel
- FS** Strip galvanised

System cover for raised floor trunking with 3 breakable openings, M25, for flexible installation hoses.

RFT end piece

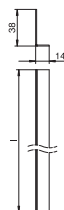


Type	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm			
ES RFT 225 40	40	1	9.430	7428224

- St** Steel
- FS** Strip galvanised

For closing of a raised floor trunking system.

RFT separating retainer

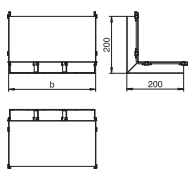


Type	Dimension b	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
TW RFT 2400	2400	40	1	88.000	7428305

- St** Steel
- FS** Strip galvanised

Separating retainer for multi-draw division of a raised floor trunking. Self-contacting on mounting in the trunking base.

RFT vertical access box



Type	Dimension b	Trunking width	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm	mm			
VAB RFT 225	225	225	40	1	179.500	7428314

- St** Steel
- FS** Strip galvanised

Connection unit for one raised floor trunking system.

RFT separating element 225

Type	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
RFT C 225225	40	1	50.400	7428397

- St Steel
- BK Bright

Separating retainer to separate cables in raised floor trunking of size 225, in the case of a branch with a raised floor trunking of size 225.

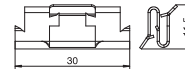


RFT trunking clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
RK RFT	100	0.310	7428446

- St Steel

For self-contacting cover installation on raised floor trunking bases.

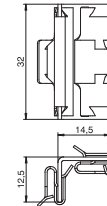


RFT trunking connector

Type	Pack Piece	Weight kg/100 pc.	Item no.
RFT CB	20	1.300	7428228

- St Steel
- FS Strip galvanised

Trunking connector for mechanical and electrical connection of raised floor trunking bases.



Protective conductor connection bracket

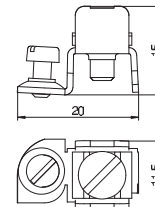
Type	Pack Piece	Weight kg/100 pc.	Item no.
8AWR	10	0.610	6288704

- St Steel
- G Electrogalvanised

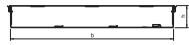
Protective conductor connection bracket to include steel and aluminium device installation trunking, service poles and system components of underfloor trunking systems in the protective measure.

Clamping area: 2 x 1.5 – 4 mm²

If there is a fault, metallic parts will carry voltage. Tighten the contact screw with at least 1.2 Nm or ensure the contact with mechanical work.



Trunking unit with cable outlet M25



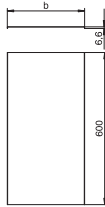
Type	Length	Width	Height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm	mm			
RFT 300 40	2400	300	40	1	1,301.100	7428195

- SI** Steel
- FS** Strip galvanised

The raised floor trunking can be used for routing cables underneath raised floor panels. Retaining straps permit the self-contacting mounting of separating retainers.

Included in the delivery are one trunking base, four trunking covers and eight locking brackets. Two trunking covers have three M25 pipe entry openings. Two trunking covers are completely closed. Separating retainers should be ordered separately.

RFT trunking cover, blank

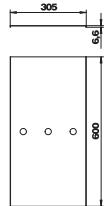


Type	Width	Length	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
OT RFT 300 1	300	600	1	148.200	7428188

- SI** Steel
- FS** Strip galvanised

System cover for raised floor trunking without knock-outs.

RFT trunking cover, with knock-out

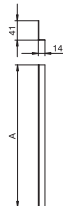


Type	Width	Length	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
OT KO RFT 300 1	300	600	1	147.100	7428216

- SI** Steel

System cover for raised floor trunking with 3 breakable openings, M25, for flexible installation hoses.

RFT end piece

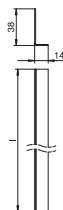


Type	Width	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
ES RFT 300 40	300	40	1	12.560	7428222

- SI** Steel
- FS** Strip galvanised

For closing of a raised floor trunking system.

RFT separating retainer

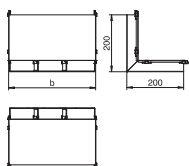
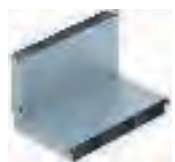


Type	Dimension	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm			
TW RFT 2400	2400	40	1	88.000	7428305

- SI** Steel
- FS** Strip galvanised

Separating retainer for multi-draw division of a raised floor trunking. Self-contacting on mounting in the trunking base.

RFT vertical access box



Type	Dimension b	Width	Trunking height	Pack Piece	Weight kg/100 pc.	Item no.
	mm	mm	mm			
VAB RFT 300	300	300	40	1	165.100	7428317

- SI** Steel
- FS** Strip galvanised

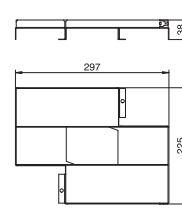
Connection unit for one raised floor trunking system.

RFT separating element 300 to 225

Type	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
RFT C 300225	40	1	50.100	7428400

- St** Steel
- FS** Strip galvanised

Separating retainer to separate cables in raised floor trunking of size 300, in the case of a branch with a raised floor trunking of size 225.

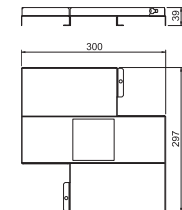


RFT separating element 300

Type	Trunking height mm	Pack Piece	Weight kg/100 pc.	Item no.
RFT C 300300	40	1	85.700	7428401

- St** Steel
- BK** Bright

Separating retainer to separate cables in raised floor trunking of size 300, in the case of a branch with a raised floor trunking of size 300.

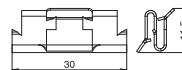


RFT trunking clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
RK RFT	100	0.310	7428446

- St** Steel

For self-contacting cover installation on raised floor trunking bases.

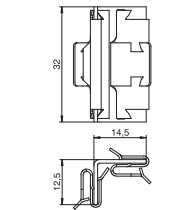


RFT trunking connector

Type	Pack Piece	Weight kg/100 pc.	Item no.
RFT CB	20	1.300	7428228

- St** Steel
- FS** Strip galvanised

Trunking connector for mechanical and electrical connection of raised floor trunking bases.



Protective conductor connection bracket

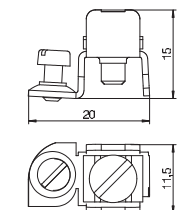
Type	Pack Piece	Weight kg/100 pc.	Item no.
8AWR	10	0.610	6288704

- St** Steel
- G** Electro galvanised

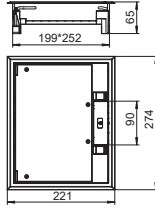
Protective conductor connection bracket to include steel and aluminium device installation trunking, service poles and system components of underfloor trunking systems in the protective measure.

Clamping area: 2 x 1.5 – 4 mm²

If there is a fault, metallic parts will carry voltage. Tighten the contact screw with at least 1.2 Nm or ensure the contact with mechanical work.



GES6 service outlet with locking slider



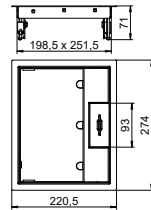
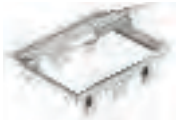
Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES6-2U10T 7011	Iron grey	10	1	138.000	7405321
GES6-2U10T 9011	Graphite black	10	1	138.000	7405322
GES6-2U10T 1019	Grey-beige	10	1	138.000	7405323

PA Polyamide

Service outlet with locking slider, 3-compartment, for the installation of MT6 mounting support. Three type APMT2 cover plates can be installed.

Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 3, 8 or 10 mm.

GES6M-2 service outlet with handle clamp

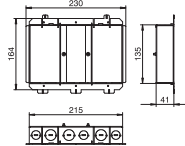


Type	Material	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES6M-2 10U	A2	10	1	320.000	7405299

A2 Stainless steel, rustproof 1.4301

Service outlet with handle clamp, 3-compartment, for the installation of MT6 mounting support. Three type APMT2 cover plates can be installed.

Mounting support for GES6



Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 6 DB AP2	1	56.000	7428230

St Steel

FS Strip galvanised

Enclosed mounting support for receiving 3 APMT2 cover plates. The mounting support is fastened below the GES6 service outlet. Each with 6 knock-out openings M20 and M25 for the mounting of flexible installation hoses.

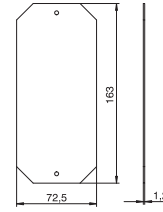
Cover plate APMT2/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 0	Grey-white	163	20	12.300	7406912

St Steel

FSO Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 163 mm.



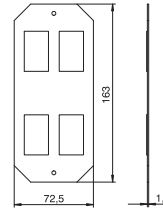
Cover plate APMT2/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 1	Grey-white	163	20	11.100	7406916

St Steel

FSO Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 163 mm.



Cover plate APMT2 with double socket

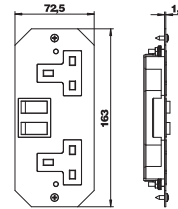
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2SS0	Grey-white	163	4	21.500	7407872

St Steel

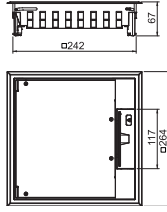
FSO Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



GES9-3B service outlet with handle clamp

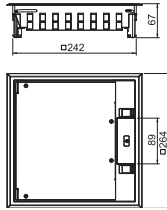


Type	Colour	Pack	Weight	Item no.
		Piece	kg/100 pc.	
GES9-3B U 7011	Iron grey	1	205.000	7405077
GES9-3B U 9011	Graphite black	1	205.000	7405079
GES9-3B U 1019	Grey-beige	1	205.000	7405081

PA Polyamide

Service outlet with handle clamp, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 10 mm.

GES9-3S service outlet with locking slider

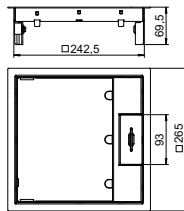


Type	Colour	Pack	Weight	Item no.
		Piece	kg/100 pc.	
GES9-3S U 7011	Iron grey	1	199.500	7405083
GES9-3S U 9011	Graphite black	1	199.500	7405085
GES9-3S U 1019	Grey-beige	1	199.500	7405087

PA Polyamide

Service outlet with locking slider, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 10 mm.

GES9M-2 service outlet with handle clamp

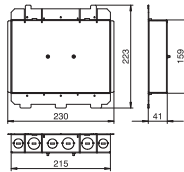


Type	Material	Floor covering thickness	Pack	Weight	Item no.
		mm	Piece	kg/100 pc.	
GES9M-2 10U	A2	10	1	360.000	7405371

A2 Stainless steel, rustproof 1.4301

Service outlet with handle clamp, 3-compartment, for the installation of MT9 mounting support. 3 type APMT5 cover plates can be installed.

Mounting support for GES9



Type	Material	Pack	Weight	Item no.
		Piece	kg/100 pc.	
MT 9 DB AP 5	SI Steel	1	72.800	7428235

FS Strip galvanised

Enclosed mounting support for receiving 3 APMT5 cover plates. The mounting support is fastened below the GES9 service outlet. Each with 6 knock-out openings M20 and M25 for the mounting of flexible installation hoses.

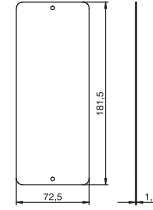
Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FSO Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.



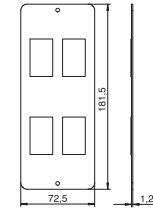
Cover plate APMT5/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FSO Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.



Cover plate APMT5 with single socket

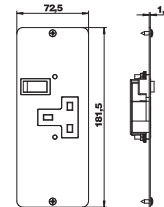
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FSO Strip galvanised/organically coated

Cover plate with a switched single socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



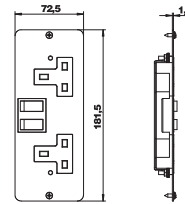
Cover plate APMT5 with double socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

FSO Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

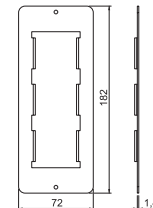


Cover plate APMT5/10

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.

St Steel

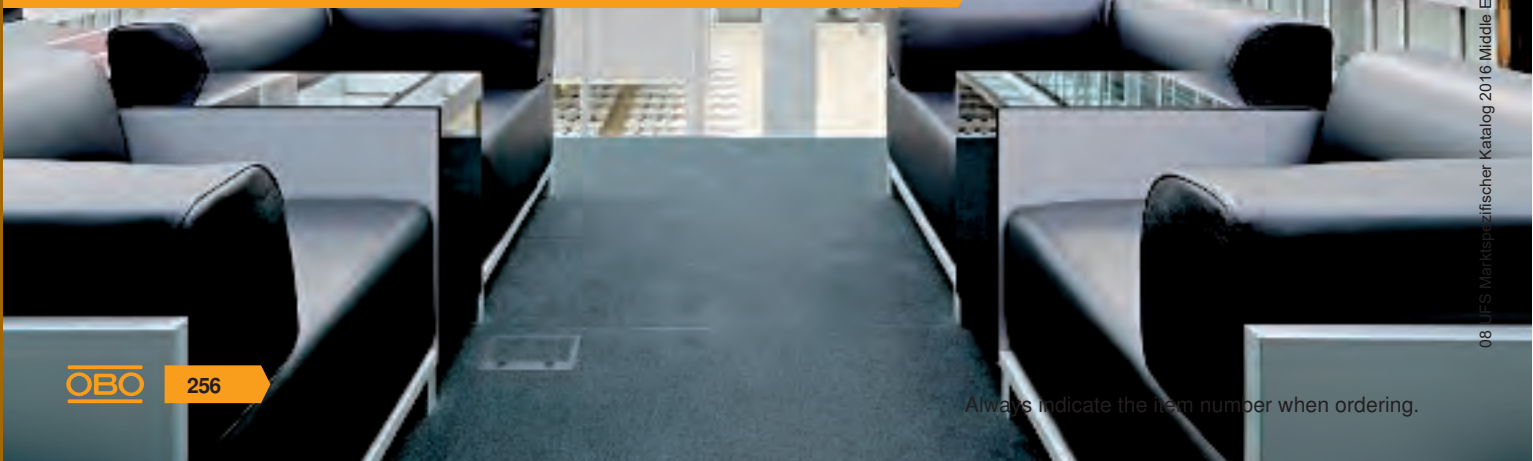
Cover plate for installation of 3 Modul 45 devices.
L = 181.5 mm.









GES service outlets

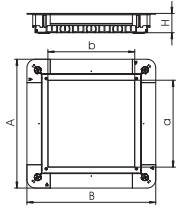
Service outlets supply workstations and other areas in the centre of the room with power and data connections via the floor. There are versions for dry and wet-cleaned floors. Service outlets are suitable for installation in screed-flush and screed-covered underfloor systems, as well as in system floors.



GES service outlets

	Rectangular service outlets for dry-cleaned floors	259
	Rectangular inspection cover	260
	Round service outlets for dry-cleaned floors	264
	GRAF9 service outlet for wet-cleaned floor	266

Underfloor box UGD250-3 for GES9/55

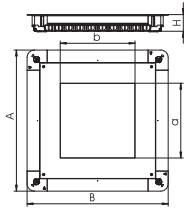


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Dimension h mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UGD55 250-3 9R	367	367	244	244	55	55 - 80	1	430.000	7410060

- St** Steel
- FS** Strip galvanised

Underfloor mounting box with blanking lid and lid blanking plate for the installation of a square service outlet GES9/55 in screed heights of 55 mm or more. With pipe insertion openings per side: 7 x M20, 3 x M25, 4 x M32. Usable pipe size for system height 55 mm: M20.

Underfloor box UGD350-3 for GES9/55

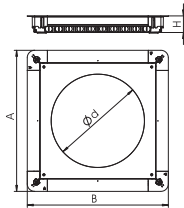


Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Dimension h mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UGD55 350-3 9R	467	467	244	244	55	55 - 80	1	790.000	7410062

- St** Steel
- FS** Strip galvanised

Underfloor mounting box with blanking lid and lid blanking plate for the installation of a square service outlet GES9/55 in screed heights of 55 mm or more. With pipe insertion openings per side: 10 x M20, 3 x M25, 7 x M32. Usable pipe size for system height 55 mm: M20.

Underfloor box UGD350-3 for GESR9/55



Type	Dimension A mm	Dimension B mm	Dimension d mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UGD55 350-3R9R	467	467	305	55 - 80	1	775.000	7410064

- St** Steel
- FS** Strip galvanised

Underfloor mounting box with blanking lid and lid blanking plate for the installation of a round service outlet GESR9/55 in screed heights of 55 mm or more. With pipe insertion openings per side: 10 x M20, 3 x M25, 7 x M32. Usable pipe size for system height 55 mm: M20.

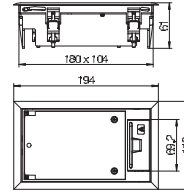


GES2DB service outlet with handle clamp

Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES2 DB 7011	Iron grey	5	1	66.400	7405100
GES2 DB 9011	Graphite black	5	1	66.400	7405104
GES2 DB 1019	Grey-beige	5	1	66.400	7405108

PA Polyamide

Service outlet with handle clamp, 1-compartment, for the installation of MT2 mounting support.

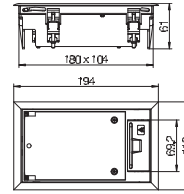


GES2 service outlet with handle clamp

Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES2 U 7011	Iron grey	5	1	61.300	7405116
GES2 U 9011	Graphite black	5	1	61.300	7405120
GES2 U 1019	Grey-beige	5	1	61.300	7405124

PA Polyamide

Service outlet with handle clamp, 1-compartment, for the installation of MT2 mounting support.



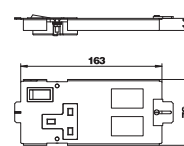
GES2 mounting support with single socket, switched and for data socket installation

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 2BS SS0 LJ6C	1	19.100	7407761

St Steel

FS Strip galvanised

Mounting support for installation units of nominal size 2 with mounting single BS socket, type OBO, and 2 mounting openings for data sockets, type LJ6C. Direction of insertion 90°. Socket with increased touch protection. With screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



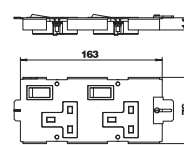
GES2 mounting support with two single sockets, switched

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 2BS 2SS0	1	27.000	7407762

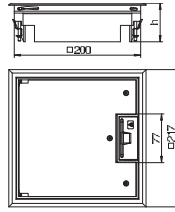
St Steel

FS Strip galvanised

Mounting support with two switched single sockets for installation in installation units of nominal size 2. 90° connection direction. Sockets with increased touch protection. With screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



GES4 service outlet with handle clamp

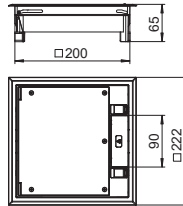


Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES4 U 7011	Iron grey	5	1	139.500	7405196
GES4 U 9011	Graphite black	5	1	139.500	7405200
GES4 U 1019	Grey-beige	5	1	139.500	7405204

PA Polyamide

Service outlet with handle clamp, 2-compartment, for the installation of MT4 mounting support. Two type APMT2 cover plates can be installed.

GES4 service outlet with locking slider



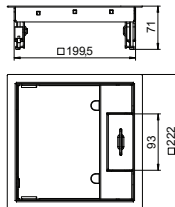
Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES4-2U10T 7011	Iron grey	10	1	114.000	7405145
GES4-2U10T 9011	Graphite black	10	1	124.000	7405146
GES4-2U10T 1019	Grey-beige	10	1	124.000	7405147

PA Polyamide

Service outlet with locking slider, 2-compartment, for the installation of MT4 mounting support. Two type APMT2 cover plates can be installed.

Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 3, 8 or 10 mm.

GES4M-2 service outlet with handle clamp

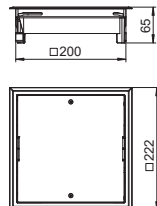


Type	Material	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES4M-2 10U	A2	10	1	260.000	7405191

A2 Stainless steel, rustproof 1.4301

Service outlet with handle clamp, 2-compartment, for the installation of MT4 mounting support. Two type APMT2 cover plates can be installed.

ZES4 inspection cover



Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
ZES4-2 U10T 7011	Iron grey	10	1	158.000	7406701
ZES4-2 U10T 9011	Graphite black	10	1	158.000	7406702
ZES4-2 U10T 1019	Grey-beige	10	1	158.000	7406703

PA Polyamide

Draw box insert for blanking locking of a square mounting opening of nominal size 4 in trunking systems and system floors.

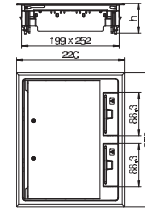
Floor covering recess is set to 5 mm on delivery, if necessary adjustable to 3, 8 or 10 mm.

GES6 service outlet with handle clamp

Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES6 U 7011	Iron grey	5	1	157.500	7405308
GES6 U 9011	Graphite black	5	1	150.000	7405312
GES6 U 1019	Grey-beige	5	1	150.000	7405316

PA Polyamide

Service outlet with handle clamp, 3-compartment, for the installation of MT6 mounting support. Three type APMT2 cover plates can be installed.

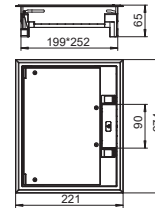


GES6 service outlet with locking slider

Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES6-2U10T 7011	Iron grey	10	1	138.000	7405321
GES6-2U10T 9011	Graphite black	10	1	138.000	7405322
GES6-2U10T 1019	Grey-beige	10	1	138.000	7405323

PA Polyamide

Service outlet with locking slider, 3-compartment, for the installation of MT6 mounting support. Three type APMT2 cover plates can be installed. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 3, 8 or 10 mm.

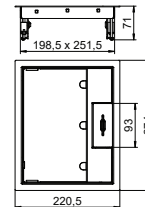


GES6M-2 service outlet with handle clamp

Type	Material	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GES6M-2 10U	A2	10	1	320.000	7405299

A2 Stainless steel, rustproof 1.4301

Service outlet with handle clamp, 3-compartment, for the installation of MT6 mounting support. Three type APMT2 cover plates can be installed.

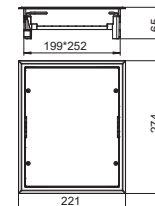


ZES6 inspection cover

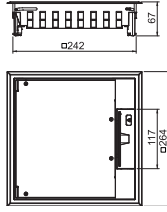
Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
ZES6-2 U10T 7011	Iron grey	10	1	150.000	7406749
ZES6-2 U10T 9011	Graphite black	10	1	150.000	7406750
ZES6-2 U10T 1019	Grey-beige	10	1	150.000	7406751

PA Polyamide

Junction box insert for blank closing of a rectangular mounting opening of nominal size 6 in an underfloor duct or trunking system or in raised floor. Polyamide floor covering profile. Recess is 5 mm, if necessary, adjustable to 3, 8 or 10 mm.



GES9-3B service outlet with handle clamp

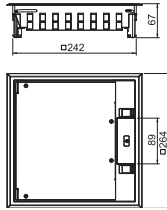


Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES9-3B U 9011	Graphite black	1	205.000	7405079
GES9-3B U 1019	Grey-beige	1	205.000	7405081

PA Polyamide

Service outlet with handle clamp, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 10 mm.

GES9-3S service outlet with locking slider

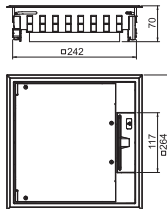


Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES9-3S U 9011	Graphite black	1	199.500	7405085
GES9-3S U 1019	Grey-beige	1	199.500	7405087

PA Polyamide

Service outlet with locking slider, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 10 mm.

GES9-3 service outlet with handle clamp

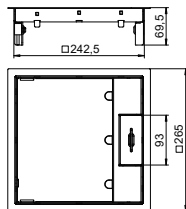


Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.

PA Polyamide

Service outlet with metal installation frame for mounting of 3 cover plates of shape APMT5, for use in UGD and UDS underfloor boxes. Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 10 mm.

GES9M-2 service outlet with handle clamp

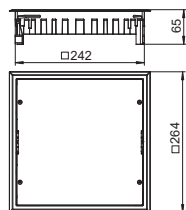


Type	Material	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.

A2 Stainless steel, rustproof 1.4301

Service outlet with handle clamp, 3-compartment, for the installation of MT9 mounting support. 3 type APMT5 cover plates can be installed.

ZES9 inspection cover



Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
ZES9-2 U10T 9011	Graphite black	10	1	206.300	7406674
ZES9-2 U10T 1019	Grey-beige	10	1	206.300	7406676

PA Polyamide

Junction box insert for blank closing of a square mounting opening of nominal size 9 in an under-floor duct or trunking system or in raised floor. Polyamide floor covering profile. Recess is 5 mm, if necessary, adjustable to 3, 8 or 10 mm.

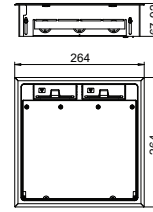


GES9 service outlet with installation housing

Type	Height adjustment range mm	Colour	Pack Piece	Weight kg/100 pc.	Item no.

PA Polyamide

Square screed socket with GES9 UGE service outlet for use in screed floors. With pre-marked insertion openings for pipelines (M20/M25) on all four sides. In the as-delivered state, the installation housing is closed with a mounting protection cover. The minimum installation depth is 65 mm, the height-adjustment range + 25 mm. Three type APMT5 cover plates can be installed.



Underfloor box with GES9UGE

Type	Height adjustment range mm	Colour	Pack Piece	Weight kg/100 pc.	Item no.

PA Polyamide

Square screed socket with GES9 UGE service unit for use in screed floors. With pre-marked insertion openings for pipelines (M25) on all four sides. In the as-delivered state, the installation housing is closed with a mounting protection cover. The minimum installation depth is 64 mm, the height-adjustment range + 23 mm.

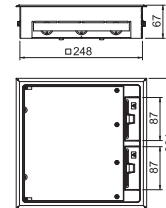


Service unit set

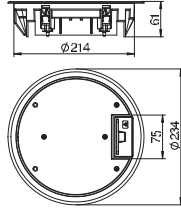
Type	Height adjustment range mm	Colour	Pack Piece	Weight kg/100 pc.	Item no.

PA Polyamide

Square screed socket with GES9 UGE service unit for use in screed floors. With pre-marked insertion openings for pipelines (M25) on all four sides. The minimum installation depth is 64 mm, the height-adjustment range + 23 mm.



GESR4 service outlet with handle clamp

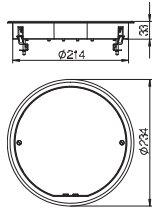


Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GESR4 U 7011	Iron grey	5	1	140.000	7405436
GESR4 U 9011	Graphite black	5	1	140.000	7405440
GESR4 U 1019	Grey-beige	5	1	140.000	7405444

PA Polyamide

Service outlet with handle clamp, 2-compartment, for the installation of MT4 mounting support. Two type APMT2 cover plates can be installed.

ZESR4 inspection cover

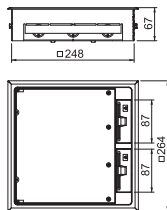


Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
ZESR4 U 7011	Iron grey	5	1	140.000	7406772
ZESR4 U 9011	Graphite black	5	1	140.000	7406776
ZESR4 U 1019	Grey-beige	5	1	140.000	7406780

PA Polyamide

Draw box insert for blanking locking of a square round mounting opening of nominal size R4 in trunking systems and system floors.

Service unit set



Type	Height adjustment range mm	Colour	Pack Piece	Weight kg/100 pc.	Item no.
SFB GES9 7011 V	70 - 95	Iron grey	1	290.000	7429699

PA Polyamide

Square screed socket with GES9 UGE service unit for use in screed floors. With pre-marked insertion openings for pipelines (M25) on all four sides.

The minimum installation depth is 64 mm, the height-adjustment range + 23 mm.



GESR9 service outlet with locking slider

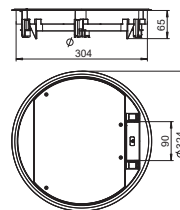
Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GESR9-2U12T 7011	Iron grey	12	1	244.000	7405465
GESR9-2U12T 9011	Graphite black	12	1	244.000	7405466
GESR9-2U12T 1019	Grey-beige	12	1	244.000	7405467

PA Polyamide

Service outlet with locking slider, 3-compartment, for the installation of MT9 mounting support.

Three type APMT5 cover plates can be installed.

Floor covering recess in the hinged cover pre-adjusted to 5 mm, if necessary adjustable to 3, 10 or 12 mm.



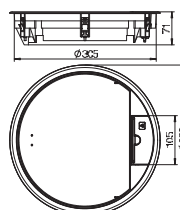
GESRA9/10 service outlet with handle clamp

Type	Material	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
GESRA9 10U	AIG	10	1	120.500	7405580

AIG Die-cast aluminium

Service outlet with handle clamp, 3-compartment, for the installation of MT9 mounting support.

Three type APMT5 cover plates can be installed.



ZESR9 inspection cover

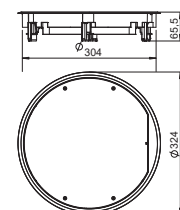
Type	Colour	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
ZESR9-2 U12T7011	Iron grey	12	1	298.000	7406805
ZESR9-2 U12T9011	Graphite black	12	1	298.000	7406806
ZESR9-2 U12T1019	Grey-beige	12	1	298.000	7406807

PA Polyamide

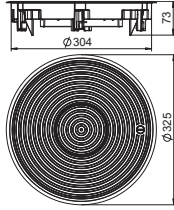
Junction box insert for blank closing of a round mounting opening of nominal size R9 in trunking systems and in raised and cavity floors. With universal fixing bracket.

Polyamide carpet protection frame.

Floor covering recess 12 mm.



GRAF9 universal service outlet, wet-care with structured lid

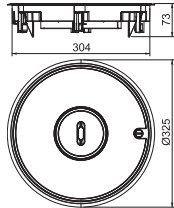


Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GRAF9-2 U 7011	Iron grey	1	246.000	7405746
GRAF9-2 U 9011	Graphite black	1	246.000	7405750
GRAF9-2 U 1019	Grey-beige	1	246.000	7405754

AIG Die-cast aluminium

Service outlet with tube body for wet cleaned floors, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed.

Service outlet GRAF9-2 BA3



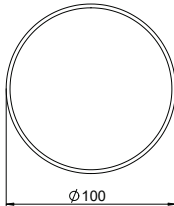
Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GRAF9-2 BA3	—	1	258.000	7405743

AIG Die-cast aluminium

Service outlet with tube body for wet-cleaned floors for up to 12 individual Modul 45 devices in 3 UT4 universal supports, use in duct systems and system floors. Surface: Aluminium, polished.

Up to 9 installation devices with 50 mm central plate can be inserted.

Round seal for tube body



Type	Pack Piece	Weight kg/100 pc.	Item no.
RD2 TUK2	1	0.200	7407098

EPDM Ethylene propylene dien rubber DIN 1629

Round seal for tube body TUK2 - spare part.

Seals for GRAF9-2 (spare part)



Type	Pack Piece	Weight kg/100 pc.	Item no.
RD GRAF9-2	1	1.650	7407099

EPDM Ethylene propylene dien rubber DIN 1629

Round seals for GRAF9-2 and tube body - spare part.

Care agent for cassette seal and tube body seal

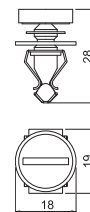


Type	Pack Piece	Weight kg/100 pc.	Item no.
PF-G	1	0.800	7407110

PTFE Mounting paste based on synthetic oil

Cleaning agent for round seals RD2, flat seals FD2 QNK and tube body seal RD2TUK2.

Separating retainer (spare part)



Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
VTGRAF9 9011	Graphite black	1	0.800	7408507
VTGRAF9 7011	Iron grey	1	0.800	7408508

PA Polyamide

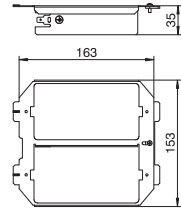
Plug consisting of a locking pin and seat as spare part for GRAF9.

Mounting support, nominal size 4 and R4, for APMT2 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 4R4 AP 2	1	12.310	7407748

- St** Steel
- FS** Strip galvanised

Mounting support for accepting APMT2 cover plates, which aid the installation of accessories in installation units of nominal sizes 4 and R4.

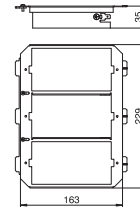


Mounting support, nominal size 6, for APMT2 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 6 AP2	1	20.000	7407752

- St** Steel
- FS** Strip galvanised

Mounting support for accepting three APMT2 cover plates, which aid the installation of accessories in installation units of nominal size 6.

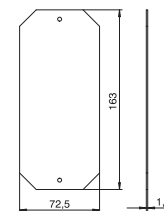


Cover plate APMT2/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 0	Grey-white	163	20	12.300	7406912

- St** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 163 mm.

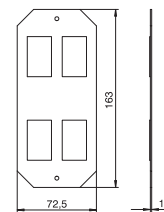


Cover plate APMT2/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 1	Grey-white	163	20	11.100	7406916

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 163 mm.

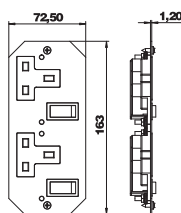


Cover plate APMT2 with two single sockets

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2xSS0	Grey-white	163	4	23.700	7407879

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with two switched single sockets for installation in mounting supports beneath GES service outlets and cassettes. Sockets with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

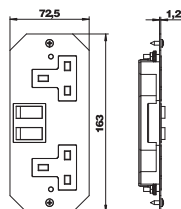


Cover plate APMT2 with double socket

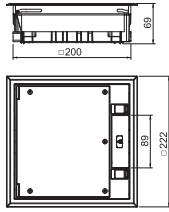
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2SS0	Grey-white	163	4	21.500	7407872

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes.
Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



GES4-2 with MT3 45

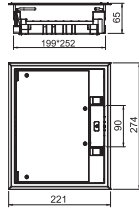


Type	Colour	Pack Piece	Weight		Item no.
			kg/100 pc.		
GES4-2 KU 7011	Iron grey	1	166.000		7429584

PA Polyamide

Service unit with all necessary system accessories for direct installation in screed floors. The scope of delivery contains a service unit of nominal size 4 with universal fastening bracket and two module supports, each for three Modul 45 devices. Service unit with carpet protection frame, hinged lid and cord outlet made of polyamide in the colour RAL 7011. 10 mm floor covering recess in the hinged lid (changeable to 3, 5 or 8 mm).

GES6-2 with MT3 45



Type	Colour	Pack Piece	Weight		Item no.
			kg/100 pc.		
GES6-2 KU 7011	Iron grey	1	209.400		7429588

PA Polyamide

Service unit with all necessary system accessories for direct installation in screed floors. The scope of delivery contains a service unit of nominal size 6 with universal fastening bracket and three module supports, each for three Modul 45 devices. Service unit with carpet protection frame, hinged lid and cord outlet made of polyamide in the colour RAL 7011. 10 mm floor covering recess in the hinged lid (changeable to 3, 5 or 8 mm).

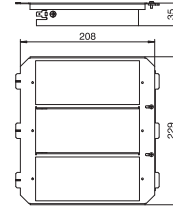


Mounting support, nominal size 9 and R9, for APMT5 cover plates

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
MT 9R9 AP 5			1	25.650	7407756

- St** Steel
- FS** Strip galvanised

Mounting support for accepting three APMT5 cover plates, which aid the installation of accessories in installation units of nominal size 9.

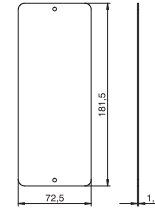


Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 0	Grey-white	181.5	20	12.700	7406904

- St** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.

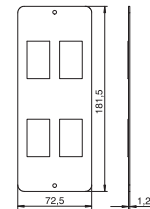


Cover plate APMT5/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 1	Grey-white	181.5	20	12.700	7406908

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.



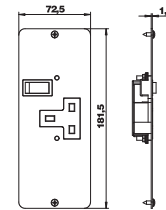
Cover plate APMT5 with single socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS SSO	Grey-white	181.5	4	18.700	7407874

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched single socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

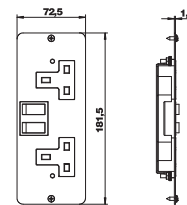


Cover plate APMT5 with double socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS 2SSO	Grey-white	181.5	4	23.200	7407870

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

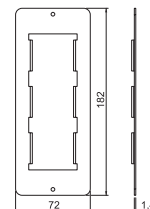


Cover plate APMT5/10

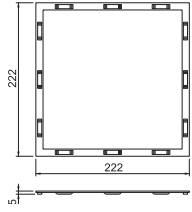
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 10	—	181.5	20	11.600	7406894

- St** Steel

Cover plate for installation of 3 Modul 45 devices.
L = 181.5 mm.



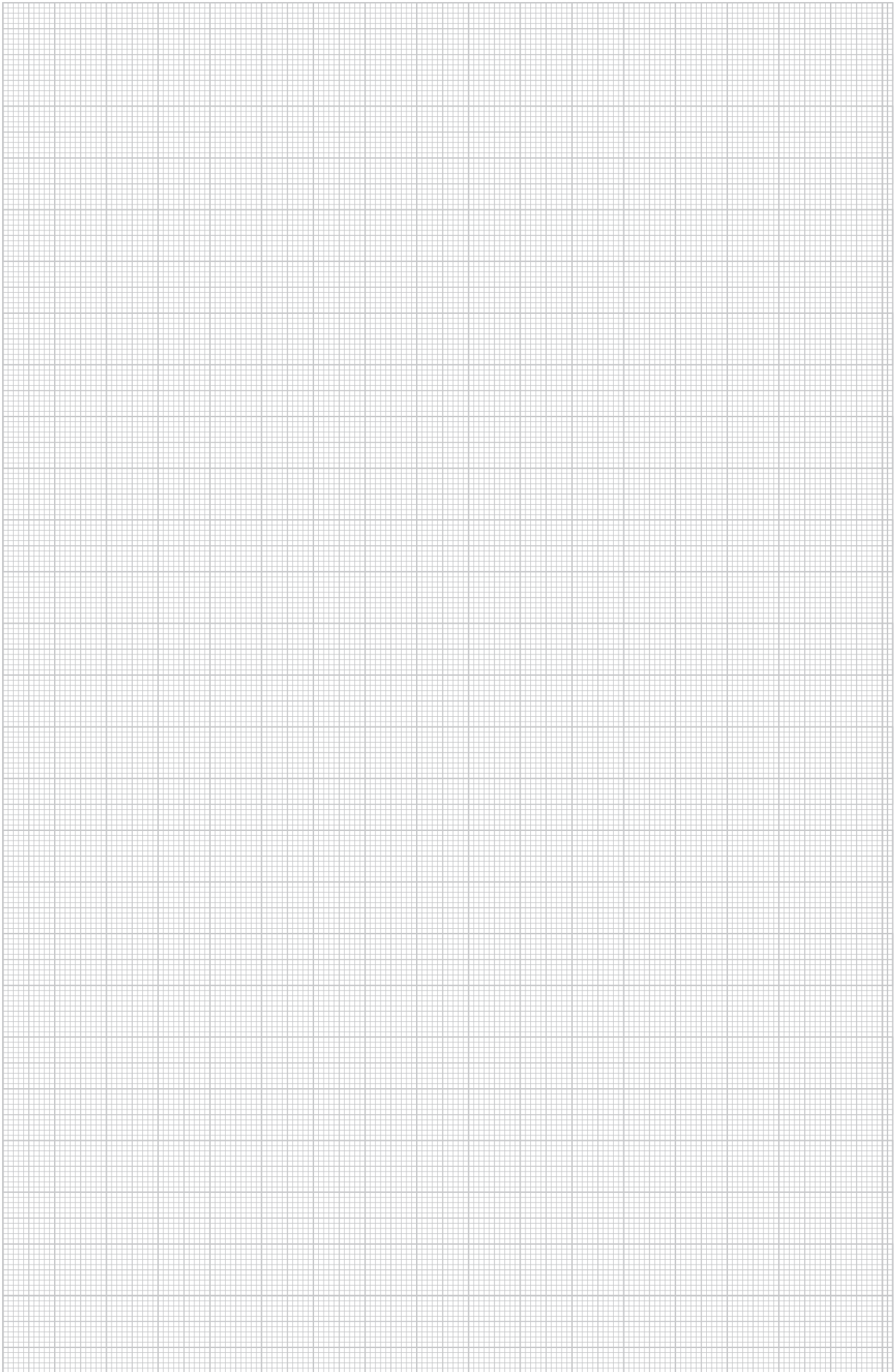
Adapter for GES4 in UA sockets



Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES4-2 Adap GEE	—	1	14.100	7405131
SI Steel				
FS Strip galvanised				

Adapter to accept the GES4-2 service unit for mounting in underfloor sockets of type UA240.





Frame cassettes and height adjustable cassettes

The compact, flush-floor cassettes from Ackermann made by OBO provide power, data and multimedia connections in a high-quality design. The height adjustable cassettes can be levelled to the height of the floor. They are available in round and rectangular versions. There are versions for dry, moist and wetcare floor coverings. Cassettes are suitable for raised and cavity floors and all kinds of screed-flush underfloor systems.



Frame cassettes and height adjustable cassettes



Frame cassettes

274



Height-adjustable square cassette

278



Height-adjustable round cassette

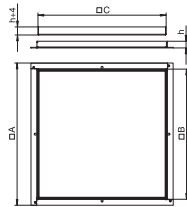
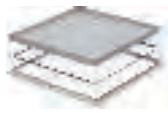
280



Tube body

283

Frame cassette for inspection opening, RK, nominal size 250-2, stainless steel



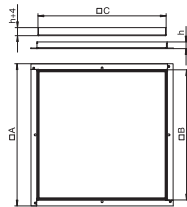
Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RK V2 10	324	288	282	8	A2	1	410.900	7406000
RK V2 15	324	288	282	13	A2	1	426.800	7406004
RK V2 20	324	288	282	18	A2	1	442.400	7406008
RK V2 25	324	288	282	23	A2	1	458.300	7406012

A2 Stainless steel, rustproof 1.4301

"Blank" frame cassette for the creation of an inspection opening in the UZD250-3 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

A2 Brass Available on request

Frame cassette for inspection opening, RK, nominal size 250-3, brass

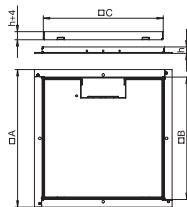


Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RK M2 10	324	288	282	8	CuZn	1	431.100	7405844
RK M2 15	324	288	282	13	CuZn	1	449.100	7405848
RK M2 20	324	288	282	18	CuZn	1	466.700	7405852
RK M2 25	324	288	282	23	CuZn	1	484.100	7405856

CuZn Brass

"Blank" frame cassette for the creation of an inspection opening in the UZD250-3 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

Frame cassette for cord outlet, RKS, nominal size 250-3, stainless steel



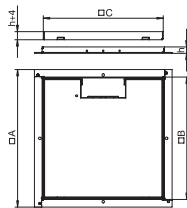
Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKS 2V2 15	324	288	282	13	A2	1	402.200	7406550
RKS 2V2 20	324	288	282	18	A2	1	417.500	7406554
RKS 2V2 25	324	288	282	23	A2	1	432.800	7406558

A2 Stainless steel, rustproof 1.4301

Frame cassette for cord outlet, for UZD250-3, for the installation of accessories in dry or wet-cleaned floors.

A2 Brass Available on request

Frame cassette for cord outlet, RKS, nominal size 250-3, brass



Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKS 2M2 15	324	288	282	13	CuZn	1	423.600	7406538
RKS 2M2 20	324	288	282	18	CuZn	1	440.800	7406542
RKS 2M2 25	324	288	282	23	CuZn	1	457.900	7406546

CuZn Brass

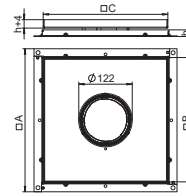
Frame cassette for cord outlet, for UZD250-3, for the installation of accessories in dry or wet-cleaned floors.

Frame cassette for tube body, RKF, nominal size 250-3, stainless steel

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKF3 V2 10	324	288	282	10	A2	1	383.200	7409402
RKF3 V2 15	324	288	282	15	A2	1	398.900	7409404
RKF3 V2 20	324	288	282	20	A2	1	415.700	7409406
RKF3 V2 25	324	288	282	25	A2	1	432.400	7409408

A2 Stainless steel, rustproof 1.4301

Frame cassette for tube body, for UZD250-3, for the installation of accessories in dry or wet-cleaned floors.



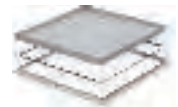
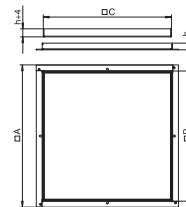
Frame cassette for inspection opening, RK, nominal size 350-3, stainless steel

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RK V3 10	424	388	382	8	A2	1	722.800	7406028
RK V3 15	424	388	382	13	A2	1	744.200	7406032
RK V3 20	424	388	382	18	A2	1	765.600	7406036
RK V3 25	424	388	382	23	A2	1	787.000	7406040

A2 Stainless steel, rustproof 1.4301

"Blank" frame cassette for the creation of an inspection opening in the UZD350-3 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

A2 Brass Available on request

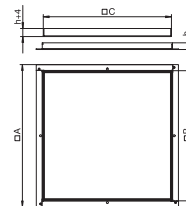


Frame cassette for inspection opening, RK, nominal size 350-3, brass

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RK M3 10	424	388	382	8	CuZn	1	755.900	7405868
RK M3 15	424	388	382	13	CuZn	1	780.000	7405872
RK M3 20	424	388	382	18	CuZn	1	804.200	7405876
RK M3 25	424	388	382	23	CuZn	1	828.400	7405880

CuZn Brass

"Blank" frame cassette for the creation of an inspection opening in the UZD350-3 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.



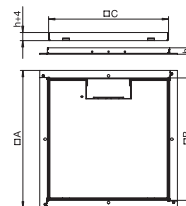
Frame cassette for cord outlet, RKS, nominal size 350-3, stainless steel

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKS V3 15	424	—	—	13	A2	1	721.500	7406526
RKS V3 20	424	—	—	18	A2	1	742.300	7406530
RKS V3 25	424	—	—	23	A2	1	763.200	7406534

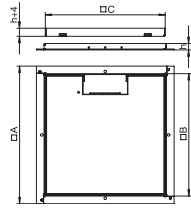
A2 Stainless steel, rustproof 1.4301

Frame cassette for cord outlet, for UZD350-3, for the installation of accessories in dry or wet-cleaned floors.

A2 Brass Available on request



Frame cassette for cord outlet, RKS, nominal size 350-3, brass

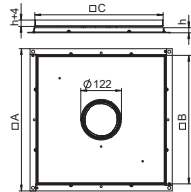


Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKS M3 15	424	—	—	13	CuZn	1	756.400	7406502
RKS M3 20	424	—	—	18	CuZn	1	779.900	7406506
RKS M3 25	424	—	—	23	CuZn	1	803.300	7406510

CuZn Brass

Frame cassette for cord outlet, for UZD350-3, for the installation of accessories in dry or wet-cleaned floors.

Frame cassette for tube body, RKF, nominal size 350-3, stainless steel

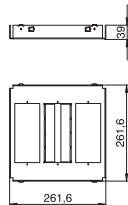


Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKF3 V3 10	424	388	382	10	A2	1	695.100	7409412
RKF3 V3 15	424	388	382	15	A2	1	716.600	7409414
RKF3 V3 20	424	388	382	20	A2	1	739.000	7409416
RKF3 V3 25	424	388	382	25	A2	1	761.400	7409418
RKF3 V3 30	424	388	382	30	A2	1	783.800	7409420

A2 Stainless steel, rustproof 1.4301

Frame cassette for tube body, for UZD350-3, for the installation of accessories in dry or wet-cleaned floors.

RKS mounting support for UZD250-3



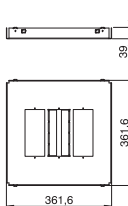
Type	Pack Piece	Weight kg/100 pc.	Item no.
MT250-3 3BSRKS	1	84.360	7407704

St Steel

FS Strip galvanised

Mounting support for mounting three APMT5 cover plates, which aid the installation of accessories under RKS frame cassettes in the UZD250-2 underfloor box.

RKS mounting support for UZD350-3



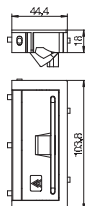
Type	Pack Piece	Weight kg/100 pc.	Item no.
MT350-3 3BSRKS	1	167.720	7407724
MT350-3 4BSRKS	1	160.188	7407732

St Steel

FS Strip galvanised

Mounting support for mounting three APMT5 cover plates, which aid the installation of accessories under RKS frame cassettes in the UZD350-2 underfloor box.

Polyamide cord outlet for frame cassette

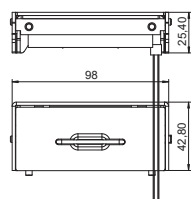


Type	Colour	Material	Pack Piece	Weight kg/100 pc.	Item no.
SAK 7011	Iron grey	PA	1	5.800	7407976
SAK 9011	Graphite black	PA	1	5.800	7407980

PA Polyamide

Cord outlet for installation in RKS frame cassettes. Use only in dry-cleaned floors.

Cord outlet SAK-2, brass



Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
SAK-2 MS	CuZn	1	29.500	7407991

CuZn Brass

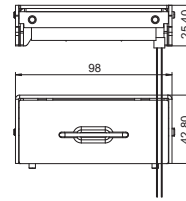
Cord outlet for installation in RKS frame cassettes. Use only in dry-cleaned floors.

Cord outlet SAK-2, stainless steel

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
SAK-2 V2A	A2	1	27.500	7407995

A2 Stainless steel, rustproof 1.4301

Cord outlet for installation in RKS frame cassettes. Use only in dry-cleaned floors.



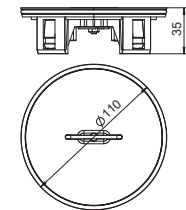
Tube body with cover plate, with handle clamp, for frame cassette and height-adjustable cassette

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 GV	Zn	1	59.000	7428140

Zn Die-cast zinc

N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover and handle made of V2A.



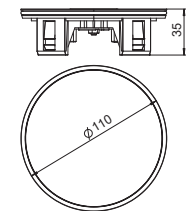
Tube body with cover plate, without handle clamp, for frame cassette and height-adjustable cassette

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 V	Zn	1	59.000	7428141

Zn Die-cast zinc

N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover made of V2A.



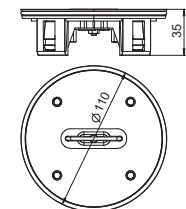
Tube body with floor covering recess, with handle clamp, for frame cassette and height-adjustable cassette

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 G4	Zn	1	45.000	7428142

Zn Die-cast zinc

N Nickel-plated

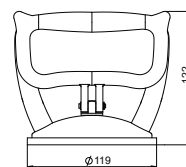
Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. With 4 mm floor covering recess for construction-side panelling with cut resistant floor covering, with handle clamp.



Suction lifter, 300 N

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
WZ 1029	St	1	51.000	7408634

For lifting out cassettes, boxes and trunking lids. Support force 300 N.



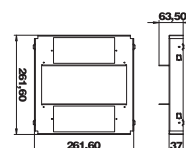
Mounting support – MT250-3 3BSRKF

Type	Material	Pack Piece	Weight kg/100 pc.	Item no.
MT250-3 3BSRKF	St	1	75.500	7407702

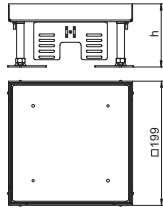
St Steel

FS Strip galvanised

Mounting support for mounting of two APMT5 and two APMT2LJ6C cover plates, which aid the installation of accessories under RKF frame cassettes in the UZD250-2 underfloor box.



Height-adjustable cassette for inspection opening, RKN, brass

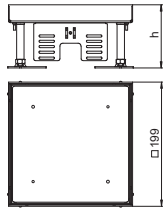


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 4 MS 20	4	100	20	100 - 150	1	321.600	7409002
RKN2 4 MS 25	4	105	25	105 - 155	1	456.000	7409004

CuZn Brass

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size 4 in dry or wet-care floors. Only suitable for smooth floor coverings.

Height-adjustable cassette for inspection opening, RKN, stainless steel

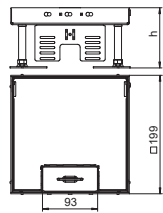


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 4 VS 20	4	100	20	100 - 150	1	341.000	7409014
RKN2 4 VS 25	4	105	25	105 - 155	1	384.000	7409016

A2 Stainless steel, rustproof 1.4301

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size 4 in dry or wet-care floors. Only suitable for smooth floor coverings.

Height-adjustable cassette with cord outlet, RKS, brass

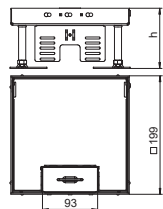


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 4 MS 20	4	105	20	105 - 150	1	322.400	7409202
RKS2 4 MS 25	4	110	25	110 - 155	1	328.000	7409204

CuZn Brass

Height-adjustable cassette with cord outlet, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette with cord outlet, RKS, stainless steel

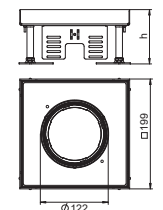


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 4 VS 20	4	105	20	105 - 150	1	305.000	7409208
RKS2 4 VS 25	4	110	25	110 - 155	1	318.000	7409210

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with cord outlet, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette for tube body, RKF, stainless steel



Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2 4 VS 20	4	105	20	105 - 150	1	295.200	7409362
RKF2 4 VS 25	4	110	25	110 - 155	1	441.000	7409364

A2 Stainless steel, rustproof 1.4301

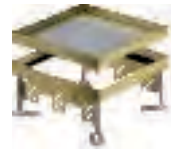
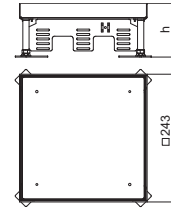
Height-adjustable cassette with tube body, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette for inspection opening, RKN, brass

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 9 MS 20	9	100	20	100 - 150	1	589.000	7409022
RKN2 9 MS 25	9	105	25	105 - 155	1	596.000	7409024

CuZn Brass

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size 9 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

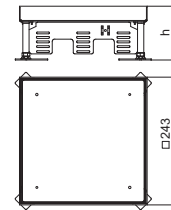


Height-adjustable cassette for inspection opening, RKN, stainless steel

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 9 VS 20	9	100	20	100 - 150	1	440.000	7409044
RKN2 9 VS 25	9	105	25	105 - 155	1	451.000	7409046

A2 Stainless steel, rustproof 1.4301

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size 9 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

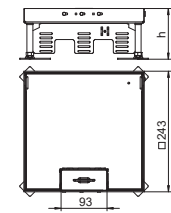


Height-adjustable cassette with cord outlet, RKS2N, brass

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2N 9 MS 20	9	105	20	105 - 150	1	432.000	7409212
RKS2N 9 MS 25	9	110	25	110 - 155	1	619.000	7409214

CuZn Brass

Height-adjustable cassette with cord outlet, 3-compartment, for the installation of MT9 mounting support. Three type APMT5 cover plates can be installed.

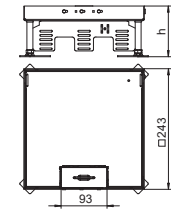


Height-adjustable cassette with cord outlet, RKS2N, stainless steel

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2N 9 VS 20	9	105	20	105 - 150	1	430.000	7409218
RKS2N 9 VS 25	9	110	25	110 - 155	1	444.000	7409220

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with cord outlet, 3-compartment, for the installation of MT9 mounting support.

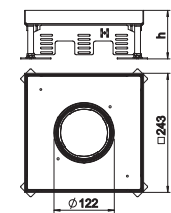


Height-adjustable cassette for tube body, RKF2N, stainless steel

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2N 9 VS 20	9	105	20	105 - 150	1	407.100	7409368
RKF2N 9 VS 25	9	110	25	110 - 155	1	501.000	7409370

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with tube body, 3-compartment, for the installation of MT9 mounting support.

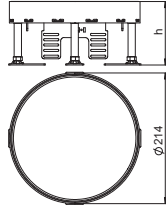


Cassettes - height-adjustable and decouplable



08 UFS Marktspezifischer Katalog 2016 Middle East / en / 2020/04/09 07:42:15 (LLEExport_02472) / 2020/04/09 07:42:47

Height-adjustable cassette for inspection opening, RKR, brass

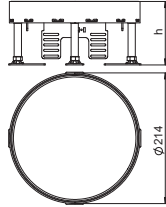


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 4M 20	R4	105	20	105 - 155	1	392.000	7409082
RKR2 4M 25	R4	105	25	105 - 155	1	410.000	7409084

CuZn Brass

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R4 in dry or wet-care floors. Only suitable for smooth floor coverings.

Height-adjustable cassette for inspection opening, RKR, stainless steel

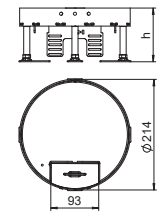


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 4V 20	R4	105	20	105 - 155	1	354.000	7409088
RKR2 4V 25	R4	105	25	105 - 155	1	376.000	7409090

A2 Stainless steel, rustproof 1.4301

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R4 in dry or wet-care floors. Only suitable for smooth floor coverings.

Height-adjustable cassette with cord outlet, RKS2, brass

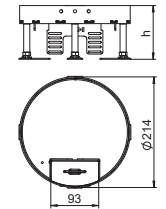


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R4 M20	R4	110	20	110 - 155	1	233.000	7409252
RKS2 R4 M25	R4	110	25	110 - 155	1	233.000	7409254

CuZn Brass

Height-adjustable cassette with cord outlet, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette with cord outlet, RKS2, stainless steel

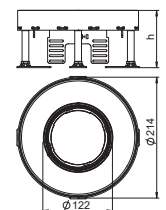


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R4 V20	R4	110	20	110 - 155	1	233.000	7409258
RKS2 R4 V25	R4	110	25	110 - 155	1	233.000	7409260

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with cord outlet, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette for tube body, RKFR, stainless steel



Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 4 V20	R4	110	20	110 - 155	1	220.000	7409422
RKFR2 4 V25	R4	110	25	110 - 155	1	220.000	7409424

A2 Stainless steel, rustproof 1.4301

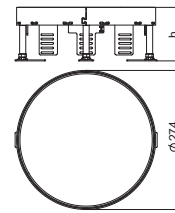
Height-adjustable cassette with tube body, 2-compartment, for the installation of MT4 mounting support.

Height-adjustable cassette for inspection opening, RKR, stainless steel

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 7V 20	R7	105	20	105 - 155	1	548.000	7409108
RKR2 7V 25	R7	105	25	105 - 155	1	572.000	7409110

A2 Stainless steel, rustproof 1.4301

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R7 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

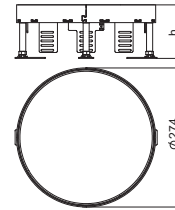


Height-adjustable cassette for inspection opening, RKR, brass

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 7M 20	R7	105	20	105 - 155	1	633.000	7409102
RKR2 7M 25	R7	105	25	105 - 155	1	691.000	7409104

CuZn Brass

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R7 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

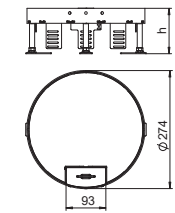


Height-adjustable cassette with cord outlet, RKS2, stainless steel

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R7 V20	R7	110	20	110 - 155	1	340.000	7409268
RKS2 R7 V25	R7	110	25	110 - 155	1	340.000	7409270

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette of nominal size R7 with cord outlet for installation of accessories in dry-care floors.

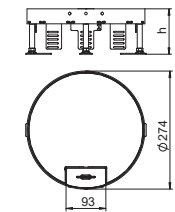


Height-adjustable cassette with cord outlet, RKS2, brass

Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R7 M20	R7	110	20	110 - 155	1	350.000	7409262
RKS2 R7 M25	R7	110	25	110 - 155	1	350.000	7409264

CuZn Brass

Height-adjustable cassette of nominal size R7 with cord outlet for installation of accessories in dry-care floors.

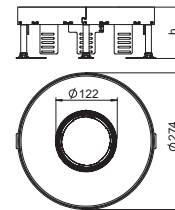


Height-adjustable cassette for tube body, RKFR, stainless steel

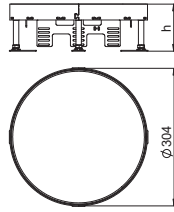
Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 7 V20	R7	110	20	110 - 155	1	325.000	7409426
RKFR2 7 V25	R7	110	25	110 - 155	1	325.000	7409428

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette of nominal size R7 for tube body for installation of accessories in dry or wet-cleaned floors.



Height-adjustable cassette for inspection opening, RKR, brass

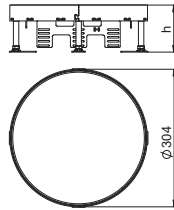


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 9M 20	R9	105	20	105 - 155	1	730.000	7409122
RKR2 9M 25	R9	105	25	105 - 155	1	796.000	7409124

CuZn Brass

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R9 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

Height-adjustable cassette for inspection opening, RKR, stainless steel

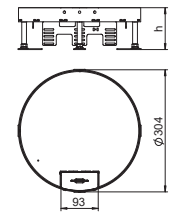


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 9V 20	R9	105	20	105 - 155	1	453.000	7409128
RKR2 9V 25	R9	105	25	105 - 155	1	750.000	7409130

A2 Stainless steel, rustproof 1.4301

Height-adjustable "blank" cassette for the creation of an inspection opening of nominal size R9 in dry or wet-cleaned floors. Only suitable for smooth floor coverings.

Height-adjustable cassette with cord outlet, RKSR, brass

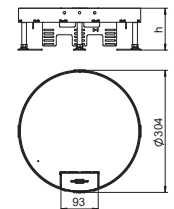


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R9 M20	R9	110	20	110 - 155	1	430.000	7409272
RKS2 R9 M25	R9	110	25	110 - 155	1	430.000	7409274

CuZn Brass

Height-adjustable cassette with cord outlet, 3-compartment, for the installation of MT9 mounting support.

Height-adjustable cassette with cord outlet, RKSR, stainless steel

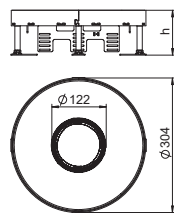


Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKS2 R9 V20	R9	110	20	110 - 155	1	420.000	7409278
RKS2 R9 V25	R9	110	25	110 - 155	1	420.000	7409280

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with cord outlet, 3-compartment, for the installation of MT9 mounting support.

Height-adjustable cassette for tube body, RKFR, stainless steel



Type	Nominal size	Dimension h mm	Floor covering thickness mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 9 V20	R9	110	20	110 - 155	1	380.000	7409430
RKFR2 9 V25	R9	110	25	110 - 155	1	380.000	7409432

A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette with tube body, 3-compartment, for the installation of MT9 mounting support.

Height adjustment unit RKNEV2

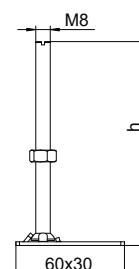
Type	Dimension h mm	Pack PU	Weight kg/100 PUs	Item no.
RK NEV2 110	110	1	25.200	7405815
RK NEV2 150	150	1	30.000	7405816
RK NEV2 190	190	1	35.000	7405817
RK NEV2 230	230	1	40.000	7405818
RK NEV2 270	270	1	45.800	7405819

St Steel

G Electrogalvanised

For flush-floor height adjustment of the height adjustable cassette units and the OKB screed-flush trunking system. The VPE consists of 4 height adjustment units.

Dimension "h" mm	RKN2, 20 mm mm	RKN2, 25 mm mm	RK(S+F)N2, 20 mm mm	RK(S+F)N2, 25 mm mm	RKR2, 20/25 mm mm	RK(S+F)R2, 20/25 mm mm	OKB mm
110	140 - 190	145 - 195	145 - 190	150 - 195	145 - 195	150 - 195	133 - 173
150	180 - 230	185 - 235	185 - 230	190 - 235	185 - 235	190 - 235	173 - 213
190	220 - 270	225 - 275	225 - 270	230 - 275	225 - 275	230 - 275	213 - 253
230	260 - 310	265 - 315	265 - 310	270 - 315	265 - 315	270 - 315	253 - 293
270	300 - 350	305 - 355	305 - 350	310 - 355	305 - 355	310 - 355	293 - 333



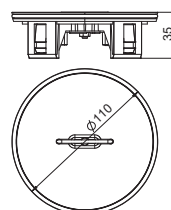
Tube body with cover plate, with handle clamp, for frame cassette and height-adjustable cassette

Type	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 GV	1	59.000	7428140

Zn Die-cast zinc

N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover and handle made of V2A.



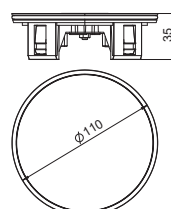
Tube body with cover plate, without handle clamp, for frame cassette and height-adjustable cassette

Type	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 V	1	59.000	7428141

Zn Die-cast zinc

N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover made of V2A.



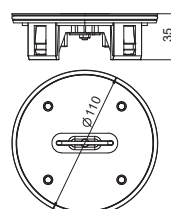
Tube body with floor covering recess, with handle clamp, for frame cassette and height-adjustable cassette

Type	Pack Piece	Weight kg/100 pc.	Item no.
TUK2 G4	1	45.000	7428142

Zn Die-cast zinc

N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. With 4 mm floor covering recess for construction-side panelling with cut resistant floor covering, with handle clamp.



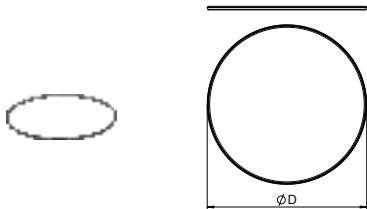
Suction lifter, 80 N



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
SGH 50	1	3.700	7368593

Suction lifter for lifting out cassettes (blank or tube body variants) with inserted hard bases with a smooth surface. Support force 80 N.

Round seal for height-adjustable round cassette (spare part)

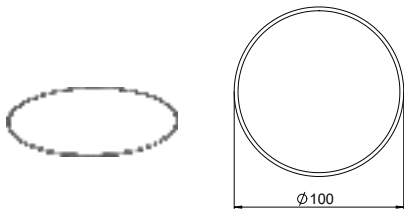


Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
RD R4 NK2	1	1.300	7407073
RD R7 NK2	1	1.700	7407074
RD R9 NK2	1	1.500	7407075

EPDM Ethylene propylene dien rubber DIN 1629

Round seal for height-adjustable round cassettes RKR2 and RKFR2 of nominal sizes R4, R7 and R9.

Round seal for tube body

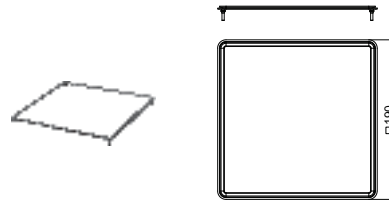


Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
RD2 TUK2	1	0.200	7407098

EPDM Ethylene propylene dien rubber DIN 1629

Round seal for tube body TUK2 - spare part.

Flat seal for square height-adjustable cassette, nominal size (spare part)



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
FD 4 QNK2	1	1.300	7407107
FD 9 QNK2	1	1.700	7407109

EPDM Ethylene propylene dien rubber DIN 1629

Flat seal for height-adjustable square cassettes RKN2 and RKFN2 of nominal sizes 4 and 9.

Care agent for cassette seal and tube body seal



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
PF-G	1	0.800	7407110

PTFE Mounting paste based on synthetic oil

Cleaning agent for round seals RD2, flat seals FD2 QNK and tube body seal RD2TUK2.

Suction lifter, 300 N



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
WZ 1029	1	51.000	7408634

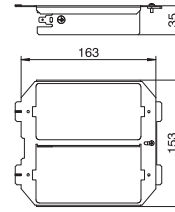
For lifting out cassettes, boxes and trunking lids. Support force 300 N.

Mounting support, nominal size 4 and R4, for APMT2 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 4R4 AP 2	1	12.310	7407748

- St** Steel
- FS** Strip galvanised

Mounting support for accepting APMT2 cover plates, which aid the installation of accessories in installation units of nominal sizes 4 and R4.

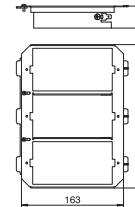


Mounting support, nominal size 6, for APMT2 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 6 AP2	1	20.000	7407752

- St** Steel
- FS** Strip galvanised

Mounting support for accepting three APMT2 cover plates, which aid the installation of accessories in installation units of nominal size 6.

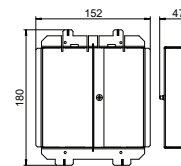


Mounting support – MT4 DBAP2

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT4 DBAP2	1	41.100	7428233

- St** Steel
- FS** Strip galvanised

Closed mounting support for receiving 2 APMT2 cover plates. The mounting support is fastened below the GES4DB service outlet. Each with 4 knock-out openings M20 and M25 for the mounting of flexible installation hoses.

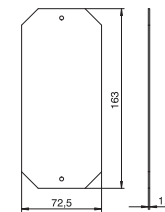


Cover plate APMT2/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 0	Grey-white	163	20	12.300	7406912

- St** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support. L = 163 mm.

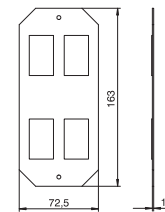


Cover plate APMT2/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 1	Grey-white	163	20	11.100	7406916

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C. L = 163 mm.

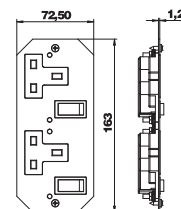


Cover plate APMT2 with two single sockets

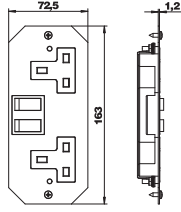
Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2xSS0	Grey-white	163	4	23.700	7407879

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with two switched single sockets for installation in mounting supports beneath GES service outlets and cassettes. Sockets with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



Cover plate APMT2 with double socket



Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2SS0	Grey-white	163	4	21.500	7407872

SI Steel

FSO Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

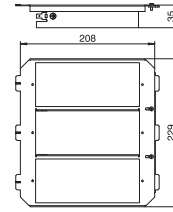


Mounting support, nominal size 9 and R9, for APMT5 cover plates

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
MT 9R9 AP 5			1	25.650	7407756

- St** Steel
- FS** Strip galvanised

Mounting support for accepting three APMT5 cover plates, which aid the installation of accessories in installation units of nominal size 9.

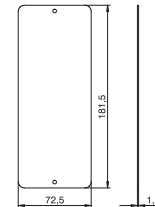


Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 0	Grey-white	181.5	20	12.700	7406904

- St** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.

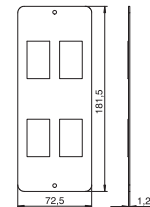


Cover plate APMT5/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 1	Grey-white	181.5	20	12.700	7406908

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.



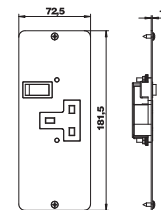
Cover plate APMT5 with single socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS SS0	Grey-white	181.5	4	18.700	7407874

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched single socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

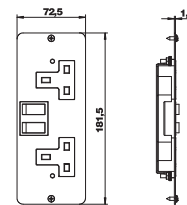


Cover plate APMT5 with double socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS 2SS0	Grey-white	181.5	4	23.200	7407870

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

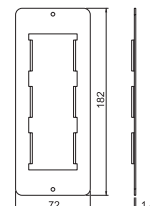


Cover plate APMT5/10

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 10	—	181.5	20	11.600	7406894

- St** Steel

Cover plate for installation of 3 Modul 45 devices.
L = 181.5 mm.






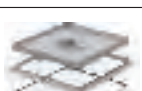




Heavy duty systems

Heavy-duty systems reliably supply areas with high load requirements with power, data and multimedia technology via the floor. Car dealerships, museums, airports, stations or hotels are typical areas of application. The construction and the material thickness is specially matched to the high load requirements. With the heavy-duty system, Ackermann made by OBO guarantees a particularly robust, safe and long-lasting installation solution.

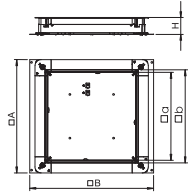
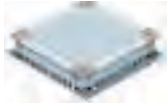


Heavy duty systems

	Underfloor box 250-3	290
	Heavy-duty frame cassette	291
	Underfloor box 350-3	292
	Heavy-duty frame cassette	293
	Height-adjustable square heavy-duty cassette	301
	Height-adjustable round heavy-duty cassette	303



UZD250-3 for screed height 70–125 mm



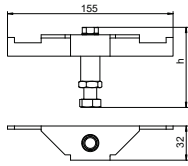
Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 250-3	367	410	262	283	70 - 125	1	420.000	7410030
UZD 115170 250-3	367	410	262	283	115 - 170	1	480.000	7410043
UZD 165220 250-3	367	410	262	283	165 - 220	1	530.000	7410052

St Steel

FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls are prepared for duct widths 190 and 250 mm.

DSSL heavy-duty support



Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DSSL2 75	75 - 110	1	97.840	7410581
DSSL2 105	105 - 140	1	111.040	7410583
DSSL2 135	135 - 170	1	121.840	7410585
DSSL2 165	165 - 200	1	132.640	7410587
DSSL2 195	195 - 230	1	143.840	7410589

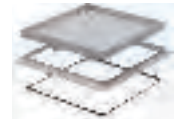
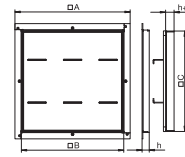
St Steel

FS Strip galvanised

The heavy-duty supports reinforce the corner areas of the type UZD-3 underfloor box for increased load requirements.

Heavy-duty frame cassette, blank, RKSL, nominal 250-3, load class 1

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RK SL1 V2 20	324	288	282	18	1	517.000	7405892
RK SL1 V2 25	324	288	282	23	1	537.000	7405896
RK SL1 V2 30	324	288	282	28	1	555.000	7405900
RK SL1 V2 40	324	288	282	38	1	608.000	7405908

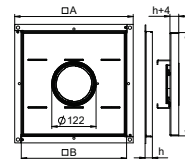


A2 Stainless steel, rustproof 1.4301

"Blank" heavy-duty frame cassette for the creation of an inspection opening in the UZD250-3 in dry or wet-cleaned floors. Load class 1 to 10 kN. Only suitable for smooth floor coverings.

Heavy-duty frame cassette for tube body, RKFSL, nominal 250-3, load class 1

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2 SL1 V2 20	324	288	282	18	1	489.000	7409482
RKF2 SL1 V2 25	324	288	282	23	1	508.000	7409484
RKF2 SL1 V2 30	324	288	282	28	1	526.000	7409486
RKF2 SL1 V2 40	324	288	282	38	1	559.000	7409490

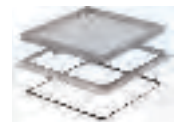
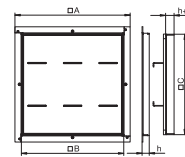


A2 Stainless steel, rustproof 1.4301

Heavy-duty frame cassette for tube body for the installation of accessories in the UZD250-3 in dry or wet-cleaned floors. Load class 1 to 10 kN.

Heavy-duty frame cassette, blank, RKSL, nominal 250-3, load class 2

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RK SL2 V2 20	324	288	282	14	1	756.000	7405932
RK SL2 V2 25	324	288	282	19	1	775.000	7405936
RK SL2 V2 30	324	288	282	24	1	794.000	7405940
RK SL2 V2 40	324	288	282	34	1	833.000	7405948

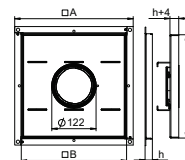


A2 Stainless steel, rustproof 1.4301

"Blank" heavy-duty frame cassette for the creation of an inspection opening in the UZD250-3 in dry or wet-cleaned floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.

Heavy-duty frame cassette for tube body, RKFSL, nominal 250-3, load class 2

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2 SL2 V2 20	324	288	282	14	1	700.000	7409522
RKF2 SL2 V2 25	324	288	282	19	1	719.000	7409524
RKF2 SL2 V2 30	324	288	282	24	1	738.000	7409526
RKF2 SL2 V2 40	324	288	282	34	1	777.000	7409530



A2 Stainless steel, rustproof 1.4301

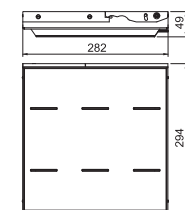
Heavy-duty frame cassette for tube body for the installation of accessories in the UZD250-3 in dry or wet-cleaned floors. Load class 2 to 20 kN.

Heavy-duty frame cassette class 2, blank, series 250-2, with handle

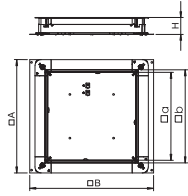
Type	Dimension A mm	Dimension C mm	Height mm	Pack Piece	Weight kg/100 pc.	Item no.
RK SL2 V2 30 MG	294	282	49	1	720.000	7405941

St Steel

"Blank" heavy-duty frame cassette for the creation of an inspection opening in the UZD250-2 or UZD 350-2 in dry or wet-cleaned floors. Load class 1 to 10 kN or load class 2 to 20 kN. Only suitable for smooth floor coverings. With grip.



UZD350-3 for screed height 70–125 mm



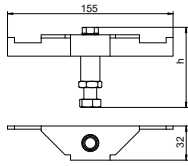
Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 350-3	467	510	362	383	70 - 125	1	590.000	7410034
UZD 115170 350-3	467	510	362	383	115 - 170	1	665.000	7410047
UZD 165220 350-3	467	510	362	383	165 - 220	1	740.000	7410056

St Steel

FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct widths of 190, 250 and 350 mm.

DSSL heavy-duty support



Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DSSL2 75	75 - 110	1	97.840	7410581
DSSL2 105	105 - 140	1	111.040	7410583
DSSL2 135	135 - 170	1	121.840	7410585
DSSL2 165	165 - 200	1	132.640	7410587
DSSL2 195	195 - 230	1	143.840	7410589

St Steel

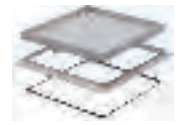
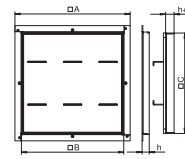
FS Strip galvanised

The heavy-duty supports reinforce the corner areas of the type UZD-3 underfloor box for increased load requirements.



Heavy-duty frame cassette, blank, RKSL, nominal 350-3, load class 1

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RK SL1 V3 20	424	388	382	18	1	897.000	7405912
RK SL1 V3 25	424	388	382	23	1	927.000	7405916
RK SL1 V3 30	424	388	382	28	1	953.000	7405920
RK SL1 V3 40	424	388	382	38	1	1,017.000	7405928

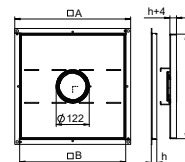


A2 Stainless steel, rustproof 1.4301

"Blank" heavy-duty frame cassette for the creation of an inspection opening in the UZD350-3 in dry or wet-cleaned floors. Load class 1 to 10 kN. Only suitable for smooth floor coverings.

Heavy-duty frame cassette for tube body, RKFSL, nominal 350-3, load class 1

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2 SL1 V3 20	424	388	382	18	1	912.000	7409502
RKF2 SL1 V3 25	424	388	382	23	1	941.000	7409504
RKF2 SL1 V3 30	424	388	382	28	1	968.000	7409506
RKF2 SL1 V3 40	424	388	382	38	1	1,032.000	7409510

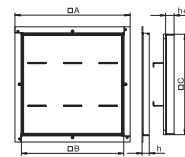


A2 Stainless steel, rustproof 1.4301

Heavy-duty frame cassette for tube body for the installation of accessories in the UZD350-3 in dry or wet-cleaned floors. Load class 1 to 10 kN.

Heavy-duty frame cassette, blank, RKSL, nominal 350-3, load class 2

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RK SL2 V3 20	424	388	382	14	1	1,346.000	7405952
RK SL2 V3 25	424	388	382	19	1	1,377.000	7405956
RK SL2 V3 30	424	388	382	24	1	1,400.000	7405960
RK SL2 V3 40	424	388	382	34	1	1,466.000	7405968

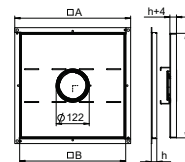


A2 Stainless steel, rustproof 1.4301

"Blank" heavy-duty frame cassette for the creation of an inspection opening in the UZD350-3 in dry or wet-cleaned floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.

Heavy-duty frame cassette for tube body, RKFSL, nominal 350-3, load class 2

Type	Dimension A mm	Dimension B mm	Dimension C mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
RKF2 SL2 V3 20	424	388	382	14	1	1,278.000	7409542
RKF2 SL2 V3 25	424	388	382	19	1	1,307.000	7409544
RKF2 SL2 V3 30	424	388	382	24	1	1,334.000	7409546
RKF2 SL2 V3 40	424	388	382	34	1	1,398.000	7409550

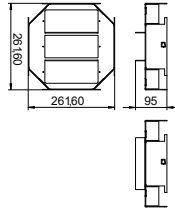


A2 Stainless steel, rustproof 1.4301

Heavy-duty frame cassette for tube body for the installation of accessories in the UZD350-3 in dry or wet-cleaned floors. Load class 2 to 20 kN.



Mounting support for UZD250-2



Type

MT250-3 3BSRKFSL

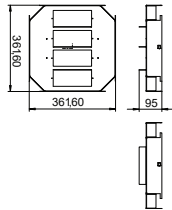
St Steel

FS Strip galvanised

Mounting support for receiving three APMT5 cover plates, which aid the installation of accessories of British Standard design beneath frame cassettes in the UZD250-3 underfloor junction and branch box.

Pack Piece	Weight kg/100 pc.	Item no.
1	93.000	7407701

Mounting support for UZD350-2



Type

MT350-3 3BSRKFSL

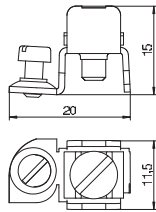
St Steel

FS Strip galvanised

Mounting support for receiving four APMT5 cover plates, which aid the installation of accessories of British Standard design beneath frame cassettes in the UZD350-3 underfloor junction and branch box.

Pack Piece	Weight kg/100 pc.	Item no.
1	190.000	7407733

Protective conductor connection bracket



Type

8AWR

St Steel

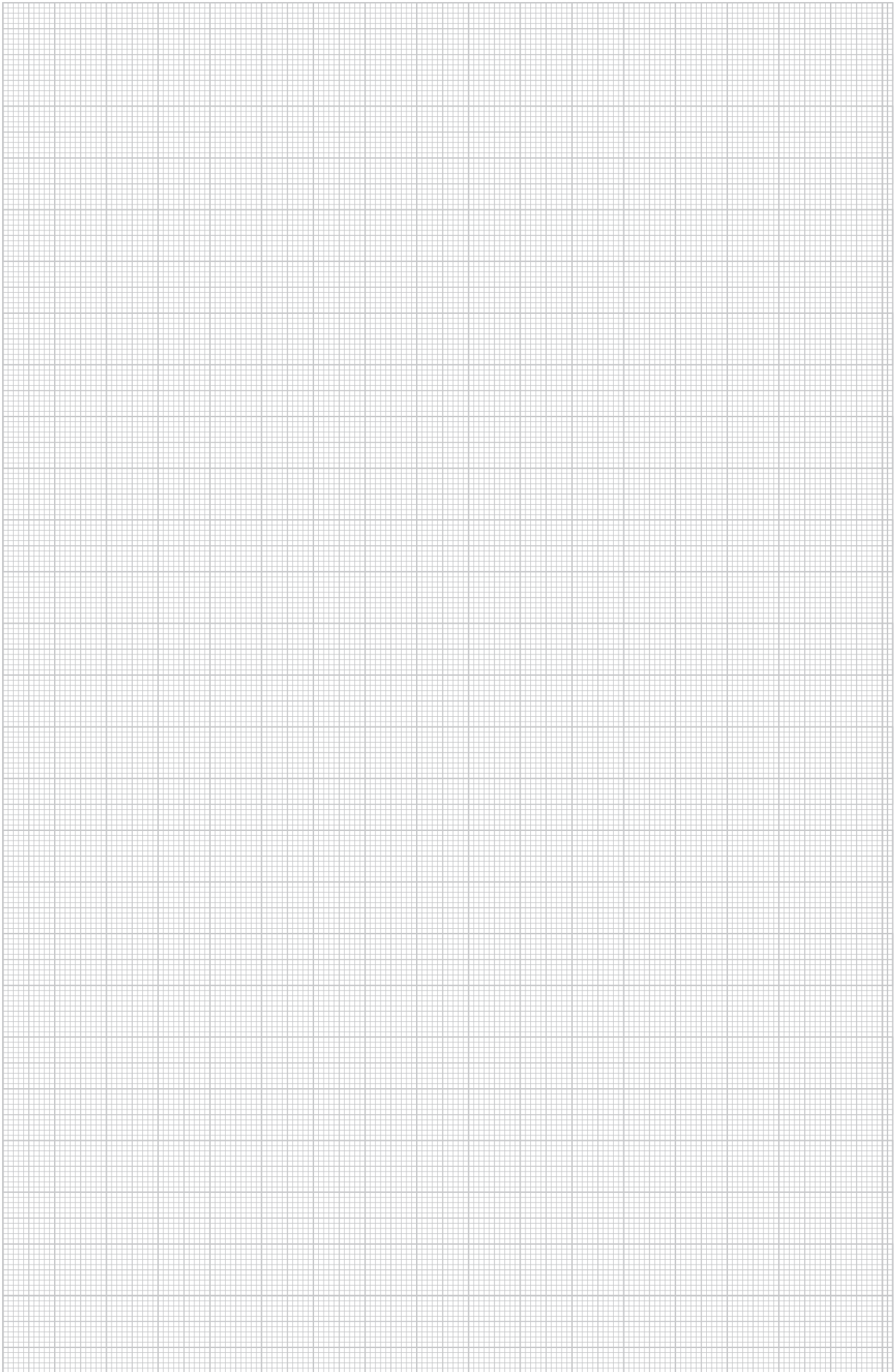
G Electrogalvanised

Protective conductor connection bracket to include steel and aluminium device installation trunking, service poles and system components of underfloor trunking systems in the protective measure.

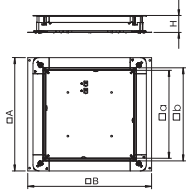
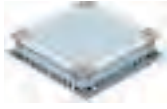
Clamping area: 2 x 1.5 – 4 mm²

Pack Piece	Weight kg/100 pc.	Item no.
10	0.610	6288704





UZD250-3 for screed height 70–125 mm



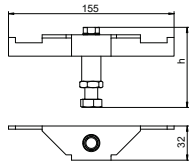
Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 250-3	367	410	262	283	70 - 125	1	420.000	7410030
UZD 115170 250-3	367	410	262	283	115 - 170	1	480.000	7410043
UZD 165220 250-3	367	410	262	283	165 - 220	1	530.000	7410052

St Steel

FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls are prepared for duct widths 190 and 250 mm.

DSSL heavy-duty support



Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DSSL2 75	75 - 110	1	97.840	7410581
DSSL2 105	105 - 140	1	111.040	7410583
DSSL2 135	135 - 170	1	121.840	7410585
DSSL2 165	165 - 200	1	132.640	7410587
DSSL2 195	195 - 230	1	143.840	7410589

St Steel

FS Strip galvanised

The heavy-duty supports reinforce the corner areas of the type UZD-3 underfloor box for increased load requirements.

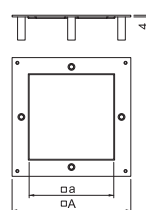


Heavy-duty mounting lid for 250-3, nominal size 4

Type	Dimension		Pack Piece	Weight kg/100 pc.	Item no.
	Dimension A mm	Dimension a mm			
DUG 250-3 4SL	282	201	1	146.500	7401404

- Sl** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the type UZD250-3 underfloor box is suitable for installation in a square heavy-duty cassette of nominal size 4. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.



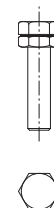
Height adjustment unit for heavy-duty mounting lid

Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- Sl** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

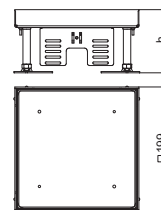


Height-adjustable heavy-duty cassette, blank, RKNSL, nominal size 4, stainless steel

Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 4 VMSL1N 20	105	20	105 - 155	A2	1	400.000	7409010

A2 Stainless steel, rustproof 1.4301

Heavy-duty "blank" square cassette of nominal size 4 for the creation of an inspection opening in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN. Only suitable for smooth floor coverings.

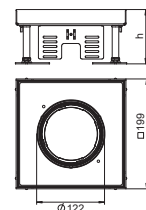


Height-adjustable heavy-duty cassette for tube body RKFNSL, nominal size 4, stainless steel

Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFN2 4 VMSL1N20	105	20	105 - 155	A2	1	367.000	7409384

A2 Stainless steel, rustproof 1.4301

Heavy-duty square cassette for tube body of nominal size 4 for the installation of accessories in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN.



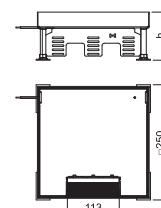
Height-adjustable cassette with brush bar, RKSBN, stainless steel

Type	Floor covering mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.

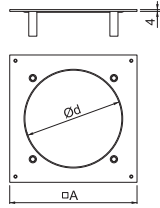
A2 Stainless steel, rustproof 1.4301

Height-adjustable cassette of nominal size 9 with cord outlet for installation of accessories in dry-cleaned floors.

Up to 11 installation devices of type FLF can be installed.



Heavy-duty mounting lid for 250-3, nominal size R4

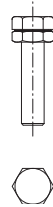


Type	Dimension A mm	Dimension d Ø mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 250-3 R4SL	282	215	1	159.300	7401406

- St** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the UZD250-3 underfloor box is suitable for the installation of a round heavy-duty cassette of nominal size R4. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.

Height adjustment unit for heavy-duty mounting lid



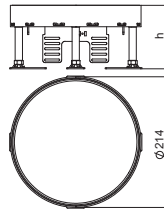
Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL75	75 - 110	1	24.917	7409680
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- St** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

Height-adjustable heavy-duty cassette, blank, RKRSL, nominal size R4, stainless steel

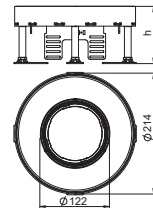


Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 4SL2 V2 20	105	20	105 - 155	A2	1	559.000	7409072
RKR2 4SL2 V2 25	109	25	109 - 159	A2	1	624.000	7409074

A2 Stainless steel, rustproof 1.4301

Round, "blank", heavy-duty cassette of nominal size R4 for the creation of an inspection opening in trunking systems, raised and cavity floors, in dry or wet-care floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.

Height-adjustable heavy-duty cassette for tube body RKFRSL, nominal size R4, stainless steel

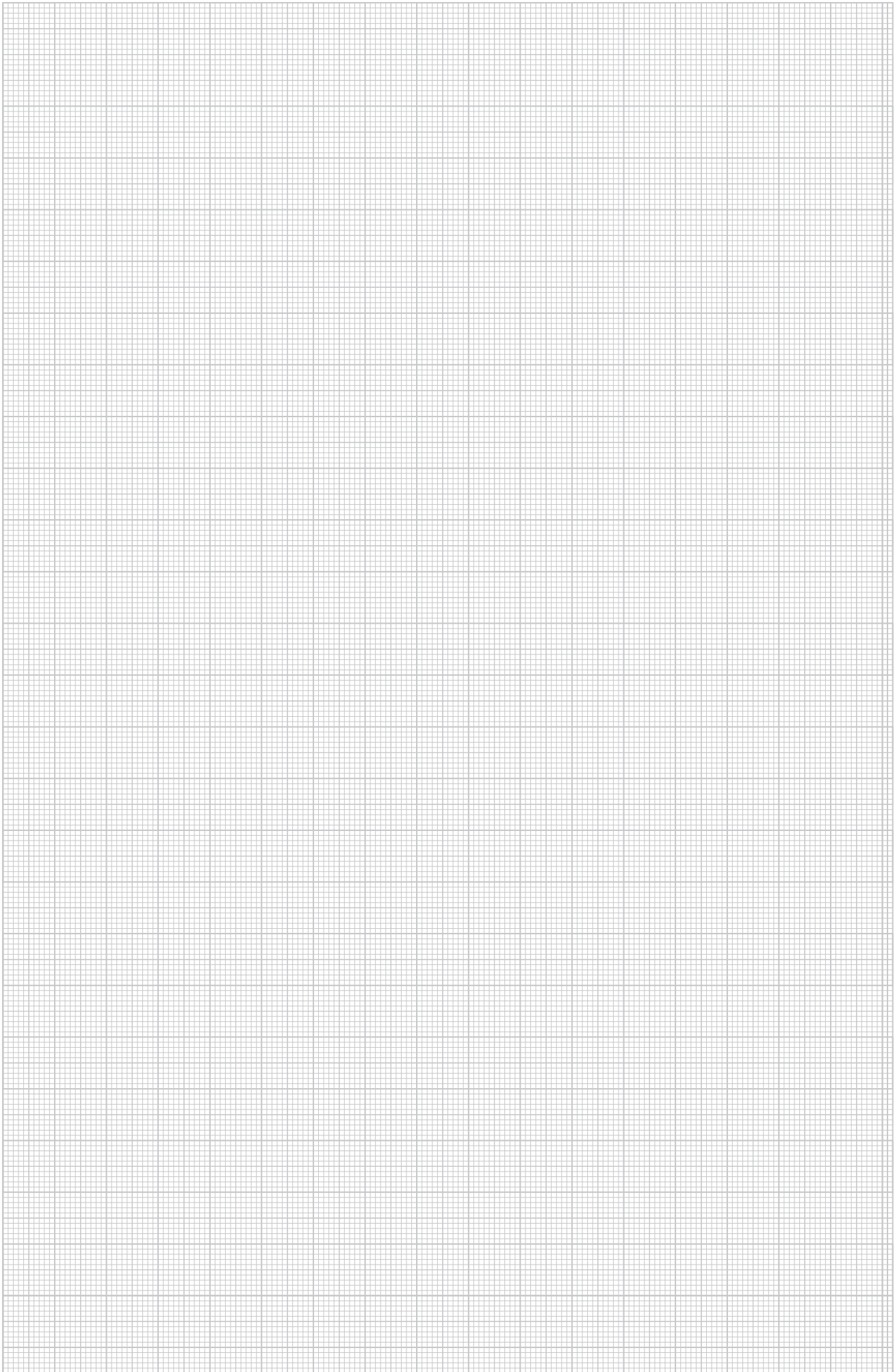


Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 4 SL2V2 20	110	20	105 - 155	A2	1	604.000	7409462
RKFR2 4 SL2V2 25	114	25	109 - 159	A2	1	669.000	7409464

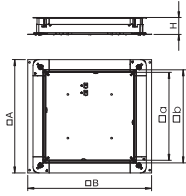
A2 Stainless steel, rustproof 1.4301

Round heavy-duty cassette for tube body of nominal size R4 for the installation of accessories in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN.





UZD350-3 for screed height 70–125 mm



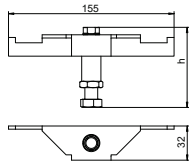
Type	Dimension A mm	Dimension B mm	Dimension a mm	Dimension b mm	Screed height mm	Pack Piece	Weight kg/100 pc.	Item no.
UZD 350-3	467	510	362	383	70 - 125	1	590.000	7410034
UZD 115170 350-3	467	510	362	383	115 - 170	1	665.000	7410047
UZD 165220 350-3	467	510	362	383	165 - 220	1	740.000	7410056

St Steel

FS Strip galvanised

Underfloor junction and branch box for screed-covered underfloor installation systems. Side walls prepared for duct widths of 190, 250 and 350 mm.

DSSL heavy-duty support



Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DSSL2 75	75 - 110	1	97.840	7410581
DSSL2 105	105 - 140	1	111.040	7410583
DSSL2 135	135 - 170	1	121.840	7410585
DSSL2 165	165 - 200	1	132.640	7410587
DSSL2 195	195 - 230	1	143.840	7410589

St Steel

FS Strip galvanised

The heavy-duty supports reinforce the corner areas of the type UZD-3 underfloor box for increased load requirements.

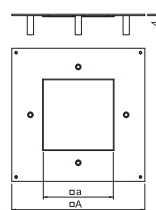


Heavy-duty mounting lid for 350-3, nominal size 4

Type	Dimension		Pack Piece	Weight kg/100 pc.	Item no.
	Dimension A mm	Dimension a mm			
DUG 350-3 4SL	383	201	1	355.600	7401408

- St** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the type UZD350-3 underfloor box is suitable for installation in a square heavy-duty cassette of nominal size 4. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.



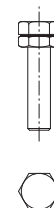
Height adjustment unit for heavy-duty mounting lid

Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- St** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

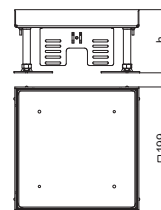


Height-adjustable heavy-duty cassette, blank, RKNSL, nominal size 4, stainless steel

Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 4 VMSL1N 20	105	20	105 - 155	A2	1	400.000	7409010

A2 Stainless steel, rustproof 1.4301

Heavy-duty "blank" square cassette of nominal size 4 for the creation of an inspection opening in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN. Only suitable for smooth floor coverings.

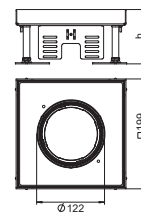


Height-adjustable heavy-duty cassette for tube body RKFNSL, nominal size 4, stainless steel

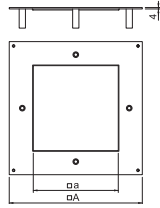
Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFN2 4 VMSL1N20	105	20	105 - 155	A2	1	367.000	7409384

A2 Stainless steel, rustproof 1.4301

Heavy-duty square cassette for tube body of nominal size 4 for the installation of accessories in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN.



Heavy-duty mounting lid for 350-3, nominal size 9

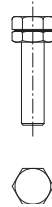


Type	Dimension A mm	Dimension a mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 9SL	383	244	1	294.400	7401410

- Sl** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the type UZD350-3 underfloor box is suitable for installation in a square heavy-duty cassette of nominal size 9. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.

Height adjustment unit for heavy-duty mounting lid



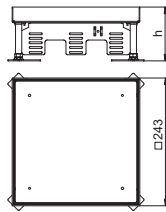
Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL75	75 - 110	1	24.917	7409680
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- Sl** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

Height-adjustable heavy-duty cassette, blank, RKNSL, nominal size 9, stainless steel

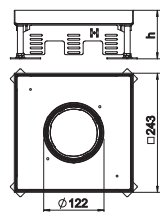


Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKN2 9 VMSL1N 16	100	16	100 - 150	A2	1	550.000	7409028
RKN2 9 VMSL1N 21	105	21	105 - 155	A2	1	563.000	7409030

A2 Stainless steel, rustproof 1.4301

Heavy-duty "blank" square cassette of nominal size 9 for the creation of an inspection opening in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN. Only suitable for smooth floor coverings.

Height-adjustable heavy-duty cassette for tube body RKFNSL, nominal size 9, stainless steel



Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFN2 9 VMSL1N16	100	16	100 - 150	A2	1	501.000	7409388
RKFN2 9 VMSL1N21	105	21	105 - 155	A2	1	514.000	7409390

A2 Stainless steel, rustproof 1.4301

Heavy-duty square cassette for tube body of nominal size 9 for the installation of accessories in trunking systems, raised or cavity floors, in dry or wet-cleaned floors. Load class 1 to 10 kN.

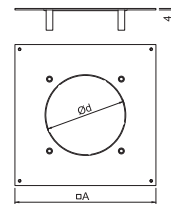


Heavy-duty mounting lid for 350-3, nominal size R4

Type	Dimension A mm	Dimension d Ø mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 R4SL	383	215	1	370.400	7401412

- St** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the UZD350-3 underfloor box is suitable for the installation of a round heavy-duty cassette of nominal size R4. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.



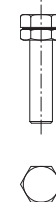
Height adjustment unit for heavy-duty mounting lid

Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL75	75 - 110	1	24.917	7409680
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- St** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

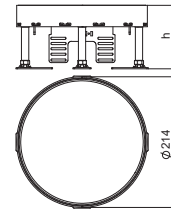


Height-adjustable heavy-duty cassette, blank, RKRSL, nominal size R4, stainless steel

Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 4SL2 V2 20	105	20	105 - 155	A2	1	559.000	7409072
RKR2 4SL2 V2 25	109	25	109 - 159	A2	1	624.000	7409074

A2 Stainless steel, rustproof 1.4301

Round, "blank", heavy-duty cassette of nominal size R4 for the creation of an inspection opening in trunking systems, raised and cavity floors, in dry or wet-care floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.

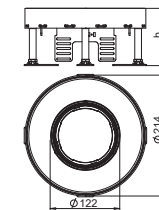


Height-adjustable heavy-duty cassette for tube body RKFRSL, nominal size R4, stainless steel

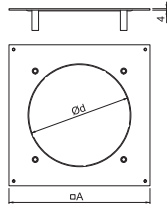
Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 4 SL2V2 20	110	20	105 - 155	A2	1	604.000	7409462
RKFR2 4 SL2V2 25	114	25	109 - 159	A2	1	669.000	7409464

A2 Stainless steel, rustproof 1.4301

Round heavy-duty cassette for tube body of nominal size R4 for the installation of accessories in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN.



Heavy-duty mounting lid for 350-3, nominal size R7

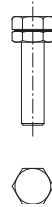


Type	Dimension A mm	Dimension d mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 R7SL	383	275	1	370.400	7401414

- Sl** Steel
- FS** Strip galvanised

The heavy-duty mounting lid for the UZD350-3 underfloor box is suitable for the installation of a round heavy-duty cassette of nominal size R7. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.

Height adjustment unit for heavy-duty mounting lid



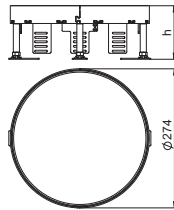
Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL75	75 - 110	1	24.917	7409680
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

- Sl** Steel
- G** Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

Height-adjustable heavy-duty cassette, blank, RKRSL, nominal size R7, stainless steel

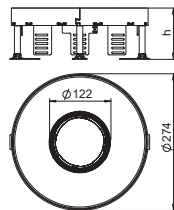


Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 7SL2 V2 20	105	20	105 - 155	A2	1	894.000	7409092
RKR2 7SL2 V2 25	109	25	109 - 159	A2	1	966.000	7409094

A2 Stainless steel, rustproof 1.4301

Round, "blank", heavy-duty cassette of nominal size R7 for the creation of an inspection opening in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.

Height-adjustable heavy-duty cassette for tube body RKFRSL, nominal size R7, stainless steel



Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 7 SL2V2 20	110	20	105 - 155	A2	1	885.000	7409466
RKFR2 7 SL2V2 25	114	25	109 - 159	A2	1	947.000	7409468

A2 Stainless steel, rustproof 1.4301

Round heavy-duty cassette for tube body of nominal size R7 for the installation of accessories in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN.



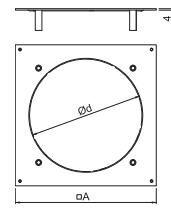
Heavy-duty mounting lid for 350-3, nominal size R9

Type	Dimension A mm	Dimension d mm	Pack Piece	Weight kg/100 pc.	Item no.
DUG 350-3 R9SL	383	305	1	252.500	7401416

St Steel

FS Strip galvanised

The heavy-duty mounting lid for the UZD350-3 underfloor box is suitable for the installation of a round heavy-duty cassette of nominal size R9. The installation opening is recessed by 3 mm and can be closed subsequently by a lid blanking plate.



Height adjustment unit for heavy-duty mounting lid

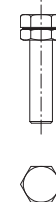
Type	Screed height mm	Pack PU	Weight kg/100 PUs	Item no.
DUG SL75	75 - 110	1	24.917	7409680
DUG SL105	105 - 140	1	36.184	7409682
DUG SL135	135 - 170	1	44.632	7409684
DUG SL165	165 - 200	1	53.586	7409686
DUG SL195	195 - 230	1	62.041	7409688

St Steel

G Electrogalvanised

The height adjustment units rated for increased load requirements permit the screed-flush height adjustment of the heavy-duty mounting lid and are to be ordered separately.

The VPE consists of four height adjustment units.

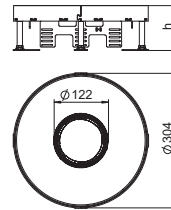


Height-adjustable heavy-duty cassette for tube body RKFRSL, nominal size R9, stainless steel

Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKFR2 9 SL2V2 20	110	20	105 - 155	A2	1	589.000	7409470
RKFR2 9 SL2V2 25	114	25	109 - 159	A2	1	647.000	7409472

A2 Stainless steel, rustproof 1.4301

Round heavy-duty cassette for tube body of nominal size R9 for the installation of accessories in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN.

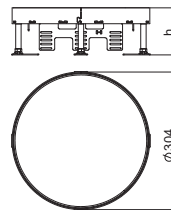


Height-adjustable heavy-duty cassette, blank, RKRSL, nominal size R9, stainless steel

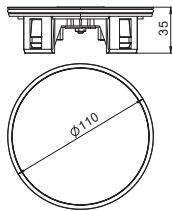
Type	Dimension h mm	Floor covering thickness mm	Floor height mm	Material	Pack Piece	Weight kg/100 pc.	Item no.
RKR2 9SL2 V2 20	105	20	105 - 155	A2	1	664.000	7409112
RKR2 9SL2 V2 25	109	25	109 - 159	A2	1	620.000	7409114

A2 Stainless steel, rustproof 1.4301

Round, "blank", heavy-duty cassette of nominal size R9 for the creation of an inspection opening in trunking systems, raised and cavity floors, in dry or wet-cleaned floors. Load class 2 to 20 kN. Only suitable for smooth floor coverings.



Tube body with cover plate, without handle clamp, for frame cassette and height-adjustable cassette



Type

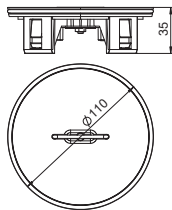
TUK2 V

- Zn Die-cast zinc
- N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover made of V2A.

Pack Piece	Weight kg/100 pc.	Item no.
1	59.000	7428141

Tube body with cover plate, with handle clamp, for frame cassette and height-adjustable cassette



Type

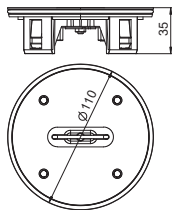
TUK2 GV

- Zn Die-cast zinc
- N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. Tube body cover and handle made of V2A.

Pack Piece	Weight kg/100 pc.	Item no.
1	59.000	7428140

Tube body with floor covering recess, with handle clamp, for frame cassette and height-adjustable cassette



Type

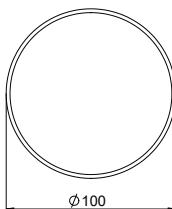
TUK2 G4

- Zn Die-cast zinc
- N Nickel-plated

Height-adjustable cord outlet for installation in RKF frame cassettes and in height-adjustable round and square RKFR and RKFN cassettes. Raised height when used, flushfloor when unused. Use in wet-care floors. With 4 mm floor covering recess for construction-side panelling with cut resistant floor covering, with handle clamp.

Pack Piece	Weight kg/100 pc.	Item no.
1	45.000	7428142

Round seal for tube body



Type

RD2 TUK2

- EPDM Ethylene propylene dien rubber DIN 1629

Round seal for tube body TUK2 - spare part.

Pack Piece	Weight kg/100 pc.	Item no.
1	0.200	7407098

Care agent for cassette seal and tube body seal



Type

PF-G

- PTFE Mounting paste based on synthetic oil

Cleaning agent for round seals RD2, flat seals FD2 QNK and tube body seal RD2TUK2.

Pack Piece	Weight kg/100 pc.	Item no.
1	0.800	7407110



Height adjustment unit RKNEV2

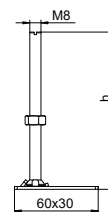
Type	Dimension h mm	Pack PU	Weight kg/100 PUs	Item no.
RK NEV2 70	70	1	20.000	7405814
RK NEV2 110	110	1	25.200	7405815
RK NEV2 150	150	1	30.000	7405816
RK NEV2 190	190	1	35.000	7405817
RK NEV2 230	230	1	40.000	7405818
RK NEV2 270	270	1	45.800	7405819

Sl Steel

G Electrogalvanised

For flush-floor height adjustment of the height adjustable cassette units and the OKB screed-flush trunking system. The VPE consists of 4 height adjustment units.

Dimension "h" mm	RKN2, 20 mm mm	RKN2, 25 mm mm	RK(S+F)N2, 20 mm mm	RK(S+F)N2, 25 mm mm	RKR2, 20/25 mm mm	RK(S+F)R2, 20/25 mm mm	OKB mm
110	140 - 190	145 - 195	145 - 190	150 - 195	145 - 195	150 - 195	133 - 173
150	180 - 230	185 - 235	185 - 230	190 - 235	185 - 235	190 - 235	173 - 213
190	220 - 270	225 - 275	225 - 270	230 - 275	225 - 275	230 - 275	213 - 253
230	260 - 310	265 - 315	265 - 310	270 - 315	265 - 315	270 - 315	253 - 293
270	300 - 350	305 - 355	305 - 350	310 - 355	305 - 355	310 - 355	293 - 333
70	100 - 150	105 - 155	105 - 150	110 - 155	105 - 155	110 - 155	93 - 133



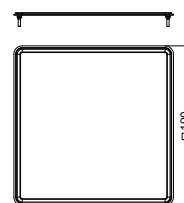
Dimensions

Flat seal for square height-adjustable cassette, nominal size (spare part)

Type	Pack Piece	Weight kg/100 pc.	Item no.
FD 4 QNK2	1	1.300	7407107
FD 9 QNK2	1	1.700	7407109

EPDM Ethylene propylene dien rubber DIN 1629

Flat seal for height-adjustable square cassettes RKN2 and RKFN2 of nominal sizes 4 and 9.

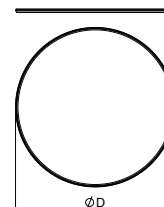


Round seal for height-adjustable round cassette (spare part)

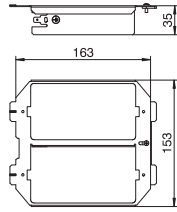
Type	Pack Piece	Weight kg/100 pc.	Item no.
RD R4 NK2	1	1.300	7407073
RD R7 NK2	1	1.700	7407074
RD R9 NK2	1	1.500	7407075

EPDM Ethylene propylene dien rubber DIN 1629

Round seal for height-adjustable round cassettes RKR2 and RKFR2 of nominal sizes R4, R7 and R9.



Mounting support, nominal size 4 and R4, for APMT2 cover plates



Type

MT 4R4 AP 2

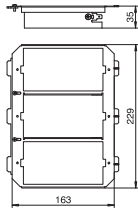
SI Steel

FS Strip galvanised

Mounting support for accepting APMT2 cover plates, which aid the installation of accessories in installation units of nominal sizes 4 and R4.

Pack Piece	Weight		Item no.
	kg/100 pc.		
1	12.310		7407748

Mounting support, nominal size 6, for APMT2 cover plates



Type

MT 6 AP 2

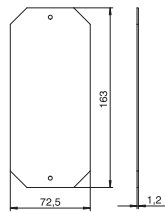
SI Steel

FS Strip galvanised

Mounting support for accepting three APMT2 cover plates, which aid the installation of accessories in installation units of nominal size 6.

Pack Piece	Weight		Item no.
	kg/100 pc.		
1	20.000		7407752

Cover plate APMT2/0



Type	Colour	Length mm
AP MT 2 0	Grey-white	163

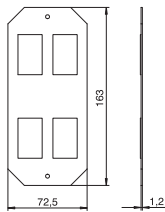
SI Steel

FSO Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 163 mm.

Pack Piece	Weight		Item no.
	kg/100 pc.		
20	12.300		7406912

Cover plate APMT2/1



Type	Colour	Length mm
AP MT 2 1	Grey-white	163

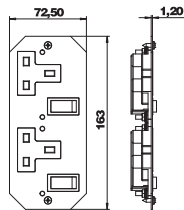
SI Steel

FSO Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 163 mm.

Pack Piece	Weight		Item no.
	kg/100 pc.		
20	11.100		7406916

Cover plate APMT2 with two single sockets



Type	Colour	Length mm
AP MT 2 BS 2xSS0	Grey-white	163

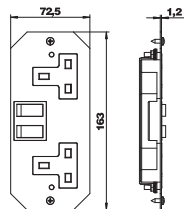
SI Steel

FSO Strip galvanised/organically coated

Cover plate with two switched single sockets for installation in mounting supports beneath GES service outlets and cassettes. Sockets with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

Pack Piece	Weight		Item no.
	kg/100 pc.		
4	23.700		7407879

Cover plate APMT2 with double socket



Type	Colour	Length mm
AP MT 2 BS 2SS0	Grey-white	163

SI Steel

FSO Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

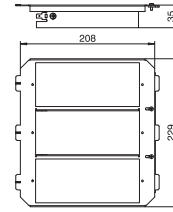
Pack Piece	Weight		Item no.
	kg/100 pc.		
4	21.500		7407872

Mounting support, nominal size 9 and R9, for APMT5 cover plates

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
MT 9R9 AP 5			1	25.650	7407756

- St** Steel
- FS** Strip galvanised

Mounting support for accepting three APMT5 cover plates, which aid the installation of accessories in installation units of nominal size 9.

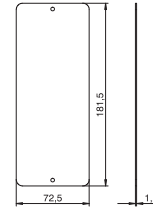


Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 0	Grey-white	181.5	20	12.700	7406904

- St** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.

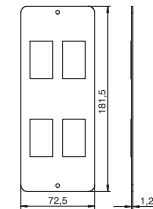


Cover plate APMT5/1

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 1	Grey-white	181.5	20	12.700	7406908

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.



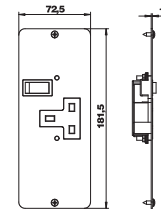
Cover plate APMT5 with single socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS SS0	Grey-white	181.5	4	18.700	7407874

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched single socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

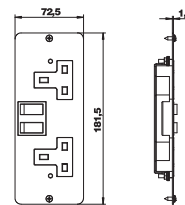


Cover plate APMT5 with double socket

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS 2SS0	Grey-white	181.5	4	23.200	7407870

- St** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.

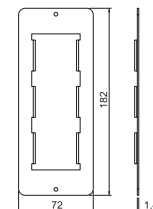


Cover plate APMT5/10

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 10	—	181.5	20	11.600	7406894

- St** Steel

Cover plate for installation of 3 Modul 45 devices.
L = 181.5 mm.





Floor sockets and floor boxes: for perfect power and data connections

The range of UDHOME complete units can position power, data and multimedia technology exactly where they are required. Floor sockets and floor boxes of the UDHOME family are mounted directly on the raw floor and connected with flexible installation pipes – it couldn't be simpler.






UDHOME2

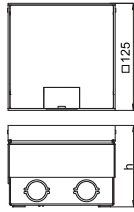


UDHOME4

UDHOME floor sockets

	Floor socket – UDHOME2	313
	Floor box – UDHOME4	317
	Floor box – UDHOME9	319

UDHOME2 floor socket, with stainless steel lid, equipped



Type	Dimension h mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 BV V	95	95 - 115	1	150.000	7368384

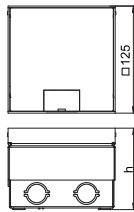
A2 Stainless steel, rustproof 1.4303

Square floor socket for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 20 mm.

Surfaces visible in the floor covering made of: Stainless steel.

The scope of delivery contains a double protective contact socket (VDE). Up to two modular data sockets (Keystones) can be installed with optional mounting supports.

UDHOME2 floor socket, with stainless steel lid, freely equippable



Type	Dimension h mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 BV	95	95 - 115	1	150.000	7427019
UDHOME2 M V	95	95 - 115	1	214.000	7427088

CuZn Brass A2 Stainless steel, rustproof 1.4303

CuZn Brass-coated

Square floor socket for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 20 mm.

Up to two Modul45® sockets can be installed. In addition, up to two modular data modules (Keystones) can be installed with optional mounting supports. Surfaces visible in the floor covering made of: Brushed stainless steel.



UDHOME2 floor socket, with floor covering recess in stainless steel cover, equipped

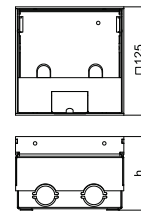
Type	Dimension h mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 V BS	85	1	210.000	7368392

A2 Stainless steel, rustproof 1.4301

GUF Brushed and laminated

Square installation unit for use in dry-care cavity and screed floors. With recess in the hinged cover for the floor covering. Installation housing with pre-marked insertion openings for pipes (M25). Cover adjustable to top edge of floor covering using four height adjustment supports. The minimum installation depth is 85 mm, the height adjustment range + 20 mm. The scope of delivery contains one BS socket with switch and a mounting support for up to two LJ6C data modules.

Surfaces visible in the floor covering made of brushed stainless steel.



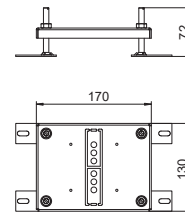
Height extension for UDHOME2 floor socket

Type	Height adjustment range mm	Pack Piece	Weight kg/100 pc.	Item no.
HE60 UDHOME2	10 - 60	1	73.400	7368400

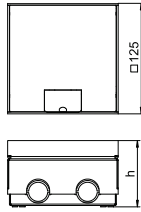
St Steel

FS Strip galvanised

Height-adjustable extension for UDHOME2 floor socket.



UDHOME2 floor socket, with stainless steel cover, equipped



Type	Dimension h mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 BV BS	75	1	185.000	7368393

A2 Stainless steel, rustproof 1.4301

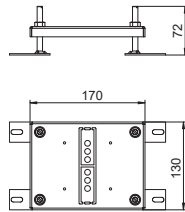
GUF Brushed and laminated

Square installation unit for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipes (M25). Cover adjustable to top edge of floor covering using four height adjustment supports. The minimum installation depth is 75 mm, the height adjustment range + 20 mm.

The scope of delivery contains one BS socket with switch and a mounting support for up to two LJ6C data modules.

Surfaces visible in the floor covering made of brushed stainless steel.

Height extension for UDHOME2 floor socket



Type	Height adjustment range mm	Pack Piece	Weight kg/100 pc.	Item no.
HE60 UDHOME2	10 - 60	1	73.400	7368400

St Steel

FS Strip galvanised

Height-adjustable extension for UDHOME2 floor socket.



UDHOME2 floor socket, with floor covering recess in stainless steel lid, equipped

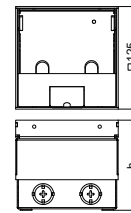
Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 V V	110	110 - 130	15	1	210.000	7368399

A2 Stainless steel, rustproof 1.4303

Square floor socket with floor covering recess for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 110 mm, the height-adjustment range + 20 mm.

Surfaces visible in the floor covering made of: Stainless steel.

The scope of delivery contains a double protective contact socket (VDE). Up to two modular data sockets (Keystones) can be installed with optional mounting supports.



UDHOME2 floor socket, with floor covering recess in stainless steel lid, freely equippable

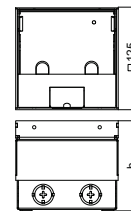
Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME2 V	110	110 - 130	15	1	206.000	7427090

A2 Stainless steel, rustproof 1.4303

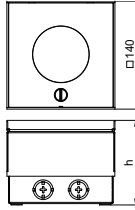
Square floor socket with floor covering recess for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 110 mm, the height-adjustment range + 20 mm.

Surfaces visible in the floor covering made of: Stainless steel.

Up to two Modul45® sockets can be installed. In addition, up to two modular data modules (Keystones) can be installed with optional mounting supports.



UDHOME2 floor socket, with tube body, double VDE, stainless steel



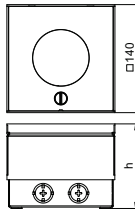
Type	Dimen- sion mm	Floor h height mm	Pack	Weight	Item no.
			Piece	kg/100 pc.	
UDHOME2 VF V	110	110 - 130	1	323.000	7368410

A2 Stainless steel, rustproof

Square floor socket for use in wet-care cavity and screed floors. Cable exit for height-adjustable tube body. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 110 mm, the height-adjustment range + 20 mm.

The scope of delivery contains a double protective contact socket. Up to two modular data sockets (Keystones) can be installed with optional mounting supports.

UDHOME2 floor socket, with tube body, freely equippable, stainless steel



Type	Dimen- sion mm	Floor h height mm	Pack	Weight	Item no.
			Piece	kg/100 pc.	
UDHOME2 VF	110	110 - 130	1	315.000	7427095

A2 Stainless steel, rustproof

Square floor socket for use in wet-care cavity and screed floors. Installation housing with pre-marked insertion openings for empty pipelines (M20/M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 110 mm, the height-adjustment range + 20 mm.

Up to two Modul45® sockets can be installed. Up to two modular data sockets (Keystones) can be installed with optional mounting supports.



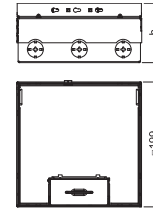
UDHOME4 floor box, freely equippable, stainless steel

Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME4 2V	95	95 - 125	15	1	384.000	7427232

A2 Stainless steel, rustproof 1.4301

Square floor box for use in dry-cleaned cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

Surfaces visible in the floor covering made of stainless steel.



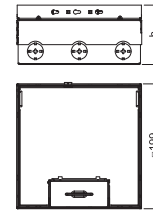
UDHOME4 floor box, freely equippable, brass

Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME4 2M	95	95 - 125	15	1	344.800	7427236

CuZn Brass

Square floor box for use in dry-cleaned cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

Surfaces visible in the floor covering made of brass.

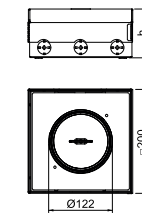


UDHOME4 floor box for tube body

Type	Dimension h mm	Screed height mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHome4 2VF	100	—	100 - 130	1	500.000	7427201

A2 Stainless steel, rustproof 1.4301

Square installation unit for use in wet-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height adjustment supports. 15 mm floor covering recess in the hinged lid. With installation opening for tube body TUK. The minimum installation depth is 118 mm, the height adjustment range +18 mm. Designed for installations compliant with British Standard. Surfaces visible in the floor covering made of: .



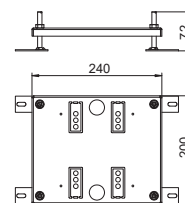
Height extension for UDHOME4 floor box

Type	Height adjustment range mm	Pack Piece	Weight kg/100 pc.	Item no.
HE60 UDHOME4	10 - 60	1	109.800	7427440

St Steel

FS Strip galvanised

Height-adjustable expansion for floor box UDHOME4.



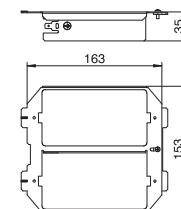
Mounting support, nominal size 4 and R4, for APMT2 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 4R4 AP 2	1	12.310	7407748

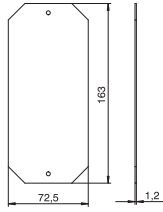
St Steel

FS Strip galvanised

Mounting support for accepting APMT2 cover plates, which aid the installation of accessories in installation units of nominal sizes 4 and R4.



Cover plate APMT2/0

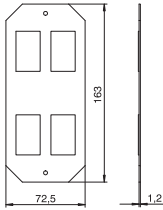


Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 0	Grey-white	163	20	12.300	7406912

- Si** Steel
- FSO** Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 163 mm.

Cover plate APMT2/1

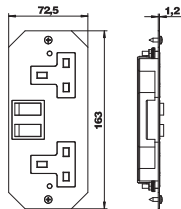


Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 1	Grey-white	163	20	11.100	7406916

- Si** Steel
- FSO** Strip galvanised/organically coated

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 163 mm.

Cover plate APMT2 with double socket



Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT2 BS 2SS0	Grey-white	163	4	21.500	7407872

- Si** Steel
- FSO** Strip galvanised/organically coated

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes.

Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



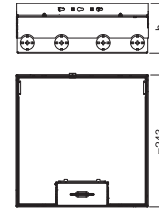
UDHOME9 floor box, freely equippable, stainless steel

Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME9 2V	95	95 - 125	15	1	470.000	7427324

A2 Stainless steel, rustproof 1.4301

Square floor box for use in dry-cleaned cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

Surfaces visible in the floor covering made of stainless steel.



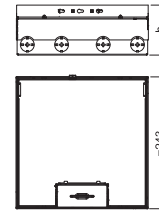
UDHOME9 floor box, freely equippable, brass

Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME9 2M	95	95 - 125	15	1	482.000	7427328

CuZn Brass

Square floor box for use in dry-cleaned cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

Surfaces visible in the floor covering made of brass.



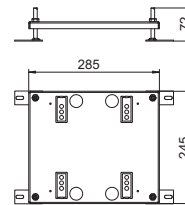
Height extension for UDHOME9 floor box

Type	Height adjustment range mm	Pack Piece	Weight kg/100 pc.	Item no.
HE60 UDHOME9	10 - 60	1	145.700	7427444

St Steel

FS Strip galvanised

Height-adjustable expansion for floor box UDHOME9.



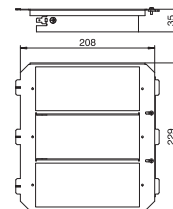
Mounting support, nominal size 9 and R9, for APMT5 cover plates

Type	Pack Piece	Weight kg/100 pc.	Item no.
MT 9R9 AP 5	1	25.650	7407756

St Steel

FS Strip galvanised

Mounting support for accepting three APMT5 cover plates, which aid the installation of accessories in installation units of nominal size 9.



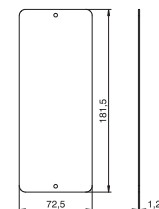
Cover plate APMT5/0

Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 0	Grey-white	181.5	20	12.700	7406904

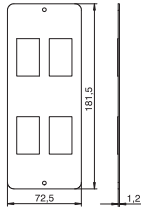
St Steel

FSo Strip galvanised/organically coated

For blanking locking on an unused compartment in an MT mounting support.
L = 181.5 mm.



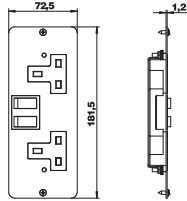
Cover plate APMT5/1



Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 1	Grey-white	181.5	20	12.700	7406908
Si	Steel				
FSO	Strip galvanised/organically coated				

Cover plate for the installation of 4 data connection sockets of design LJU6C.
L = 181.5 mm.

Cover plate APMT5 with double socket



Type	Colour	Length mm	Pack Piece	Weight kg/100 pc.	Item no.
AP MT5 BS 2SS0	Grey-white	181.5	4	23.200	7407870
Si	Steel				
FSO	Strip galvanised/organically coated				

Cover plate with a switched double socket for installation in mounting supports beneath GES service outlets and cassettes. Socket with increased contact protection with screw connection, 3-pole, 13 A, 250 V~, corresponds to BS 1363.



UDHome4 service outlet, with mounting box, without socket, stainless steel

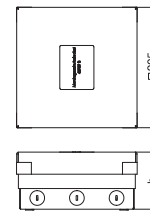


Type	Dimension h mm	Screed height mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME4 2V GB U	95	95 - 110	95 - 125	1	398.500	7427240

A2 Stainless steel, rustproof 1.4301

Square installation unit for use in dry-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to top edge of floor covering using four height adjustment supports. 15 mm floor covering recess in the hinged lid. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

The scope of delivery contains two empty GB2 mounting boxes for construction-side fittings. Surfaces visible in the floor covering made of: Stainless steel, material 1.4301.



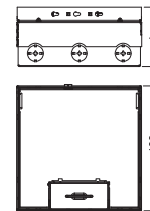
UDHOME4 floor box, freely equippable, stainless steel

Type	Dimension h mm	Floor height mm	Floor covering thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHOME4 2V	95	95 - 125	15	1	384.000	7427232

A2 Stainless steel, rustproof 1.4301

Square floor box for use in dry-cleaned cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height-adjustment supports. The minimum installation depth is 95 mm, the height-adjustment range + 30 mm.

Surfaces visible in the floor covering made of stainless steel.

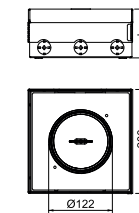


UDHOME4 floor box for tube body

Type	Dimension h mm	Screed height mm	Floor height mm	Pack Piece	Weight kg/100 pc.	Item no.
UDHome4 2VF	100	—	100 - 130	1	500.000	7427201

A2 Stainless steel, rustproof 1.4301

Square installation unit for use in wet-care cavity and screed floors. Installation housing with pre-marked insertion openings for pipelines (M25). Cover adjustable to the top edge of the floor covering using four height adjustment supports. 15 mm floor covering recess in the hinged lid. With installation opening for tube body TUK. The minimum installation depth is 118 mm, the height adjustment range +18 mm. Designed for installations compliant with British Standard. Surfaces visible in the floor covering made of: .





GES R2 floor sockets

The round floor sockets of the GES R2 series supply data and power exactly where they are required. Their handling is simple: The connection lines are inserted in the compact installation space and that space is closed off with a lid. Depending on the lid version, the floor sockets are suitable for dry or wet-cleaned floors.

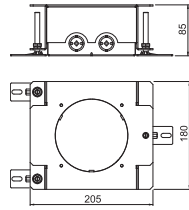


GES R2 floor sockets

	Screed box and installation socket	324
	Hinged cover, metal	326
	Tube body cover	327
	Blanking cover, metal	328
	Plastic hinged cover and blanking cover	329
	Accessories	330



Screed box for GES R2

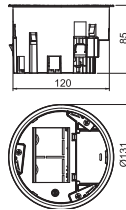


Type	Screed height mm	Installation diameter	Pack	Weight	Item no.
			Piece	kg/100 pc.	
UD GES R2	85 - 130	122	1	218.000	7428526

- St** Steel
- FS** Strip galvanised

Height-adjustable screed box for the installation of the installation socket of the GES R2 floor socket.
With 2x2 insertion openings for installation pipes (M20/M25).

Installation socket, 1.5 empty



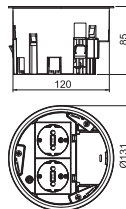
Type	Installation depth mm	Pack	Weight	Item no.
		Piece	kg/100 pc.	
MT R2 1.5	85	1	19.500	7408836

- PA** Polyamide

Installation socket for GES R2 floor socket for mounting in UD GES R2 screed socket and in raised floor plates with an installation opening diameter of 122 mm.

Included in the delivery is a cover plate for the installation of 1.5x Modul 45 sockets (BS, SA). Up to two modular data sockets (Keystones) can be installed with optional mounting plate.

Installation box, double, VDE



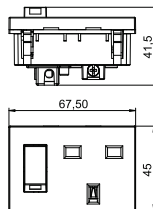
Type	Installation depth mm	Installation diameter	Pack	Weight	Item no.
			Piece	kg/100 pc.	
MT R2 VDE	85	122	1	26.800	7408832

- PA** Polyamide

Installation socket for GES R2 floor socket for mounting in UD GES R2 screed socket and in raised floor plates with an installation opening diameter of 122 mm.

The scope of delivery contains a double protective contact socket (VDE). Up to two modular data sockets (Keystones) can be installed with optional mounting plate.

Socket 0° with switch, British Standard, single

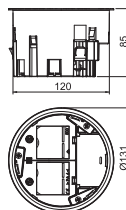


Type	Colour	Pack	Weight	Item no.
		Piece	kg/100 pc.	
STD-BS0G RW1.5	Pure white	1	6.000	6120724

- PC** Polycarbonate

Socket, single 0°, with switch, British Standard, conforms to BS 1363, with increased touch protection, with screw terminals, 2-pin, 13 A, 250 V~.

Installation socket, 1+1 empty



Type	Installation depth mm	Installation diameter	Pack	Weight	Item no.
			Piece	kg/100 pc.	
MT R2 1-1	85	122	1	19.800	7408838

- PA** Polyamide

Installation socket for GES R2 floor socket for mounting in UD GES R2 screed socket and in raised floor plates with an installation opening diameter of 122 mm.

The scope of supply contains a partition and two cover plates for the installation of individual Modul 45 devices. Up to two modular data sockets (Keystones) can be installed with optional mounting plate.

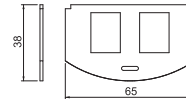


Mounting plate for data technology, type A

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP R2 2A	1	1.960	7408802

A2 Stainless steel, rustproof 1.4301

Mounting plate to accept two data connection modules of the following types: AMP TYCO: Standard 110Connect, SL Series 110Connect and Toolless, AMP-Twist; Brand-Rex: unshielded; GG45; TKM RJ MOD; Nexans: LANmark with Adapter-Clip; Siemon CAT6; 3M K6 and K10.
Dimensions of a mounting opening in mm: 20.10 x 14.80.

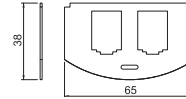


Mounting plate for data technology, type B

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP R2 2B	1	1.940	7408804

A2 Stainless steel, rustproof 1.4301

Mounting plate to accept two connection modules for data connection modules of the following types BTR: E-DAT; Dätwyler: MS and MS-N; Kerpen: VarioKeystone.
Dimensions of a mounting opening in mm: 19.35/21.55 x 14.85.

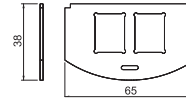


Mounting plate for data technology, type C

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP R2 2C	1	1.950	7408806

A2 Stainless steel, rustproof 1.4301

Mounting plate to accept two data connection modules of the following types: Brand-Rex: shielded; EKU: E-Stone; Dätwyler: KS-T, MS-K and KU-T module; R&M: Snap-In and Keystone; Rutenbeck: UM and UMflex; SETEC: MKJ, UKJ and XKJ; Siemon TERA; Telegärtner: AMJ and UMJ.
Dimensions of a mounting opening in mm: 19.30 x 14.80.

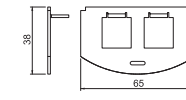


Mounting plate for data technology, type F

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP R2 2F	1	2.190	7408808

A2 Stainless steel, rustproof 1.4301

Mounting plate to accept two data connection modules, type Avaya/Systemax: M series.
Dimensions of a mounting opening in mm: 17.40 x 16.60.

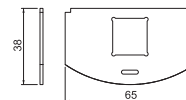


Mounting plate for data technology, type LE

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP R2 LE	1	2.250	7408810

A2 Stainless steel, rustproof 1.4301

Mounting support to accept two data connection modules of the following types: LexCom 125 and 250.
Dimensions of a mounting opening in mm: 18.30 x 17.20.

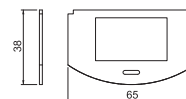


Mounting plate for data technology, type LJUC

Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
MP 2R LJUC	1	1.700	7408812

A2 Stainless steel, rustproof 1.4301

Mounting plate for receiving a data connection module type LJUC6C.
Dimensions of a mounting opening in mm: 36.2 x 22.0.

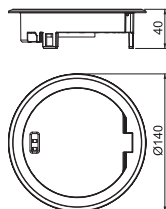


Metal hinged cover for GES R2 floor socket



Hinged cover with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket. When closed, the floor socket fulfils the requirement of EN 50085-2-2 for wet-cleaned floors.

Hinged lid with locking slider, nickel



Type

GES R2 Ni

Zn Die-cast zinc

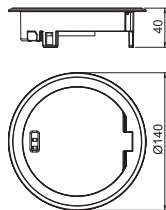
N Nickel-plated

Hinged cover with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

When closed, the floor socket can be wet-cleaned.

Pack	Weight	Item no.
Piece	kg/100 pc.	
1	58.500	7408850

Hinged lid with locking slider, old brass



Type

GES R2 CuZn

Zn Die-cast zinc

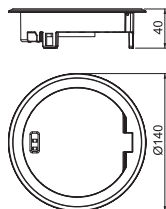
CuZn Brass-coated

Hinged cover with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

When closed, the floor socket can be wet-cleaned.

Pack	Weight	Item no.
Piece	kg/100 pc.	
1	58.500	7408852

Hinged lid with locking slider, old copper



Type

GES R2 Cu

Zn Die-cast zinc

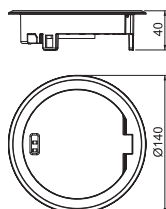
Cu Copper-plated

Hinged cover with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

When closed, the floor socket can be wet-cleaned.

Pack	Weight	Item no.
Piece	kg/100 pc.	
1	58.500	7408854

Hinged lid with locking slider, chromium



Type

GES R2 Cr

Zn Die-cast zinc

CR Chrome-plated

Hinged cover with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

When closed, the floor socket can be wet-cleaned.

Pack	Weight	Item no.
Piece	kg/100 pc.	
1	58.500	7408856





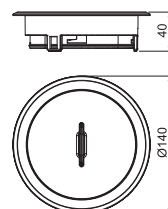
Tube body with handle clamp for GES R2 floor socket for direct installation in the MT R2 installation socket. The tube body fulfils the requirements of EN 50085-2-2 for wet-cleaned floors, also when opened.

Tube body with handle clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
GES R2T Ni	1	114.100	7408860

- Zn Die-cast zinc
- N Nickel-plated

Tube body with handle clamp for GES R2 floor socket for direct installation in the MT R2 installation socket.
The tube body fulfils the requirements of EN 50085-2-2 for wet-cleaned floors, also when opened.

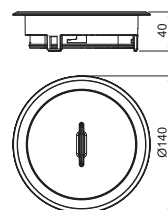


Tube body with handle clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
GES R2T CuZn	1	114.100	7408862

- Zn Die-cast zinc
- CuZn Brass-coated

Tube body with handle clamp for GES R2 floor socket for direct installation in the MT R2 installation socket.
The tube body fulfils the requirements of EN 50085-2-2 for wet-cleaned floors, also when opened.

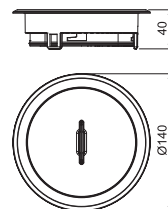


Tube body with handle clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
GES R2T Cu	1	114.100	7408864

- Zn Die-cast zinc
- Cu Copper-plated

Tube body with handle clamp for GES R2 floor socket for direct installation in the MT R2 installation socket.
The tube body fulfils the requirements of EN 50085-2-2 for wet-cleaned floors, also when opened.

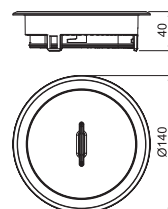


Tube body with handle clamp

Type	Pack Piece	Weight kg/100 pc.	Item no.
GES R2T Cr	1	114.100	7408866

- Zn Die-cast zinc
- CR Chrome-plated

Tube body with handle clamp for GES R2 floor socket for direct installation in the MT R2 installation socket.
The tube body fulfils the requirements of EN 50085-2-2 for wet-cleaned floors, also when opened.



Blanking lid for floor socket GES R2



Blanking cover with Allen slot for GES R2 floor socket for direct installation in the MT R2 installation socket. The lid exit can be used as a cable outlet. When closed, the floor socket fulfils the requirement of EN 50085-2-2 for wet-cleaned floors.

Service outlet, blank, with Allen slot



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
GES R2B Ni	1	58.200	7408870

Zn Die-cast zinc
N Nickel-plated

Blanking lid with Allen screw with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

The lid version can be used as a cable outlet.
When closed, the floor socket can be wet-cleaned.

Service outlet, blank, with Allen slot



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
GES R2B CuZn	1	58.200	7408872

Zn Die-cast zinc
CuZn Brass-coated

Blanking lid with Allen screw with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

The lid version can be used as a cable outlet.
When closed, the floor socket can be wet-cleaned.

Service outlet, blank, with Allen slot



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
GES R2B Cu	1	58.200	7408874

Zn Die-cast zinc
Cu Copper-plated

Blanking lid with Allen screw with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

The lid version can be used as a cable outlet.
When closed, the floor socket can be wet-cleaned.

Service outlet, blank, with Allen slot



Type	Pack	Weight	Item no.
	Piece	kg/100 pc.	
GES R2B Cr	1	58.200	7408876

Zn Die-cast zinc
CR Chrome-plated

Blanking lid with Allen screw with locking slider for GES R2 floor socket for direct installation in the MT R2 installation socket.

The lid version can be used as a cable outlet.
When closed, the floor socket can be wet-cleaned.





Hinged cover with cord outlet for GES R2 floor socket for direct installation in the MT R2 installation socket. For use in dry-cleaned floors.

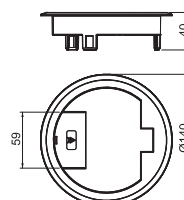
Hinged cover with cord outlet

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES R2 9011	Graphite black	1	8.800	7405084

PA Polyamide

Hinged cover with cord outlet for GES R2 floor socket for direct installation in the MT R2 installation socket.

For use in dry-cleaned floors.



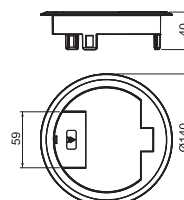
Hinged cover with cord outlet

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES R2 7011	Iron grey	1	8.800	7405082

PA Polyamide

Hinged cover with cord outlet for GES R2 floor socket for direct installation in the MT R2 installation socket.

For use in dry-cleaned floors.



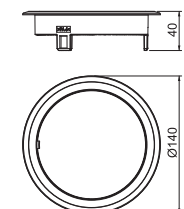
Service outlet, blank, without floor covering recess

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES R2B 7011	Iron grey	1	8.150	7405086

PA Polyamide

Blanking lid with cord outlet for GES R2 floor socket for direct installation in the MT R2 installation socket.

For use in dry-cleaned floors.



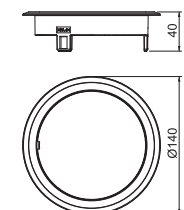
Service outlet, blank, without floor covering recess

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
GES R2B 9011	Graphite black	1	8.150	7405088

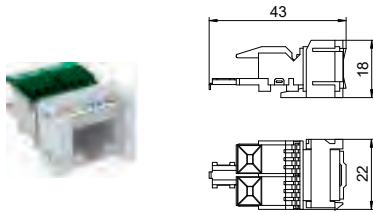
PA Polyamide

Blanking lid with cord outlet for GES R2 floor socket for direct installation in the MT R2 installation socket.

For use in dry-cleaned floors.



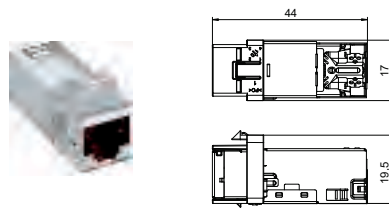
Connection module Cat. 5, unshielded, snap-in



Type	Pack		Weight	Item no.
	Piece	kg/100 pc.		
ASM-C5 S	1	1.120		6117347

Connection module Cat. 5e unshielded, with a RJ45 slot. Including a dust cover, a cable tie, a snap-in fastening frame and mounting instructions. Suitable for installation in support plates, type MTM 2C and MTM 3C, mounting plate type MPR2 2C, mounting support type MTGE2 2C, MTGE2 15 2C and MTGE2 F 2C.

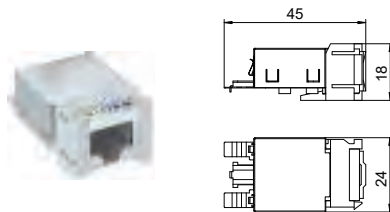
Connection module Cat. 6A, shielded, snap-in



Type	Pack		Weight	Item no.
	Piece	kg/100 pc.		
ASM-C6A G	1	1.630		6117346

Connection module Cat. 6A (ISO) shielded, with an RJ45 slot. Including an EMC screen hood, a dust cover, a cable tie, a Keystone fastening frame and mounting instructions. Suitable for installation in the data technology supports of type DTG-2C and DTS-2C, support plate of type MTM 2C and MTM 3C, mounting plate of type MPR2 2C, mounting supports of type MTGE2 2C, MTGE2 15 2C and MTGE2 F 2C.

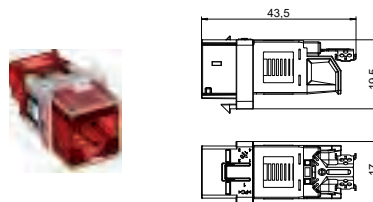
Connection module Cat. 5, shielded, snap-in



Type	Pack		Weight	Item no.
	Piece	kg/100 pc.		
ASM-C5 GS	1	1.920		6117343

Connection module Cat. 5e shielded, with a RJ45 slot. Including an EMC screen hood, a dust cover, a cable tie, a snap-in fastening frame and mounting instructions. Suitable for installation in support plates, type MTM 2C and MTM 3C, mounting plate type MPR2 2C, mounting support type MTGE2 2C, MTGE2 15 2C and MTGE2 F 2C.

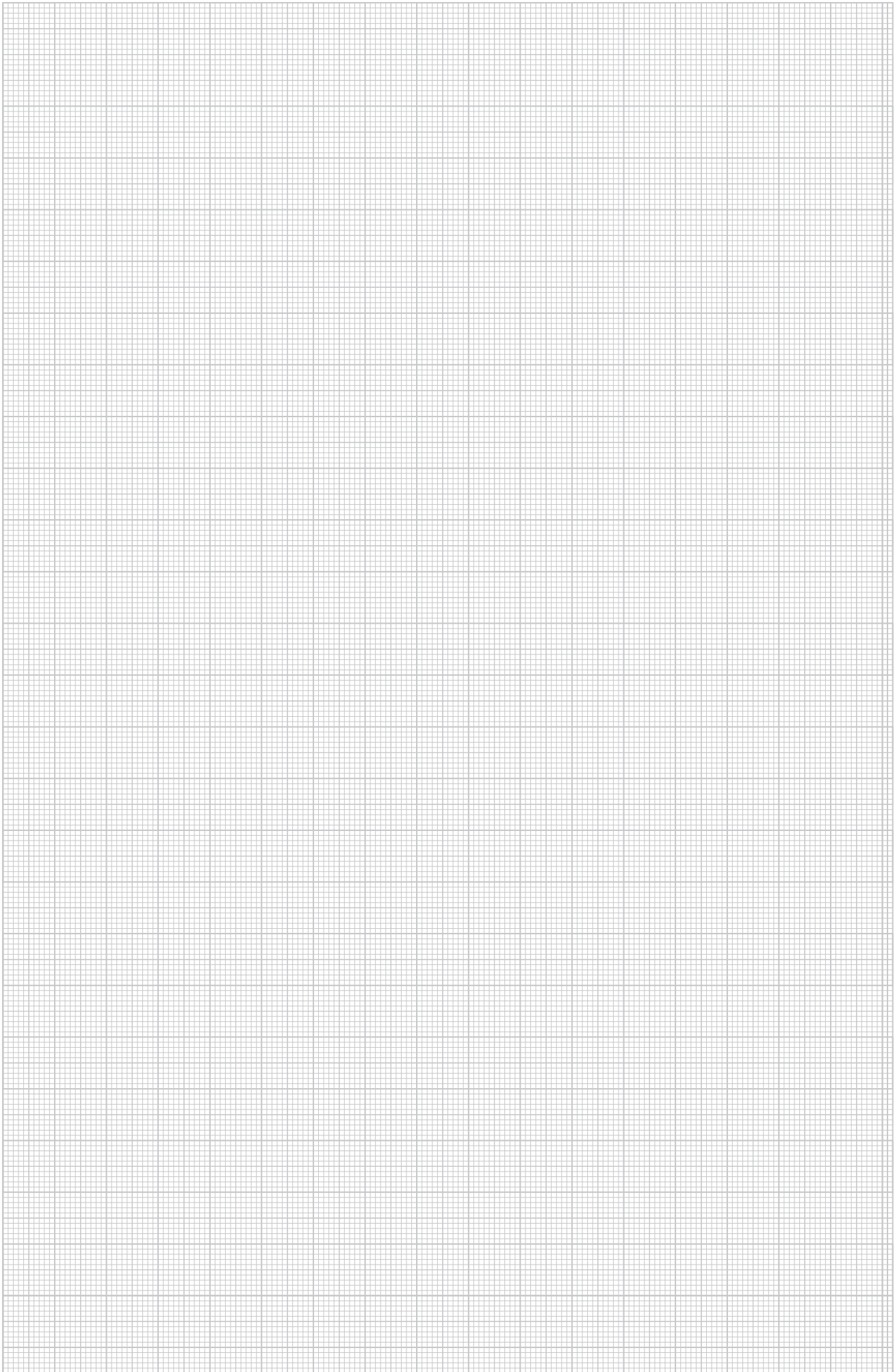
Connection module Cat. 6A, unshielded, snap-in

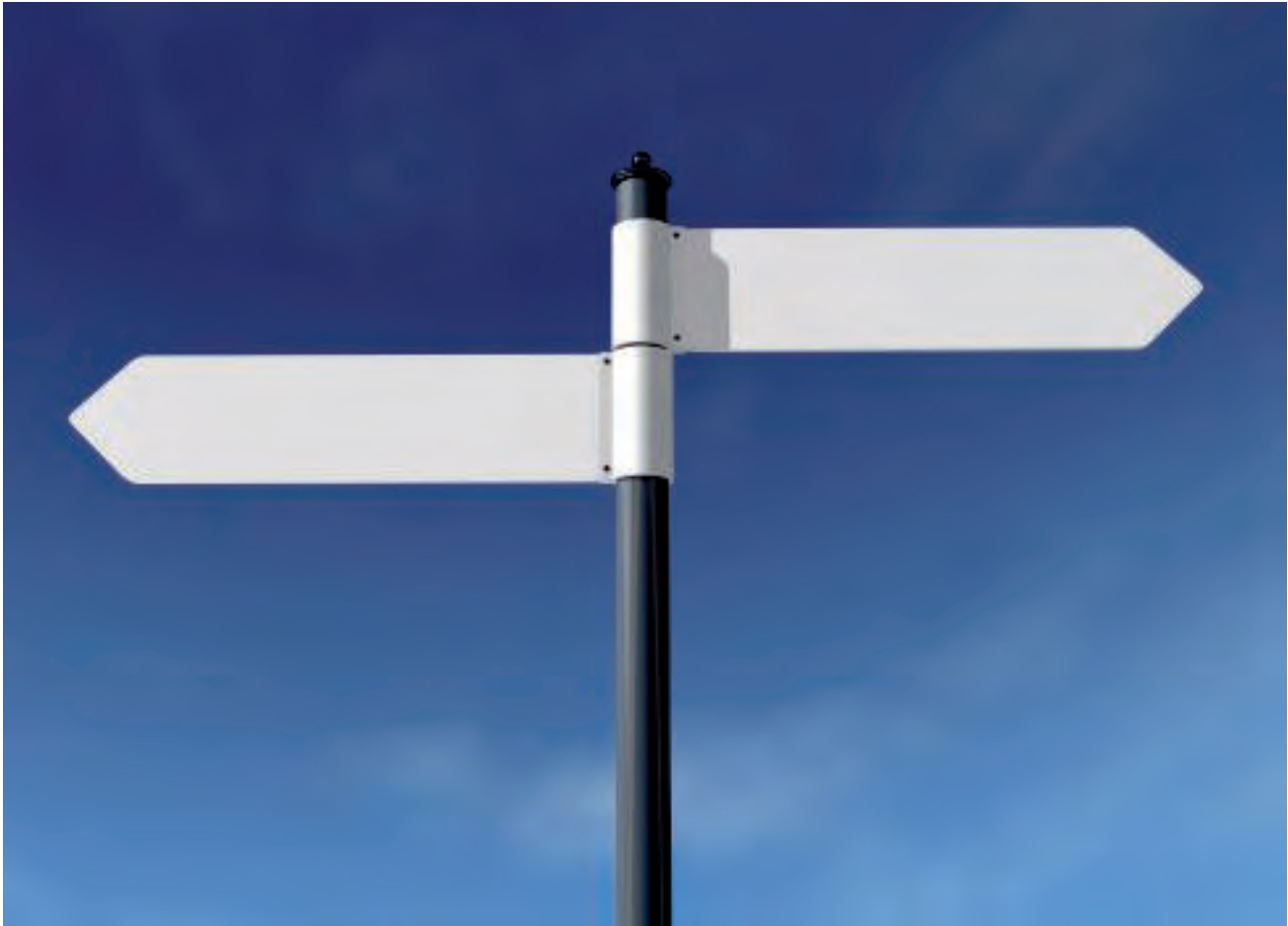


Type	Pack		Weight	Item no.
	Piece	kg/100 pc.		
ASM-C6A	1	1.050		6117348

Connection module Cat. 6A (ISO) unshielded, with an RJ45 slot. Including a dust cover, a cable tie, a Keystone fastening frame and mounting instructions. Suitable for installation in the data technology supports of type DTG-2C and DTS-2C, support plate of type MTM 2C and MTM 3C, mounting plate of type MPR2 2C, mounting supports of type MTGE2 2C, MTGE2 15 2C and MTGE2 F 2C.







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5431404	7400509	226	6460557	7405085	254	5108801	7406554	274	5867647	7409024	279	5870111	7409542	293
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5431442	7400517	226	6459643	7405088	329	5651116	7406603	297	5867722	7409030	302	5870166	7409546	293
5431503	7400533	227	6490608	7405097	262	5870265	7406672	244	5867777	7409044	279	5870180	7409550	293
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5431589	7400577	226	5102232	7405120	259	5903277	7406701	260	5868149	7409074	298	6539086	7409682	297
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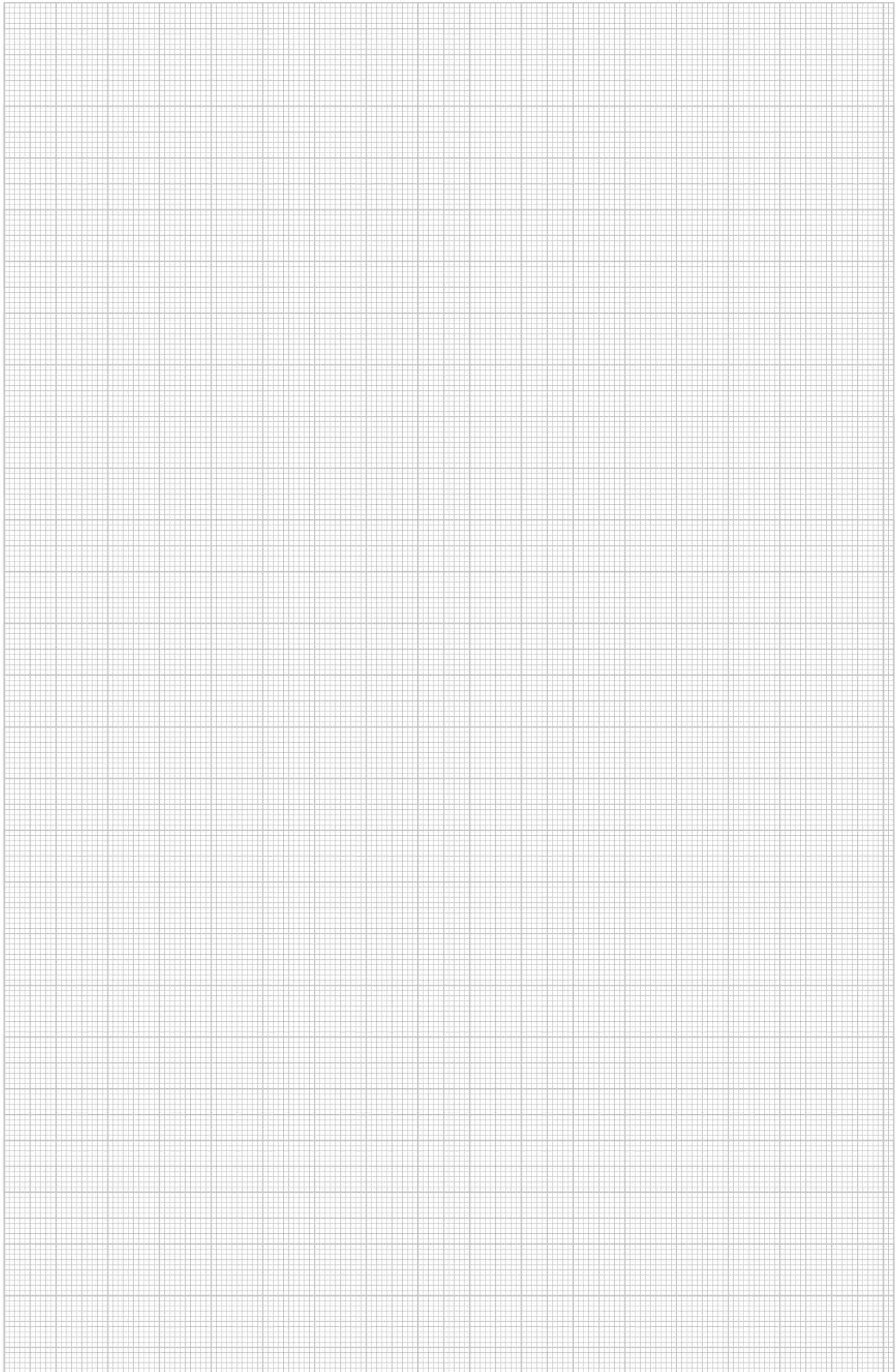
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Terms and conditions of sale and delivery of the companies OBO Bettermann Vertrieb Deutschland GmbH & Co. KG, OBO Bettermann Export GmbH & Co. KG, OBO Bettermann Projekt und Systemtechnik GmbH and OBO Befestigungselemente GmbH

1. All our supplies and services shall be governed exclusively by the following terms and conditions, including our additional terms and conditions for cable tray business transactions. Any terms and conditions of business and purchasing of the customer shall be valid only if we have acknowledged them in writing. Our quotations are without engagement; they are mere invitations to submit contract offers. Any and all transactions and agreements, including those entered into by our employees and agents shall only be binding upon our written confirmation or invoicing. The foregoing provision shall also apply to any modifications of the agreed formal requirements.

2. The documents and data pertaining to the quotation, such as illustrations, brochures, drawings, dimensions, loading capacity values and weight details are approximate only, unless they are expressly stipulated to be binding.

Samples are non-binding samples for inspection. Any purchase according to sample will be subject to customary deviations and deviations resulting from normal production processes. The properties of the sample shall be no guaranteed quality of the purchase object unless expressly stated otherwise in the confirmation of order. Samples must be returned to us at the latest within four weeks in perfect condition. If they are not returned within this period in proper condition, we shall be entitled to charge the purchase price for the sample in accordance with our current price list. All information on our products, in particular the illustrations, drawings, weight, dimension and performance data included in our quotations and printed matter shall be regarded as approximate average values and shall not represent any quality guarantee.

With regard to products made according to customer drawings, samples and other instructions of the customer, we will not provide any warranty nor assume any liability for the due and proper functioning of the product or for any other defects if and to the extent they are based upon the customer's specifications. The customer shall indemnify us from any third party claims, including claims for product liability as may be asserted against us for damages resulting from the products unless we have caused such damages by intent or gross negligence. The customer shall warrant that the manufacture and supply of products made in accordance with his instructions will not infringe any proprietary rights of third parties. Should any proprietary rights be asserted against us, we shall be entitled, without any legal review of the third party claims, to withdraw from the contract after hearing the customer, unless the third party withdraws the claims asserted against us under its proprietary rights within eight days by written declaration. The customer shall compensate us for any damage sustained as a result of the assertion of proprietary rights. In case of withdrawal, the work we have carried out so far shall be remunerated. Further rights under the statutory provisions shall not be affected thereby.

Any moulds, tools and design data produced by us for the execution of the order shall be our exclusive property. Unless expressly agreed otherwise, the customer shall not have any claims thereto, even if he has contributed to the costs of producing any such moulds, tools and design data.

3. The packing, shipping route and means of transportation shall be left to our discretion in the absence of any other agreements. They shall be charged at their cost price. We will take back undamaged cases, when being returned carriage paid, at 2/3 of the amount invoiced. The one-way or pool pallets used for transport shall be either exchanged upon taking delivery or returned. The smallest packing units stocked and listed may not be broken up for rationalisation reasons. In case of orders for different quantities, the nearest packing unit will be supplied.

We reserve the right to deviate from the agreed delivery quantity, in particular in the case of custom-made products, to a customary extent or in conformity with national or international standards. In case of a demand for adhering to a precise quantity, an express reference is necessary and subject to confirmation.

Master and call orders shall oblige the customer to accept the total quantity on which the master/call order is based. Where no particular call orders are specified in the contract, the total quantity of the master call order must be called within twelve months. If the customer fails to adhere to call deadlines, we shall be entitled to deliver and charge the total quantity in full after four weeks from written notice with reference to the consequences of any failure to call. Our rights arising from any default of the customer shall not be affected thereby.

4. Unless otherwise agreed, our prices are quoted ex works and do not include packing and insurance. The value added tax at the rate applicable on the date of dispatch will be added to our prices. The purchaser shall ensure the correctness of his VAT identification number, which he must notify to us immediately without being asked. He shall undertake to inform both us and the competent domestic tax authority without delay of any change in his name, address and VAT identification number.

Delivery shall be franco domicile within Germany, i.e. carriage and packing prepaid, if the net order value is in excess of € 1,200. For small orders below € 100 (net excluding value added tax), we shall invoice a lower quantity surcharge of € 10 (net) per order. Upon transfer of our supplies and services to a carrier or forwarding agent, at the latest upon their leaving our warehouse or supply plant, the risk shall pass to the recipient, even in case of deliveries free place of destination.

5. Delivery periods and delivery deadlines shall be approximate only unless we have expressly stated in writing that they are binding. Delivery periods shall commence upon receipt of our confirmation of order, but not before clarification of all execution details, ex place of delivery. The customer shall only be entitled to withdraw from the contract after having granted a reasonable extension of time. We reserve the right to make partial deliveries. Claims for damages and reimbursement of expenses - for any reason whatsoever - shall be subject to the provisions set out in article 10.

In the event of any circumstances that are beyond our control within the scope of normal operating risks and obstruct or make impracticable any delivery, we shall be entitled to suspend delivery by the duration of such obstruction plus a reasonable start-up period or to withdraw from the contract for the part not yet fulfilled. The purchaser can demand a statement from us as to whether we wish to deliver within a reasonable period or withdraw. If we fail to make such a statement, the purchaser may withdraw. Our notice to the purchaser shall be deemed to be sufficient evidence that we have been prevented from delivering.

Delivery time is extended in case of such events as labour disputes, strikes and lockouts, orders from the authorities, difficulties with the procurement of materials, spoiled work or post-processing, shutdowns and staff shortage as well as shortage of means of transport, and general occurrence of unforeseen events beyond our scope of influence, by the length of duration of these events.

6. Payments shall be made upon receipt of invoice less a 3% cash discount for payment within 10 days or net after 30 days from date of invoice. Erection work and all paid labour work must be paid within 10 days without deduction of any cash discount. In case of non-cash payments, the date of the credit note will be deemed to be the date of receipt of payment. Payments received shall always be credited first against costs, then against interest and then against the earliest liability. Cheques and bills of exchange shall only be accepted as means of payment.

Any payment by bill of exchange shall be subject to a prior separate and written agreement, whereby all bill costs shall be borne by the customer and no discount can be granted. The customer shall have no right to refuse performance and no right of retention - for any legal reason whatsoever - unless we have acknowledged his claim beforehand in writing or his claim has the force of law.

The customer shall only be entitled to set off claims which have the force of law, are undisputed or acknowledged by us in writing.

7. We shall retain title to the goods supplied by us until all our claims arising from our business transactions with the customer have been satisfied - current account clause - and all bills of exchange or cheques submitted for payment by the customer have been honoured.

Any treatment or processing of goods subject to our retention of title (reserved goods) shall be carried out for us as the manufacturer in accordance with § 950 BGB (German Civil Code) without any obligation on our part. If our reserved goods are to be regarded as the main item or the main item is owned by the customer, full title to the new item shall pass to us when it is created. In other cases, we shall acquire a co-ownership interest in the new item in the proportion of the sales value of our reserved goods to the other goods used for the new item at the time of processing, intermingling, joining or mixing. The customer shall take custody of our ownership or co-ownership interest free of charge; it shall be treated as reserved goods.

Before transfer of title, our goods shall be neither pledged nor assigned as collateral without our prior consent. In addition, any third party rights or pledges shall be notified to us immediately and we shall be given all details and provided all documents necessary for intervention; otherwise the customer must bear our loss. In the latter case, our total claims against the customer shall also be immediately payable.

The customer shall be entitled to sell or to use our reserved goods in the ordinary course of business subject to the condition that the relevant claims are transferred in accordance with article 8 below. This right shall lapse upon the customer's failure to promptly meet his payment obligations towards us or in the event of any cheque or bill protests or his suspension of payments. In such cases, we shall be entitled to take back the goods provisionally at the customer's expense and to sell them at our duly exercised discretion after a corresponding reminder has been sent to the customer. We will then pass the due amount to the customer's credit.

8. If our goods are sold before payment of our claim, the customer shall be obliged to retain our title against his purchaser until the goods have been paid for in full by the purchaser. The claim arising against the purchaser from such resale as well as any other ancillary rights or security interests of the customer resulting from the sale and any claims for compensation in case of damage to or destruction of our reserved property, including the relevant insurance sum shall hereby be assigned to us. We hereby accept this assignment. Where our co-ownership interest is sold, the relevant claims shall be assigned in the amount corresponding to the value of our interest.

The customer shall, at our request, inform us of his purchasers, notify them of the assignment made and provide us with any and all documents required to assert our rights.

As long as the customer meets his contractual obligations without delay, he shall be authorised to collect the claims assigned. He shall keep the amounts collected on our behalf separately and remit them to us immediately.

As soon and as far as our claims become due. The authorisation shall lapse in case of any cheque or bill protest

of the customer or his definite suspension of payments. The customer shall bear the costs incurred for any action taken against third parties and shall advance them upon request.

If the security provided to us by the retention of title and the anticipatory assignment should exceed the claims to be secured by more than 20%, we shall, at the customer's request, release paid supplies of our choice. Upon payment of all our claims by the customer, assigned claims shall pass to the customer.

9. Any complaints for obvious defects regarding the quantity or quality of our supplies and services that are identifiable upon careful inspection shall without delay, but at the latest within the period of limitation of eight days from arrival of the goods at the address of the customer or the person appointed by him, be notified in writing to us, not to our representatives. Slight deviations in dimensions and designs within the scope of defined technical tolerances shall not give rise to any right of complaint. Any rejected goods may only be returned to us with our prior written authorisation.

In case of justified complaints within the prescribed period, we shall, at our option, take remedial action by way of subsequent performance, by rectifying the defect, supplying non-defective goods or providing a credit note for the lower value calculated.

We shall be entitled to refuse subsequent performance in accordance with the statutory provisions. If we refuse subsequent performance, if any subsequent performance remains unsuccessful or if the customer cannot be reasonably expected to accept any subsequent performance, the latter shall be entitled to withdraw from the contract in compliance with the provisions of the following sentences. The customer shall only be entitled to withdraw from the contract - where a withdrawal is not excluded by law - upon the unsuccessful expiry of a reasonable period for subsequent performance set by him, unless this period was not required under the statutory provisions (§§ 281 para. 2, 323 para. 2, 440, 441 para. 1 BGB (German Civil Code)).

In case of his withdrawal, the customer shall be liable for any deterioration, destruction or loss of use resulting from any negligence or intent on his part. Any claims for damages or reimbursement of expenses of the customer shall be subject to the provisions set out in article 10.

In the case of any fraudulent concealment of a defect or in the case of any provision of a quality guarantee for the goods sold at the time of the passing of risk within the meaning of § 444 BGB (German Civil Code) (seller's declaration that the object sold has a specific property at the time of the passing of risk and that the seller, regardless of any fault on his part, intends to be answerable for any and all consequences resulting from its absence), the customer's rights shall be exclusively governed by the statutory provisions.

We shall - in addition to the statutory grounds for refusal - also be entitled to refuse subsequent performance if and as long as the customer fails to send us, at our request, the rejected goods or a sample thereof; the customer shall have no right of withdrawal for any such refusal. We may further refuse any subsequent performance if the goods concerned have been altered or modified without our consent unless the customer can prove that the defect was not caused by such alteration or modification.

The limitation period for any claims arising from defects shall be one year; in the case of goods which have been used in accordance with their intended purpose for a building and have caused its defectiveness, the limitation period shall be two years. The provisions of §§ 478, 479 BGB (German Civil Code) on recourse in the chain of suppliers shall not be affected thereby.

10. In the case of a pre-contractual, contractual or non-contractual breach of duty, including unsatisfactory delivery, tortious conduct and producer's liability, we shall only be liable for compensatory damages and reimbursement of expenses - subject to further contractual or statutory liability requirements - in the case of intent, gross negligence or slightly negligent breach of a material contractual duty (contractual duty the infringement of which jeopardises the fulfilment of the object of the contract). However - except in the case of intent - our liability shall be limited to the typical contractual damage that was foreseeable at the time the contract was entered into. The purchaser shall not be permitted to make a claim for expenses incurred in vain.

Except for any breach of material duties, our liability for slight negligence shall be excluded, but in any case be limited to the amount of the purchase price.

Any claim asserted by the customer or a third party for payment of a contractual penalty shall be excluded.

With regard to damages caused by delay, we shall only be liable for slight negligence up to the amount of 5% of the purchase price agreed with us.

The exclusions and limitations of liability set forth above shall not apply in the event that a guarantee is given with respect to the quality of the object sold within the meaning of § 444 BGB (German Civil Code) if a defect is fraudulently concealed or in the event of injury to life, physical injury or injury to health, or strict liability under the German Product Liability Act.

Any and all claims for damages against us, for any legal reason whatsoever, shall become statute-barred at the latest after one year from delivery of the goods to the customer, in the case of tortious liability from the time of knowledge, or grossly negligent ignorance, of the circumstances giving rise to the claim and the person liable to pay damages. This provision shall not apply in the case of liability for intent and in the event that a guarantee is given for the quality of the object sold, in the case of fraudulent concealment of a defect or in the event of injury to life, physical injury or injury to health, or strict liability under the German Product Liability Act. Any shorter limitation periods shall take precedence.

11. We shall be entitled to process and store any customer data obtained with regard to or in connection with the business relationship in accordance with the German Federal Data Protection Act, irrespective of whether such data is provided by the purchaser himself or by any third parties.

12. Place of performance for delivery and payment is Menden/Sauerland. The court of competent jurisdiction for any and all disputes, including disputes with regard to bills of exchange and cheques, is the Local Court (Amtsgericht) of Menden or, at our option, the District Court (Landgericht) of Arnsberg, irrespective of the value of the object in dispute. We shall, however, also be entitled to take legal proceedings against the customer at the place of his registered office.

German law shall be exclusively applicable. The application of international purchase laws is hereby excluded. Should, for any reason whatsoever, individual provisions of our terms and conditions of sale and delivery be invalid, the validity and binding nature of the other provisions shall not be affected thereby. The customer agrees, that the invalid provision shall be replaced by a valid provision that comes as close as possible to the economic meaning of the invalid provision.

13. The prices of products made of brass and copper are subject to certain fluctuations that are based on the relevant DEL listings. The prices of our brass articles are based on a DEL listing of € 150 for Ms 58, those of our copper products on a DEL value for electrolyte copper of € 200.

In case of any increase or reduction in these prices by more than € 15, a five per cent surcharge or deduction shall be made for each 15 points. The calculation of any such surcharges or deductions shall be based on the DEL listing of the date of our receipt of the order.

Valid from November 2015

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Building Connections

