LFS

Planning aids and basic knowledge
Cable routing systems

Building Connections

OBO
BETTERMANN

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OBO LFS seminars: First-hand knowledge

With a comprehensive programme of training courses and seminars on the subject of cable routing systems, OBO is able to support its customers with specialist knowledge from a single source. Alongside the basic theoretical principles, the programme also deals with practical implementation in everyday applications. Special calculation and application examples round off the comprehensive programme of knowledge transfer.

Invitations to tender, product information and data sheets

We can make life easier for you, with our comprehensive selection of materials designed for practical applications, which provide you with effective support with the planning and calculation of a project. These include:
• Invitations to tender
• Product information
• Data sheets
• Data sheets

Invitations to tender for lightning protection/earthing at the highest level:

OBO manufacturers products to RAL GZ642-5 and is dedicated to compliance with the RAL directives. Lightning protection and earthing products can be used for invitations to tender according to RAL.

These documents are continually updated and can be downloaded for free at any time from the Internet download area at www.obo-bettermann.com.

Invitations to tender on the Internet at www.ausschreiben.de

More than 10,000 entries from the cable support systems, fire protection systems, connection and fastening systems, transient and lightning protection systems, cable routing systems, device systems and underfloor systems can be recalled for free. Regular updates and extensions mean that you always have a comprehensive overview of the OBO products. All the current file formats (PDF, DOC, GAEB, HTML, TEXT, XML, ÖNORM) are available. www.ausschreiben.de

Inclusion of the cable routing systems and metal service poles in the service measures

Specifications for protective measures

If there is a fault, touchable metallic parts must not carry voltage. For this reason it is necessary to carry out appropriate safety measures. These are specified in the currently valid standards. EN 50085-1 and EN 50085-2-1 apply to the set-up of the cable routing system, whilst the erection regulations DIN VDE 0100 Parts 410 and 540 apply to the installation (protection measure against dangerous shock currents).

Different installation types in the European standard

The European standard DIN EN 50085-1 takes different installation types into account, as they are used in different countries within the EU. While only equipotential bonding testing was previously required for installation trunking systems, now the listed component standards also require protective conductor functions. This is because, in some countries, it is possible to route insulated cable in trunking.

All metallic components must be included

DIN EN 50085-1 requires that all the metallic components can be included in the protective measures. The manufacturers must carry out the appropriate tests and document them. OBO installation trunking is also tested and certified by an external testing office – that of the VDE.

Testing the effectiveness by the installation engineer

The erection engineer (installation engineer) must test the effectiveness of the protection measure in accordance with DIN VDE 0100 Part 610 after completion. Ensure the tightening torque of the contact screws on the earthing terminals and the proper mounting of the couplings.

Continuous protection measures

If the trunking is interrupted at a wall penetration, then continuation of the protective measures is required, as, in this case, the trunking is a foreign, conductive part, which spreads through different areas of a building.

The connection between the covers and the device installation trunking is made using the self-contacting cover. This guarantees self-contacting and continuous protection of the trunking covers and of the device installation trunking. A continuous protection measure is made without additional wiring.

The connection between the bases is made via the joint connector. Joint connectors guarantee equipotential bonding between the bases. Important: Powder-coated metallic covers do not count as mixed construction and are thus not considered as insulating! They should thus be included in the protection measures. The sheet-steel partitions are self-contacting. The shielding measure reduces electro-smog and generally achieves improved EMC protection. Protective conductor connections should be created permanently. If there is a change to the system, e.g. for retro-installations, it is important to guarantee the maintenance of the protective functions.

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Who needs to observe which standards
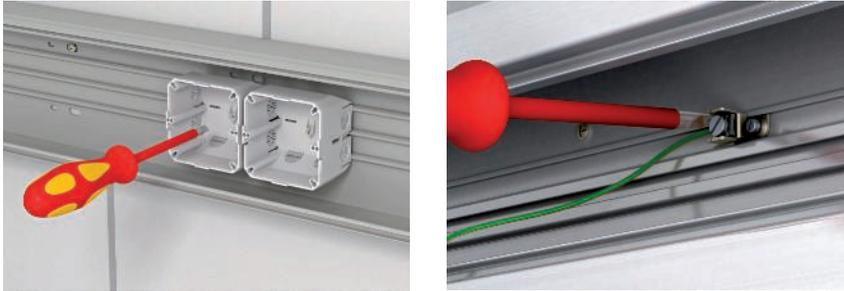
OBO as a manufacturer

Standard	Title	OBO system
DIN EN 50085-1 Device testing directive	Electrical installation trunking systems for electrical installations – Part 1: General requirements	All systems
DIN EN 50085-2-1	Special requirements for electrical installation trunking systems on walls or ceilings.	WDK, LKM, SKL, GEK-K, GEK-S, GEK-A
DIN EN 50085-2-2	Special requirements for electrical installation systems for underfloor, flushfloor or on-floor installation.	UFS
DIN EN 50085-2-3	Special requirements for wiring trunking systems for installation in switchgear cabinets.	VK
DIN EN 50085-2-4	Special requirements for freestanding installation units.	ISS

The installation engineer as systems engineer

Standard	Title	OBO system
VDE 0100 Part 410	Set-up of electrical systems with rated voltages of up to 1,000 V. Protection against electric shock.	All systems
VDE 0100 Part 520	Set-up of electrical systems with rated voltages of up to 1,000 V. Cables.	All systems
VDE 0100 Part 540	Set-up of electrical systems with rated voltages of up to 1,000 V. Equipotential bonding.	All systems
VDE 0100 Part 610	Set-up of electrical systems with rated voltages of up to 1,000 V. First testing of electrical systems before handover to the operator.	All systems
VDE 0298	Set-up of electrical systems with rated voltages of up to 1,000 V. Insulated cables in heavy current systems.	All systems
DIN EN 50310	Application of equipotential bonding and earthing in buildings with information technology equipment.	All systems

How can I work out the cable volume?
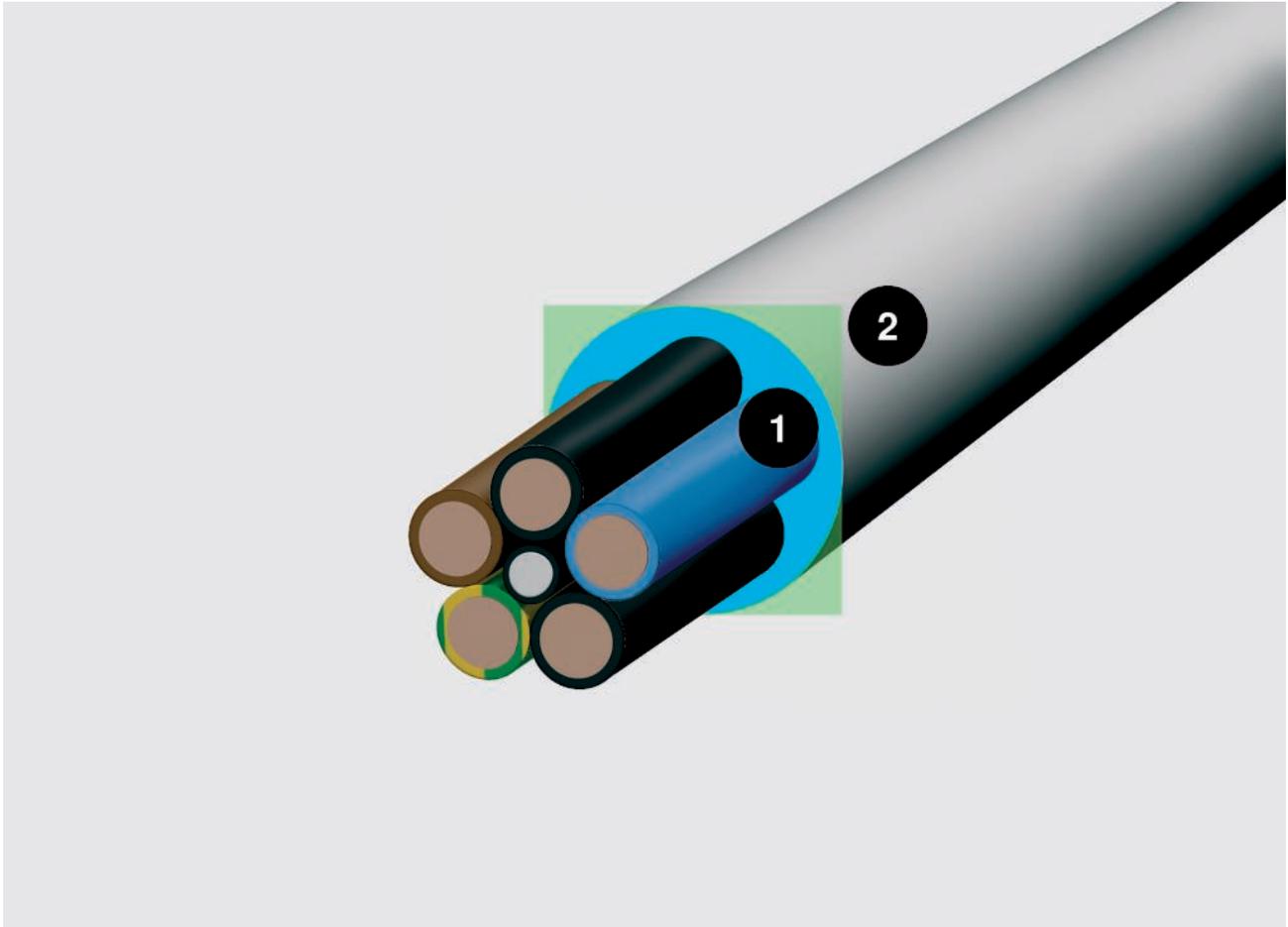
Cable diameter and space required; 1 = diameter in mm, 2 = space required in cm²

An important criterion for the selection of the right trunking size of the underfloor system is the cable volume. As the cables are never packed tightly together or are absolutely parallel, it is not enough to base the volume calculation solely on the cable diameter. A realistic calculation is provided by the formula $(2r)^2$. To simplify your work, we have listed the diameters and space requirements of the most important cable types on this double page. Important: the values are average values, which may vary between manufacturers. Please refer to the manufacturer's specifications for the exact values.

The right choice
The table on the next pages will help you to select the correct trunking size. Besides the usable cross-section of the appropriate trunking, please observe the current DIN/VDE standards for the fill factor and the approved cable heating.

Calculation with the formula $(2r)^2$
The diameter says little about the actual space required by a cable. Calculate: $(2r)^2$. This value reflects the realistic space requirements, including the compartments.

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Cable volume
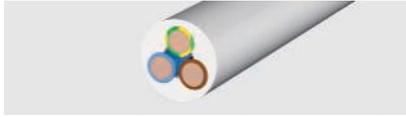
Insulated power cables

Type	Diameter mm	Usable cross-section cm²
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
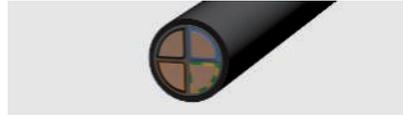
Insulated power cables

Type	Diameter mm	Usable cross-section cm²
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 cm²
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 cm²
SAT/BK cable	6.8	0.48

IT cables type Cat...

Type	Diameter mm	Usable cross-section cm²
Cat. 5	8	0.64
Cat. 6	8	0.64

Processing materials with the correct tool

Different materials must be processed differently. Chop saws have proved to be very useful when laying device installation trunking. This allows exact cutting. Trunking made of PVC and PC/ABS:
- Hand saw, fine-tooth (iron saw)
- Piercing saw with iron or plastic saw blade with fine teeth
- Circular saw with plastic saw blade, 350 mm diameter, 80–108 teeth/inch and 2,800 rpm

Sheet steel and aluminium trunking:
- Ribbon saw with saw ribbon for hard metals
- Circular saw with saw blade for hard metals, 350 mm diameter, 80–108 teeth/inch and 2,800 rpm
- Angle grinder with metal separating disc

Thermal expansion coefficient:
- Steel: 14×10^{-6} 1/K
- Aluminium: 23.1×10^{-6} 1/K
- Hard PVC: 71×10^{-6} 1/K

Take the length expansion of the materials into account
Different materials expand differently and this must be taken into account. The expansion of the materials PVC, steel and aluminium can be calculated using the formula below.

$\Delta L = L \cdot \alpha \cdot \Delta T$
L = Length m
α = Thermal expansion co-efficient
ΔT = Temperature change

Examples
At a temperature difference ΔT of 20 °C, the 2,000 mm standard length changes as follows:
- For hard PVC, 2.84 mm
- For steel, 0.56 mm
- For aluminium, 0.924 mm

Perfect interplay for more efficient working
Faster and better installation sequences – this is the aim of both ourselves and the manufacturers of electrical devices. Previously used bolt-firing devices have thus become modern nail guns. With its Pulsa 700E, Spit can offer devices of the highest quality for this area of the electrical industry. Many OBO products can be processed particularly efficiently using the devices. This is proved by tests for mounting cable and device installation trunking, carried out with Spit devices.

Properties of the hard PVC used

Property	Value	DIN
Material designation	PVC-U-E-D-08-04-28	to DIN 7748
Tensile strength	min. 40 N/mm²	to DIN 53 455
Crack expansion	min. 85%	to DIN 53 455
Breakdown voltage	min. 20 KV/mm	to DIN 53 481
Surface resistance	min. 1010 Ohm	to DIN 53 455
Shape heat resistance	min. 75 °C	to DIN 53 400/B
Temperature resistance in the application	max. 65 °C	
Flammability	Level V0	to UL 94

You can find more details in the chapter "Chemical resistance of hard PVC" in the "Additional information" part.

Halogen-free cable routing systems

Low smoke gas production, low corrosion, safe. Halogen-free installation materials belong in any fire protection plan.

This is what it's all about:
- If there is a fire, halogen-free materials reduce the amount of toxic smoke gases.
  They do not create any corrosive substances.
- In many public buildings, insurance companies require halogen-free materials to protect people and property.
- Particularly in public areas, halogen-free OBO cable routing systems are a
  safe choice.

Dangerous smoke gases from plastics

Plastics have good insulating properties and can be processed easily. However, during a fire, they can create aggressive gases. A danger to people and property.

Heavy smoke creation

Flame-protection agents, based on halogen compounds such as fluorine, iodine, chlorine and bromine, are used to keep the flammability of PVC low. If there is a fire, this safety aspect becomes a dangerous disadvantage: Toxic smoke gases, such as carbon dioxide and carbon monoxide, are created. These usually endanger people far faster than flames and heat. For example, in the fire catastrophe at Düsseldorf Airport in 1996 or in the Tauern Tunnel in 1999, considerable quantities of burned plastics contributed to the formation of smoke and hazardous substances. A highly toxic mixture, which can be lethal after just a few breaths.

Corrosive fire gases

PVC releases corrosive hydrogen chloride gas, which, in conjunction with water, forms hydrochloric acid. Hydrochloric acid has a highly caustic effect on the respiratory channels. As an electrically conductive substance, it can cause short circuits and destroy devices. Additional corrosive combustion gas products are cyanide and ammonia. In addition, extremely toxic dioxins can damage the building to such an extent that the reconstruction of parts of the building is very expensive or even impossible.

Therefore, from a fire protection perspective, halogen-free installation materials are a safe alternative. The Association of Property Insurers also prescribes halogen-free materials for building areas in which many people meet. The term "halogen-free" excludes any organic chlorine or bromine compounds.

The new standard for cable routing with plastic trunking

OBO halogen-free cable routing systems protect people, the environment and property. All the products are made from high-quality PC/ABS (polycarbonate/acrylonitrile butadiene styrene). This material is one of the self-extinguishing plastics.

For safe cable routing, OBO can offer halogen-free WDKH wall and ceiling trunking, as well as halogen-free VKH wiring trunking for switching cabinet construction. A new feature of the product range is the Rapid 80 device installation trunking system GKH, which is completely halogen-free, along with all of its fittings. OBO makes the three cable routing systems available in all the standard dimensions. They are easy to mount and are stable, are produced to a high level of quality and are dimensionally stable.

Rapid 80 GKH halogen-free
Rapid 80 device installation trunking allows flexible and quick access to energy and data on the wall. It is primarily used in public facilities and offices.

WDKH halogen-free
OBO wall and ceiling trunking ensures safe cable routing. It can be used as wall or ceiling trunking.

VKH halogen-free
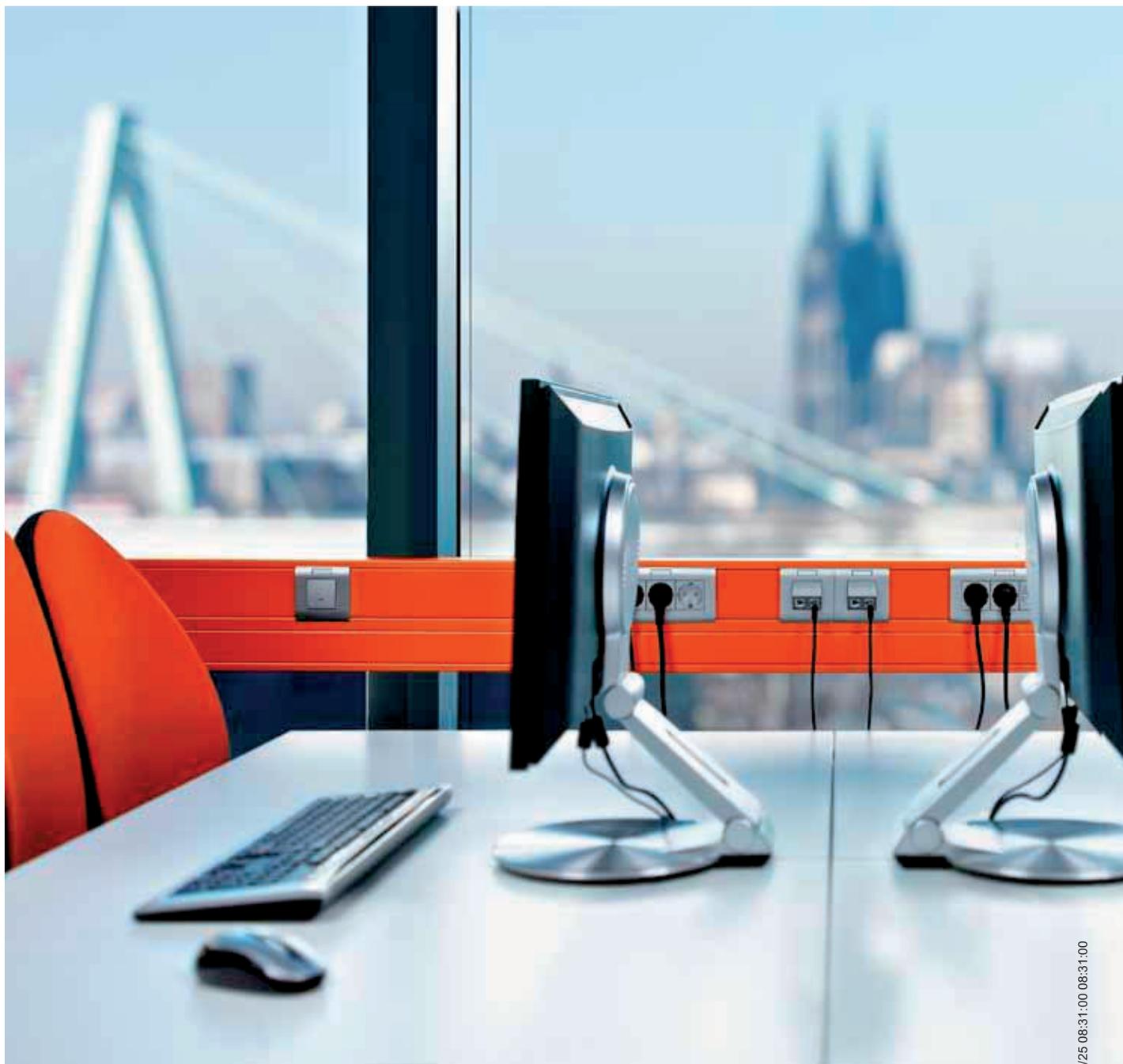OBO wiring trunking from our Dahl system ensures tidy, clear wiring in a switching cabinet.

The safety aspects

- Low smoke creation
- Low toxicity of the smoke gases
- Scarcely any release of corrosive gases
- Perfectly suited for public areas

HALOGEN FREE

OBO

Individual special colours

Plastic trunking

The wide range of standard colours and the many possible special colours mean that it is possible to integrate the colour of the cable routing systems into any office landscape. The plastic cable routing trunking and device installation trunking systems are available in the RAL colours pure white (RAL 9010), light grey (RAL 7035), grey (RAL 7030) and cream (RAL 9001) as standard.

Sheet steel and aluminium trunking

The device installation trunking systems and service poles are made of sheet steel or aluminium and are available in the standard colours pure white, light grey and cream. Powder coating means that all the other RAL colours are possible on sheet steel and aluminium trunking. Alternatively to the RAL standard, both NCS and DB colours can be applied on request.

Colour deviations

Material-dependent colour deviations may occur on PVC trunking and fittings. Causes for this are the different degrees in gloss of the different surfaces. They only absorb part of the light. "Silky matt" painted surfaces and "matted" surfaces on moulded parts have different structures and thus different levels of gloss. Absolute evenness is impossible. With a shiny surface, a colour appears lighter (greater reflection) and, with a matt surface, darker (greater absorption). Measurement of the differences is therefore extremely difficult.

Powder coatings for indoor use
Three materials. One system.

Versatile. Attractive. Robust.

Powdered surface coatings offer a wide range of options. They turn a standard product into an individual solution, whose colour and function are matched exactly to your requirements. The colour and structure ensure a decorative exterior, whilst the coating properties offer high resistance to chemicals, very good corrosion protection and the best possible insulation properties.

|	
Basic	Sheet steel or aluminium
Coating	Epoxy powder coating
Standard colours	RAL 9010, pure white RAL 9001, cream RAL 7035, light grey
Special colours	RAL, NCS and DB colours Metallic colours
Surface structure	Standard structure: Smooth transitions Diverse variants from fine to coarse
Surface shine level	Standard shininess: Approx. 22% Diverse variants from matt to high-gloss
Variants	Anti-bacterial High resistance to abrasion

Plastic surfaces

OBO uses high-quality plastics with the best material properties. The PVC withstands high and low temperatures, as well as UV radiation, various chemicals and high mechanical loads. In addition, the halogen-free variants possess perfect fire protection properties, as they prevent corrosive smoke gases.

Plastic types	Polyvinylchloride (PVC)
	Polycarbonate/acrylonitrile butadiene styrene (PC/ABS)

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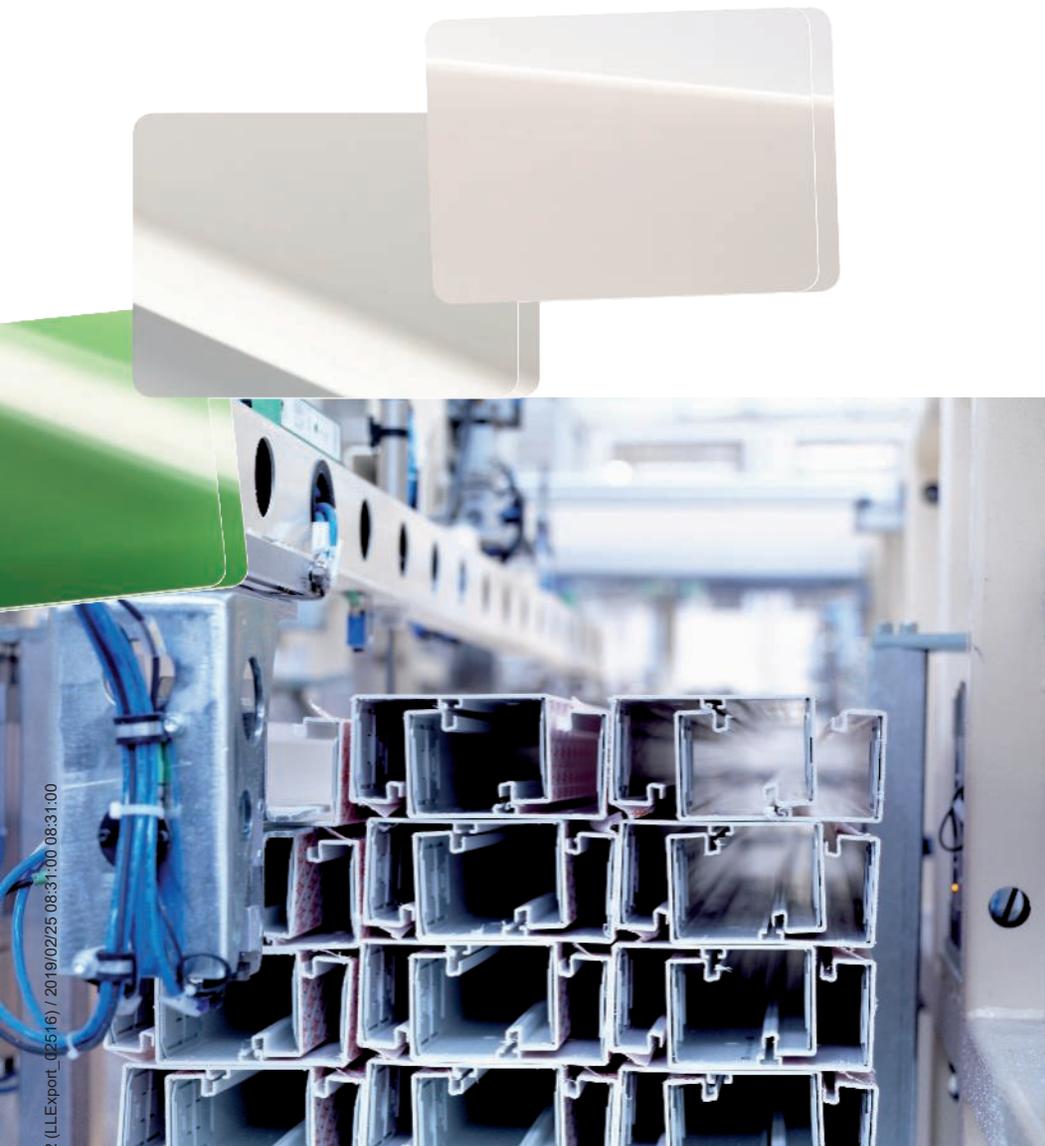
System components

1	Trunking
2	Joint cover
3	Internal corner cover
4	External corner cover
5	T and intersection cover
6	Flat angle cover
7	Endpiece
8	Partition wall
9	Accessory mounting box
10	Cover for single accessory mounting box

Mounting aid for WDK cable routing trunking systems

Mounting of mini trunking
Remove the protective film. Stick the trunking to a dust-free, adherent substrate.

Cut mini trunking
The OBO shears can be used to create an exact straight cut for the WDK trunking. The shears can be used for trunking sizes of up to 25 x 45 mm.

WDK for workshops
Together with accessory mounting boxes, WDK cable trunking of 60 mm trunking height can be used as device installation trunking.

WDK with nail strip
The nail strip means that WDK trunking can be mounted with steel nails. At the same time, it prevents nail damage to the cables. Of course, the nail strip can also be used as a separating retainer for routing different voltage levels.


Mounting of cover clip
The cover clip is locked into the cover contour. To insert the cables, move it forward through 30°. The clip stabilises the WDK trunking and keeps the cables in the trunking.

Mounting internal corner hood fitting
The hood fitting is placed over the mounted WDK trunking and locks into the cover contour.

Mounting of external corner hood fitting
The bases of the WDK trunking are mounted on the wall up to the corner.
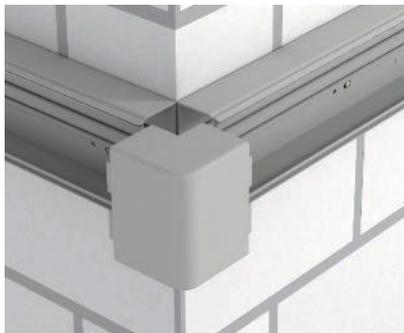
Mounting of external corner hood fitting
After the cables have been routed, the external cable hood fitting is placed on the bases.

Mounting of accessory mounting box
The accessory mounting box is locked onto the floor connectors.

Mounting of accessory mounting box
Then the accessory mounting box is fixed to the WDK trunking using the bolt located in the base.

Mounting with nail device
Mounting of the cable trunking is fast and efficient with a Spit nail device.

RK universal trunking
The universal trunking hides the cables inserted in distributors and counter cabinets.

RK clip mounting
The clips (OBO Quick Clip Pg16) are mounted using knock-in anchors on the left and right of the distributor cabinets. They are contained in the scope of delivery.
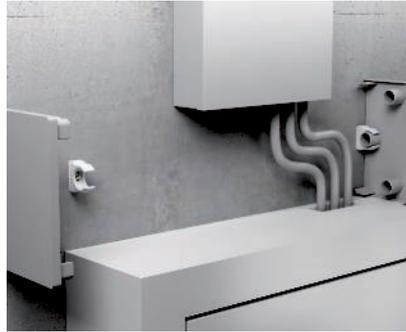
RK end piece mounting
The end pieces are fastened by locking them in the clips.

Cut RK cover
The covers are cut to the appropriate length using a standard coping saw.

RK cover mounting
Simply lock the cover in the end pieces.

RK front cover mounting
Attach the front cover to the cover clips.

RK complete mounting
The universal trunking allows tidy laying, even if a lot of cables need to be hidden.

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System components

1	Trunking
2	Trunking clamp for function maintenance
3	Joint connector
4	Internal corner
5	External corner
6	T-piece
7	Flat angle
8	Endpiece
9	Edge protection ring
10	partition wall
11	Conductor bracket
12	Trunking clamp
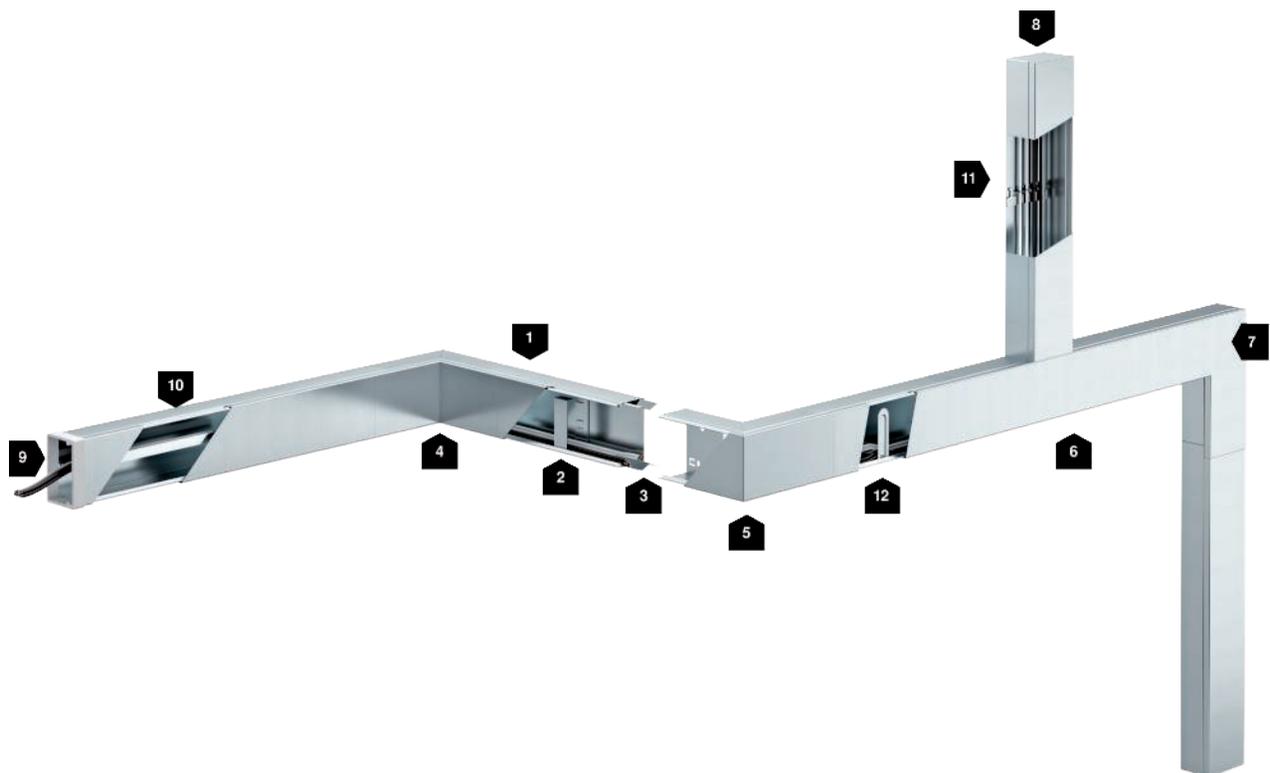
Mounting aid for LKM cable routing trunking system

Machines application area
In the area of machines, the LKM metal cable trunking is used to provide additional protection for the cables.

Corridor, stairwell application area
The stable LKM metal cable trunking can be used anywhere, in which cables require mechanical protection.

Machine trunking mounting
Screw the LKM metal cable trunking to the machine, for example, using cylinder head bolts of type 341.

Wall trunking mounting
Knock-in anchors of type 910/SD can be used to fasten the LKM trunking directly on the wall.

Installation of internal corner
As with the LKM trunking, the fittings are mounted at the appropriate points.

Installation of joint connectors
After installing the LKM trunking, lock the joint connector into the parts to be connected from inside. This guarantees the equipotential bonding between these two parts.

Installation of partition
Insert the partition into the straps located on the floor. This guarantees equipotential bonding without any additional aids.

Installation of cable fixing holder
The cable bracket is mounted using the trunking fastening screw. The cables can be held using cable ties, type 555.

Installation of duct clamp
The duct clamp is placed on the loop perforation in the base and then locked into the cover contour. It can be placed at an offset. A partition can be installed at a later time.

Equipotential bonding
Equipotential bonding is guaranteed between the cover and the base through the special cover contour. The LKM trunking is earthed using the connection strap located in the base.

Installation of edge protection ring
Place the edge protection ring on the open ends of the LKM trunking. It prevents damage to the cables within.

LKM. Reliable protection for cables.

LKM metal cable trunking has two areas of application. The stable system for the guidance and protection of cables is used in the field of machines and systems. The completed system allows simple installation at a later date, also with pre-terminated connectors, offering reliable protection against mechanical loads and soiling.

The LKM cable trunking of type LKM 20030FS and 60100FS has also been tested as a cable-specific routing type for function maintenance according to DIN 4102 Part 12.

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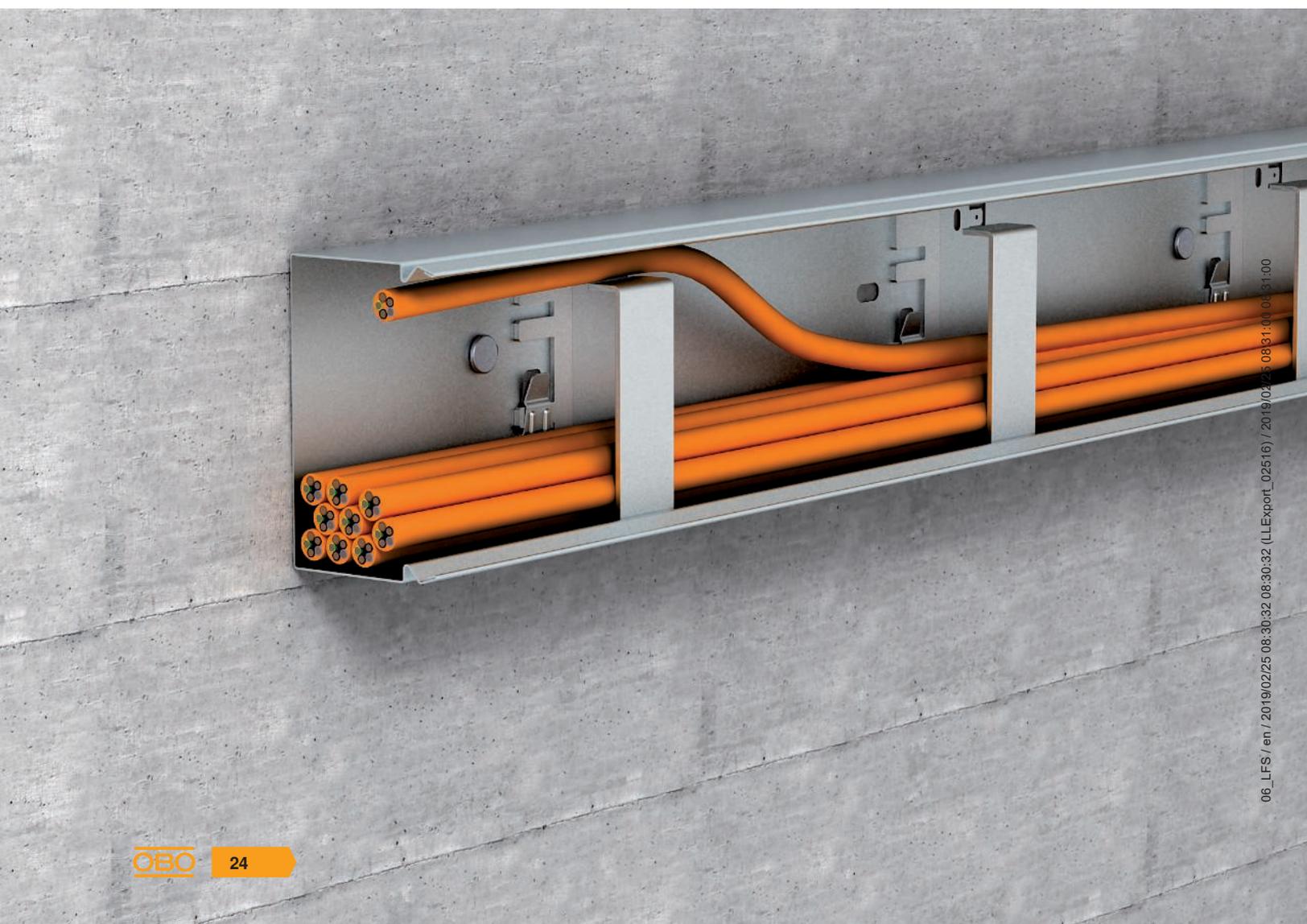
Thought out down to the last detail

A wide range of practical mounting details make the LKM cable trunking a reliable partner during cable routing.

Partition

Insert the partition into the straps located on the floor. This guarantees equipotential bonding without any additional aids.

Trunking clamp

The trunking clamp is placed on the loop perforation in the base and then locked into the lid contour. A partition can be installed at a later time.

Secure equipotential bonding

After installing the LKM trunking, lock the joint connector into the parts to be connected from inside. This guarantees the equipotential bonding between these two parts.

Equipotential bonding is guaranteed between the cover and the base through the special cover contour. The LKM trunking is earthed using the connection strap located in the base.

Cable brackets

The cable bracket is mounted using the trunking fastening screw. The cables can be held using cable ties, type 555.

Edge protection

Place the edge protection ring on the open ends of the LKM trunking. It prevents damage to the cables within.

Function maintenance with the LKM system

Cable routing with LKM metal cable trunking is approved as a cable-specific routing type for the function maintenance classes E30 to E90 according to DIN 4102 Part 12.

The trunking offers additional mechanical protection of the installed cables. This mounting variant permits sure fulfilment of existing requirements of specifications or of building use. This installation variant is also used if, for reasons of appearance, open routing of the cables with function maintenance is not wanted.

E30 **E90**

Wall and ceiling mounting ⊕

Horizontal wall and ceiling mounting is permitted.

Tested ⊕

The LKM20030 trunking has been tested for fire and telecommunications cables. The LKM60100 trunking has been tested for power cables and for fire and telecommunications cables.
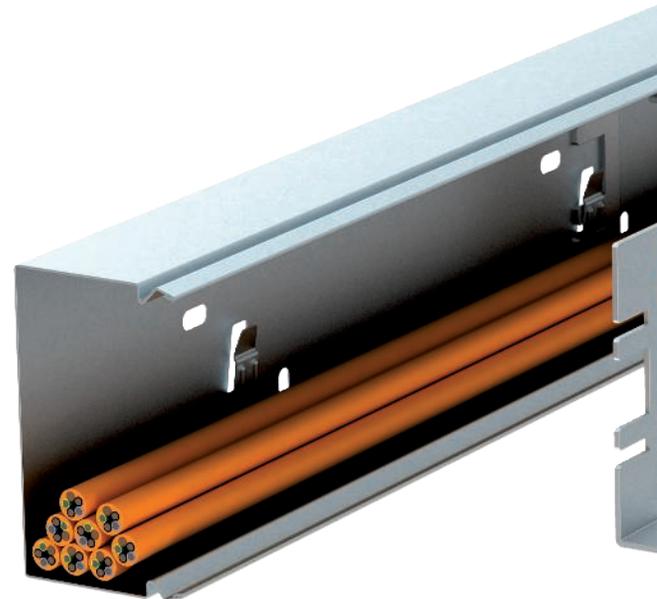
Trunking clamp

A retaining clamp is available as an installation aid for the trunking type LKM60100. This prevents cables from falling out in the case of wall and ceiling mounting.

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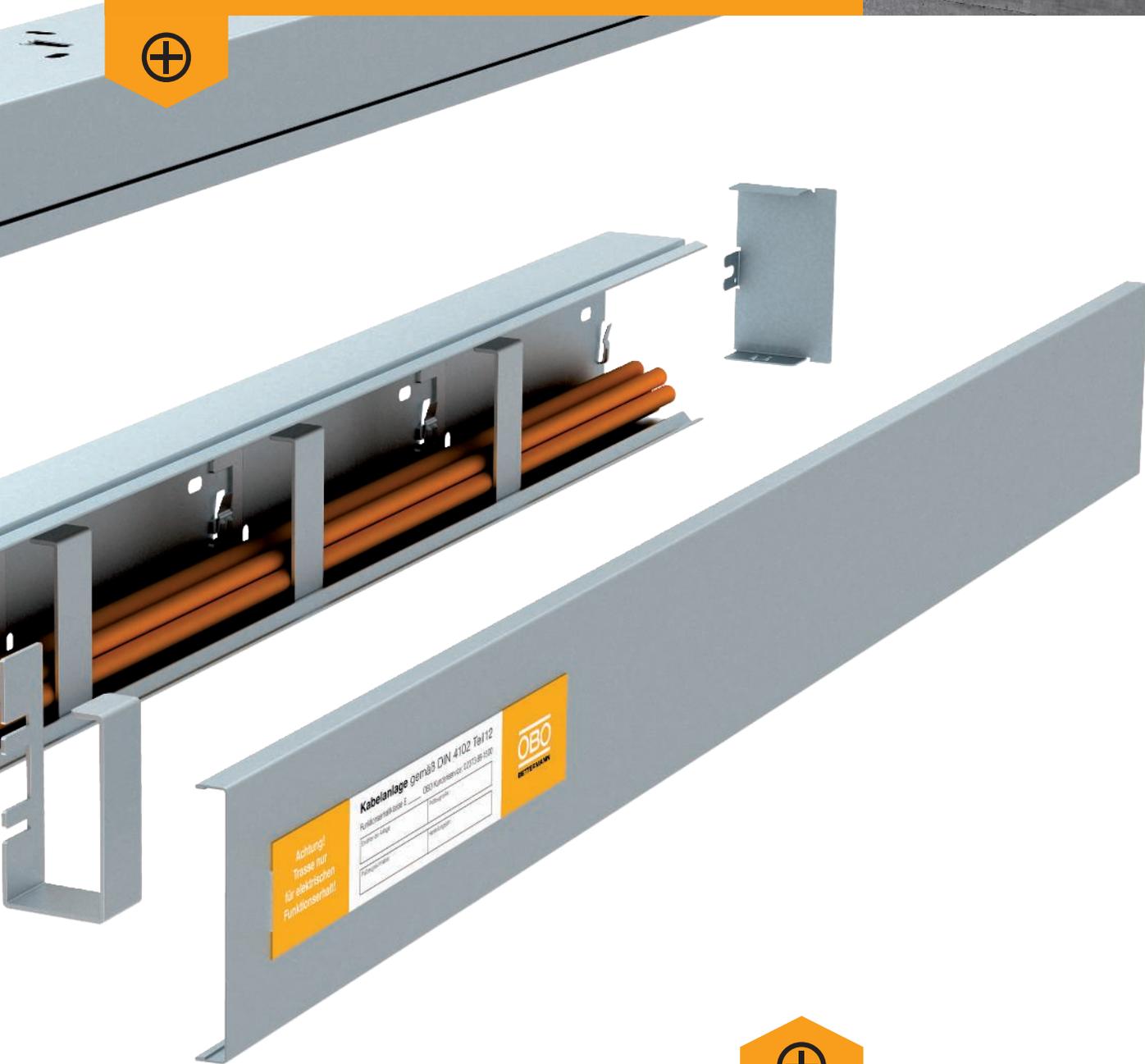
Cover mounting

When cable installation has been completed, the trunking cover is locked onto the trunking base.

⊕

Systematic protection

10 different trunking sizes are available in the LKM system. They are available with FS strip galvanised or FSK strip galvanised surfaces and with a pure white plastic coating. The system is supplemented by the appropriate fittings and system components, such as edge protection rings, end pieces, fittings, joint connectors and trunking clamps.

Accessories

Trunking

Fittings

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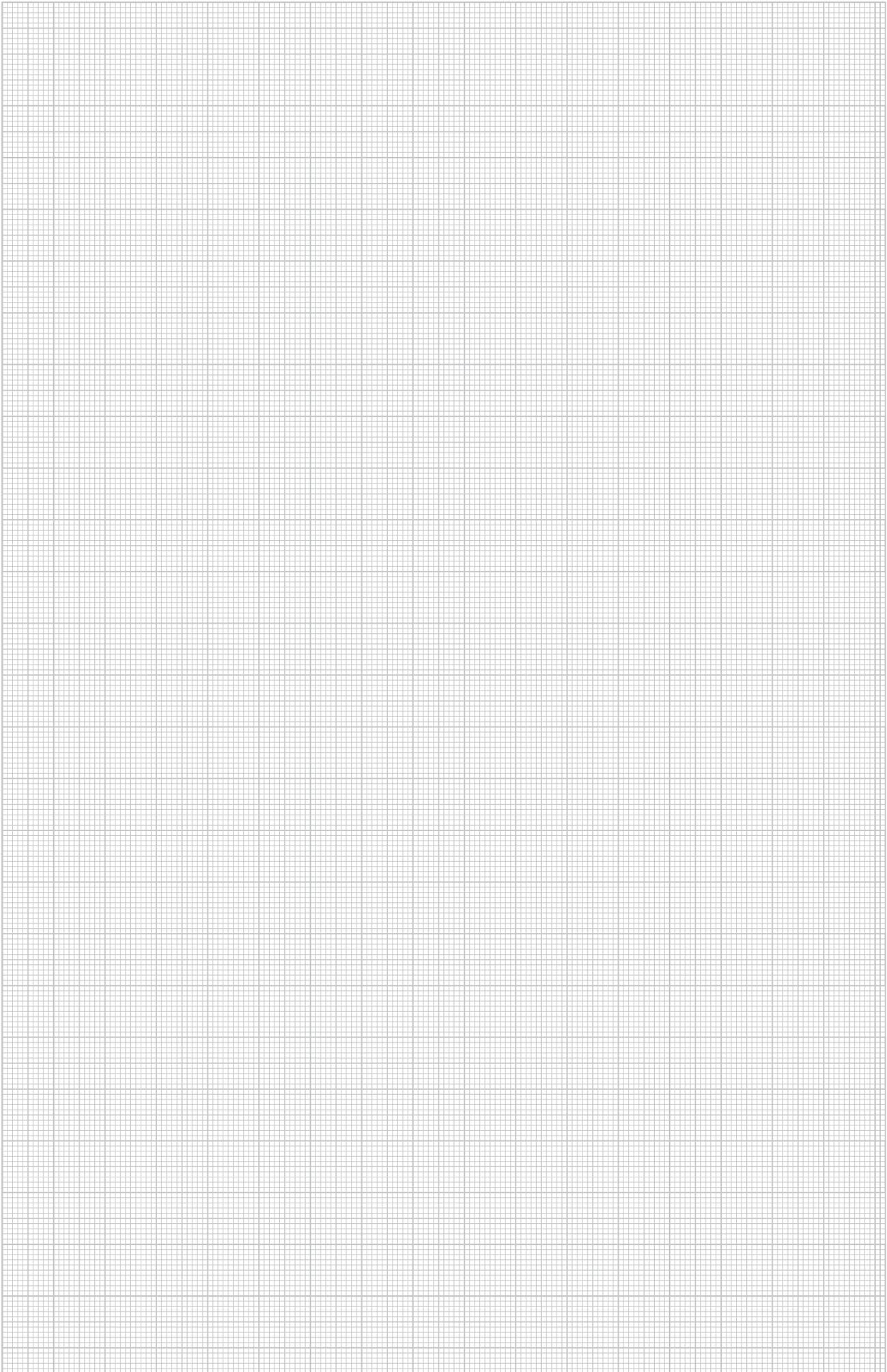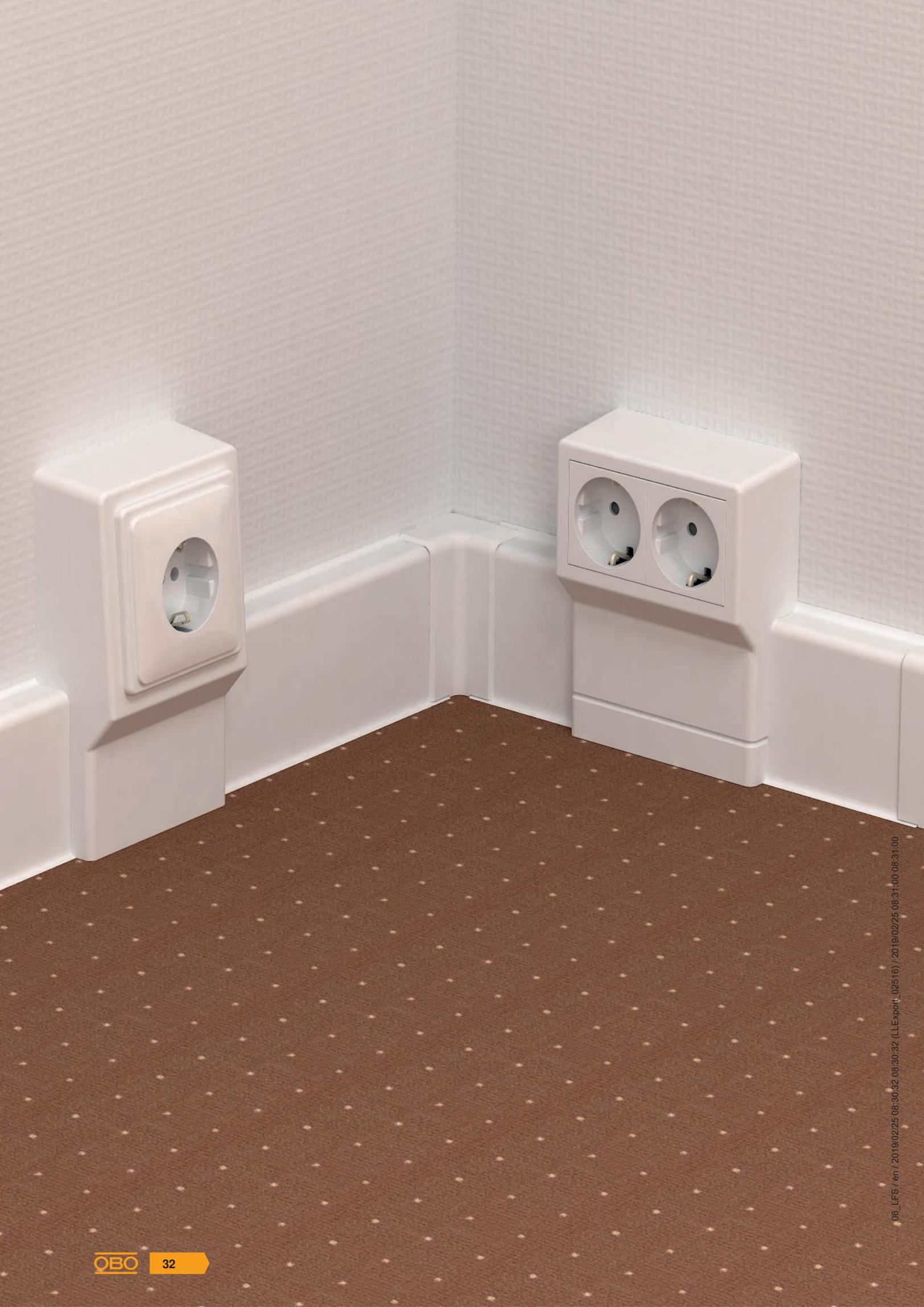
System components

1	Skirting trunking
2	Joint cover
3	Internal corner cover
4	External corner cover
5	Endpiece left
6	Endpieve right
7	Device support, single
8	Device support, double
9	Device support, double, Modul 45
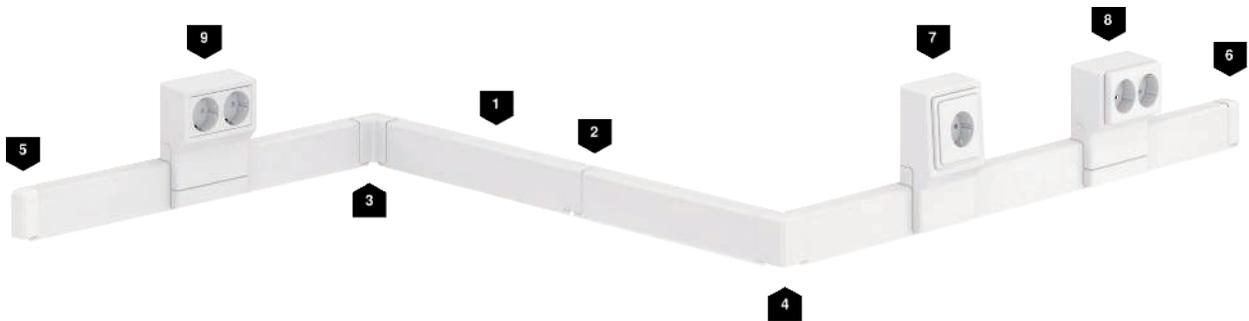
Mounting aid SKL Skirting trunking

Cable trunking application area
The SKL skirting trunking can be used as a skirting board in housing. This allows tidy retro-installation of cables.

Use of coloured variant
The beech design means that the SKL skirting trunking can also be used with wooden floors.

Trunking mounting
The base of the SKL skirting trunking is fastened using bolts and anchors or knock-in anchors.

Mounting of cover
The sealing lip ensures optimum wall and floor connections. The cover is simply pushed onto the base.

Mounting of fitting
The fitting is attached to the cover and thus fastened. This allows the implementation of a visually attractive installation.

Mounting of device support
The device support is placed on the trunking base and fastened to the wall with four bolts.

Mounting of Schuko socket
The Schuko socket is connected and mounted on the screwless terminals located in the base of the device support.

Mounting of Modul 45 devices
The Modul 45 sockets are connected to the cable and pushed into the mounting box until a click can be heard.

Mounting of cover
The cover is run up to the mounting box base and placed on the base.

Mounting of device support cover
The cover of the device support is simply locked onto the base. The reducing elements may need to be removed, depending on the trunking height.

Installation of mounting box cover
The cover of the device support is placed on the base and fastened using the socket cover.

Installation complete
Sockets can be mounted wherever they are required.

OBO

OBO wiring trunking

An exceptionally large range of products in the usual high quality: Wiring trunking ensures tidy wiring in a switchgear cabinet. All the trunking is made from lead-free material. And, for optimum safety, a selection of halogen-free trunking is available from our range.

For professional wiring installation, wiring trunking in dimensions between 15 x 15 mm and 100 x 100 mm is available. A soft, burr-free slot and rounded tabs make mounting easier and also prevent injuries. Upon request we can also offer special designs.

Precise measurements and tested quality

The LK4 and LK4/N as well as the LKV and LKV/N trunking systems have exactly predetermined points for easy breaking-out of the side retainers. All the types have, depending on their size, single or dual track perforation to their base. Tapering in the side slots of the LK4/N and LKV/N types prevents the cables from falling out.

LK4
Nominal dimensions are internal dimensions
LKV
Only external dimensions

Certified
The wiring trunking is VDE-tested and UL-listed (UL File E301798).

LK4 and LK4/N
OBO offers the LK4 wiring trunking in the measurements from 15 x 15 mm to 80 x 120 mm. Precise processing makes simple attaching and detaching of the cover possible but, at the same time, provides a firm fit.

LKV and LKV/N
The special cover contour also guarantees a perfect fit on the LKV wiring trunking. In the dimensions from 25 x 25 mm to 100 x 100 mm (DIN EN 50085- 2-3), it caters for any size requirement.

LKV/H
The LKV/H wiring trunking is halogen-free and available in eight different sizes from 50 x 37.5 mm to 75 x 125 mm.

HALOGEN FREE
• Low smoke creation
• Low toxicity of the smoke gases
• Scarcely any release of corrosive gases

Modular system
Wiring trunking

OBO wiring trunking stands out through a wide range of benefits which have long proven their worth in switchgear cabinet construction. Even in continuous operation, it guarantees secure connections and the reliable function of the electrical infrastructure.

1 Stable trunking with high-quality thicknesses

2 Exact predetermined breaking points in the strut and base area

3 Soft, burr-free slot, rounded tabs

4 Absolute dimensional accuracy of the side perforation and of the base perforation

5 Cut edges rounded and deburred in the closing area

6 Firm positioning of the covers through optimum closing contours

7 Wire retaining lug, allows wiring without wire retaining bracket and prevents routed wires from falling out

Special solutions

- Starting dimension of the base perforation can be adjusted variably
- Available without base perforation
- Special lengths
- Special colours

Release pliers

The side retainers can be removed down to the base of the trunking using the release pliers. When the side retainers have been broken out, there is no loss in volume in the transition area to the next trunking piece.

⊕

Mounting of the wiring trunking
The wiring trunking is fastened to the mounting plate of the switching cabinet using spreading rivets. The spreading rivets are installed using the plastic rivet tool.

Spacer mounting
Through the mounting on spacers, it is possible to install the wiring trunking at a distance to the mounting plate.

OBO

Wire retainer mounting
The wire retainer is inserted into the side slot of the wiring trunking. This simplifies cable installation and keeps the cables in place in the wiring trunking. It also guarantees easy attachment of the cover. If installations are required at a later date, then, when the cover is removed, the cables are held in the trunking and do not fall out.

Wire retainers
The wire retainers can be adjusted according to the trunking width. To do this, simply break off the wire retainer at the predetermined breaking points. This means that just one wire retainer is necessary for any trunking width.

Base perforation
Single and dual-track floor holes to DIN 43659 enable precise work.

Special solution
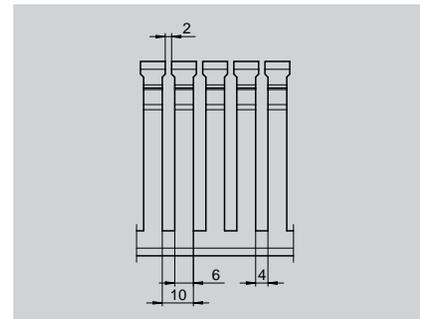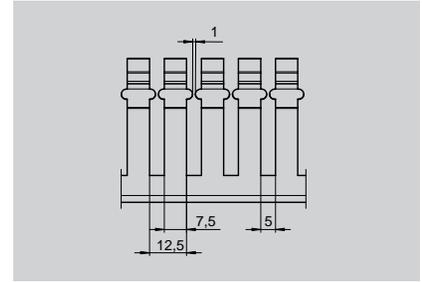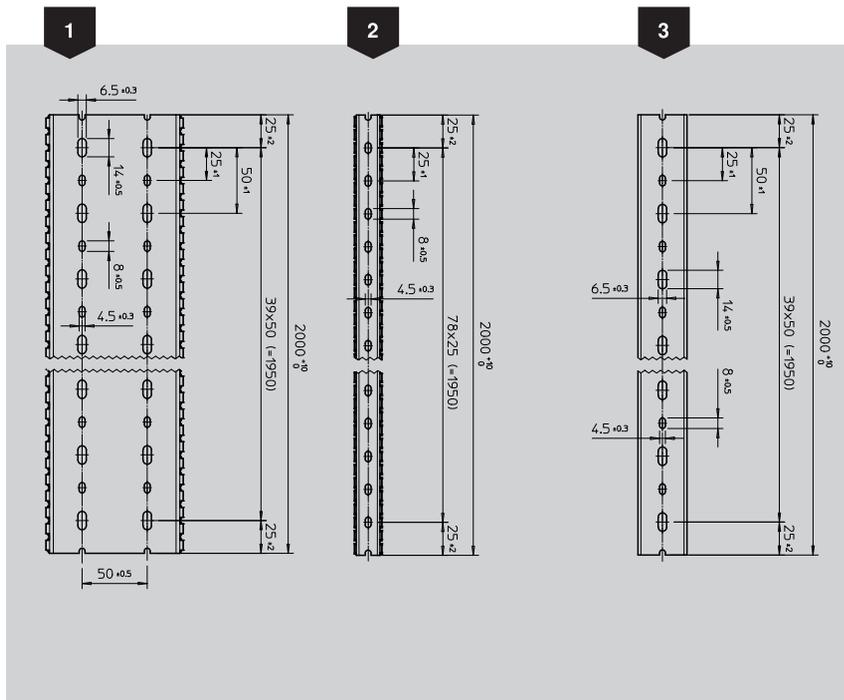Starting dimension of the base perforation can be adjusted variably, if requested by the customer.

Identification plate
Sticker as an identification plate to attach onto wiring trunking in switching cabinets with self-protected power circuits.

Hole patterns and dimensions

All the VK and VKH wiring trunking always start and finish - with regards to one delivery length (2,000 mm) - with half a small fastening hole (4.5 x 8 mm).

LK4/LK4/N	Item no.	Hole pattern
LK4 15015	6178001	2
LK4 30015	6178003	2
LK4 30025	6178005	3
LK4 40025	6178010	3
LK4 40040	6178012	3
LK4 40060	6178014	3
LK4 40080	6178016	1
LK4 40100	6178018	1
LK4 60015	6178026	2
LK4/N 60015	6178201	2
LK4 60025	6178028	3
LK4/N 60025	6178203	3
LK4 60040	6178031	3
LK4/N 60040	6178205	3
LK4 60060	6178033	3
LK4/N 60060	6178207	3
LK4 60080	6178035	1
LK4/N 60080	6178209	1
LK4 60100	6178037	1
LK4/N 60100	6178211	1
LK4 60120	6178039	1
LK4/N 60120	6178213	1

LK4/LK4/N	Item no.	Hole pattern
LK4 80025	6178050	3
LK4/N 80025	6178225	3
LK4 80040	6178052	3
LK4/N 80040	6178227	3
LK4 80060	6178054	3
LK4/N 80060	6178229	3
LK4 80080	6178056	1
LK4/N 80080	6178231	1
LK4 80100	6178059	1
LK4/N 80100	6178233	1
LK4/N 80120	6178236	1
LK4/N 80120	6178236	1
LK4/N 80120	6178236	1

LKV/H	Item no.	Hole pattern
LKV/H 50037	6178612	2
LKV/H 50050	6178614	2
LKV/H 50075	6178616	2
LKV/H 75037	6178622	2
LKV/H 75050	6178624	2
LKV/H 75075	6178626	1
LKV/H 75100	6178628	1
LKV/H 75125	6178630	1

LKV/LKV/N	Item no.	Hole pattern
LKV 25025	6178302	3
LKV 37025	6178305	3
LKV 37037	6178307	3
LKV 50025	6178310	3
LKV 50037	6178312	3
LKV 50050	6178314	3
LKV 50075	6178316	1

LKV/LKV/N	Item no.	Hole pattern
LKV 75025	6178320	3
LKV/N 75025	6178420	3
LKV 75037	6178322	3
LKV 75037	6178422	3
LKV 75050	6178324	3
LKV/N 75050	6178424	3
LKV 75075	6178326	1
LKV/N 75075	6178426	1
LKV 75100	6178328	1
LKV/N 75100	6178428	1
LKV 75125	6178330	1
LKV/N 75125	6178430	1
LKV 10037	6178334	3
LKV/N 10037	6178435	3
LKV 10050	6178336	3
LKV/N 10050	6178437	3
LKV 10075	6178338	1
LKV/N 10075	6178439	1
LKV 100100	6178341	1

Dimensions, LK4 wiring trunking
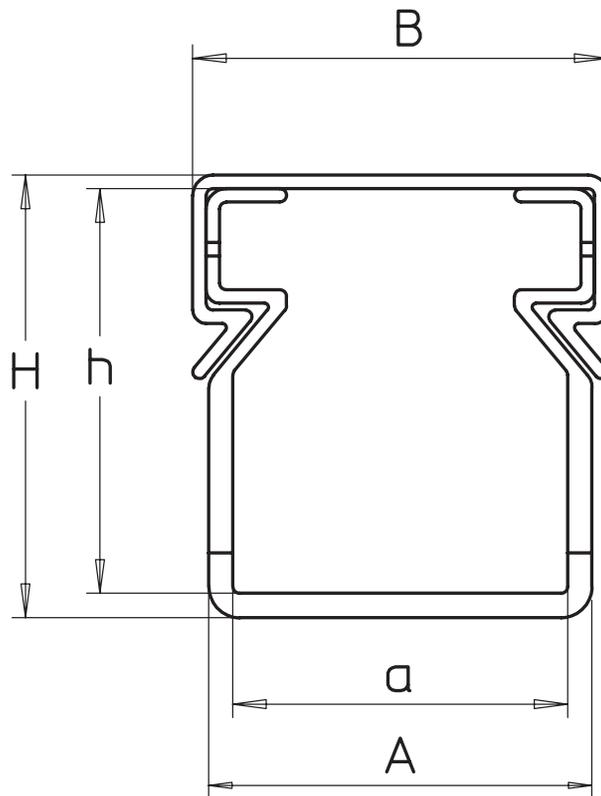
Dimensions LK4

Item no.	Type	Item no.	Type	Dimension a mm	Dimension A mm	Dimension B mm	Dimension h mm	Dimension H mm
6178001	LK4 15015			15	17	20	15	17
6178003	LK4 30015			15	17.8	20	30	32.4
6178005	LK4 30025			25	28.6	31	30	32.8
6178010	LK4 40025			25	28.6	31	40	42.8
6178012	LK4 40040			40	43.6	46.2	40	43
6178014	LK4 40060			60	64	66.4	40	43.2
6178016	LK4 40080			80	84	87	40	43.5
6178018	LK4 40100			100	104	107.4	40	43.7
6178026	LK4 60015	6178201	LK4 N 60015	15	18.6	20	60	62.8
6178028	LK4 60025	6178203	LK4 N 60025	25	29	31	60	63
6178031	LK4 60040	6178205	LK4 N 60040	40	44	46.2	60	63
6178033	LK4 60060	6178207	LK4 N 60060	60	64	66.4	60	63.2
6178035	LK4 60080	6178209	LK4 N 60080	80	84.4	87	60	63.7
6178037	LK4 60100	6178211	LK4 N 60100	100	104.6	107.4	60	64
6178039	LK4 60120	6178213	LK4 N 60120	120	124.6	127.8	60	64.2
6178050	LK4 80025	6178225	LK4 N 80025	25	29.4	31	80	83.2
6178052	LK4 80040	6178227	LK4 N 80040	40	44.4	46.2	80	83.3
6178054	LK4 80060	6178229	LK4 N 80060	60	64.4	66.4	80	83.4
6178056	LK4 80080	6178231	LK4 N 80080	80	84.6	87	80	83.9
6178059	LK4 80100	6178233	LK4 N 80100	100	104.8	107.4	80	84.1
6178061	LK4 80120	6178236	LK4 N 80120	120	124.8	127.8	80	84.3

Installation principle Rapid 45-2 GK, plastic

System components

1	Device installation trunking
2	Duct connector and joint cover
3	Joint cover
4	External corner
5	External corner hood
6	Flat angle
7	Flat angle hood
8	Internal corner
9	Internal corner hood
10	T piece adapter
11	T piece adapter on WDK
12	Endpiece
13	partition wall

OBO

Installation principle Rapid 45-2 GA, aluminium

System components

1	Device installation trunking
2	Duct connector and joint cover
3	Joint cover
4	External corner
5	External corner hood
6	Flat angle
7	Flat angle hood
8	Internal corner
9	Internal corner hood
10	T piece adapter
11	Endpiece
12	partition wall
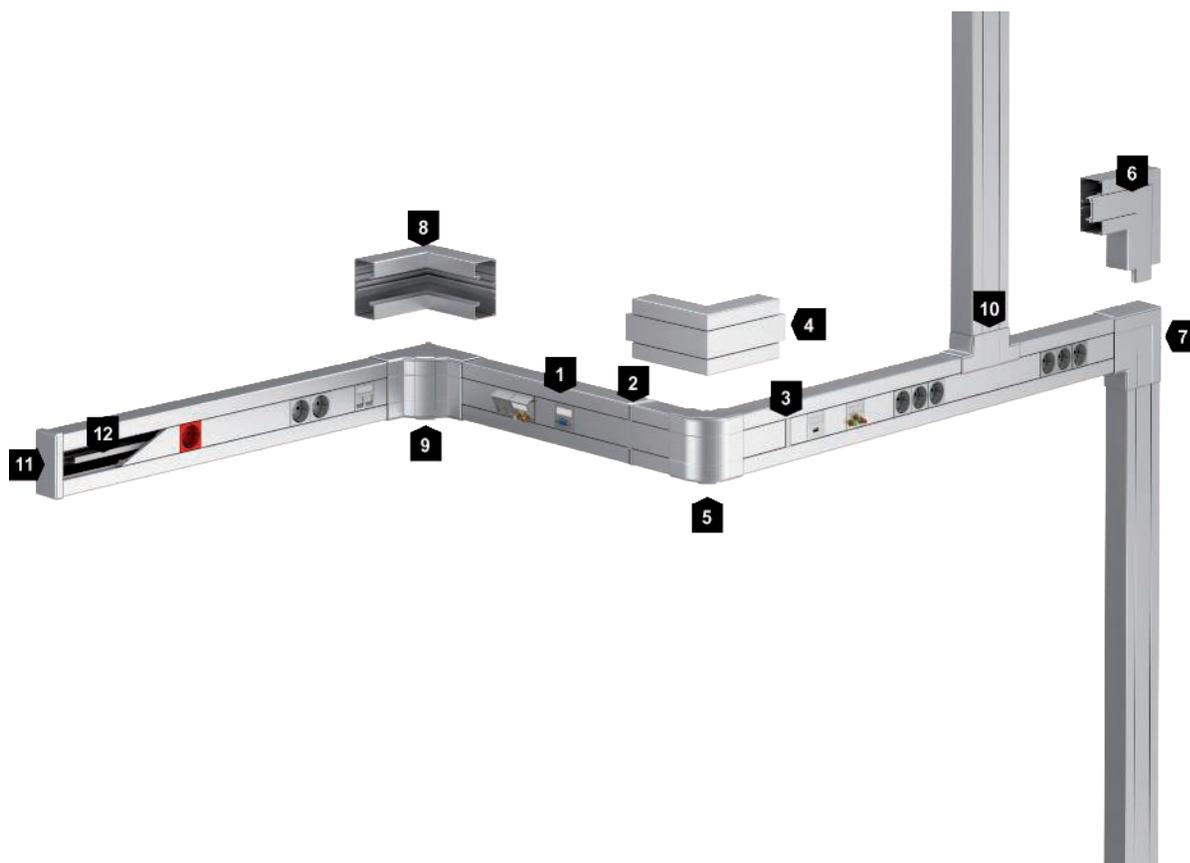
Discover the variety of
our Rapid 45-2
device installation trunking.

OBO
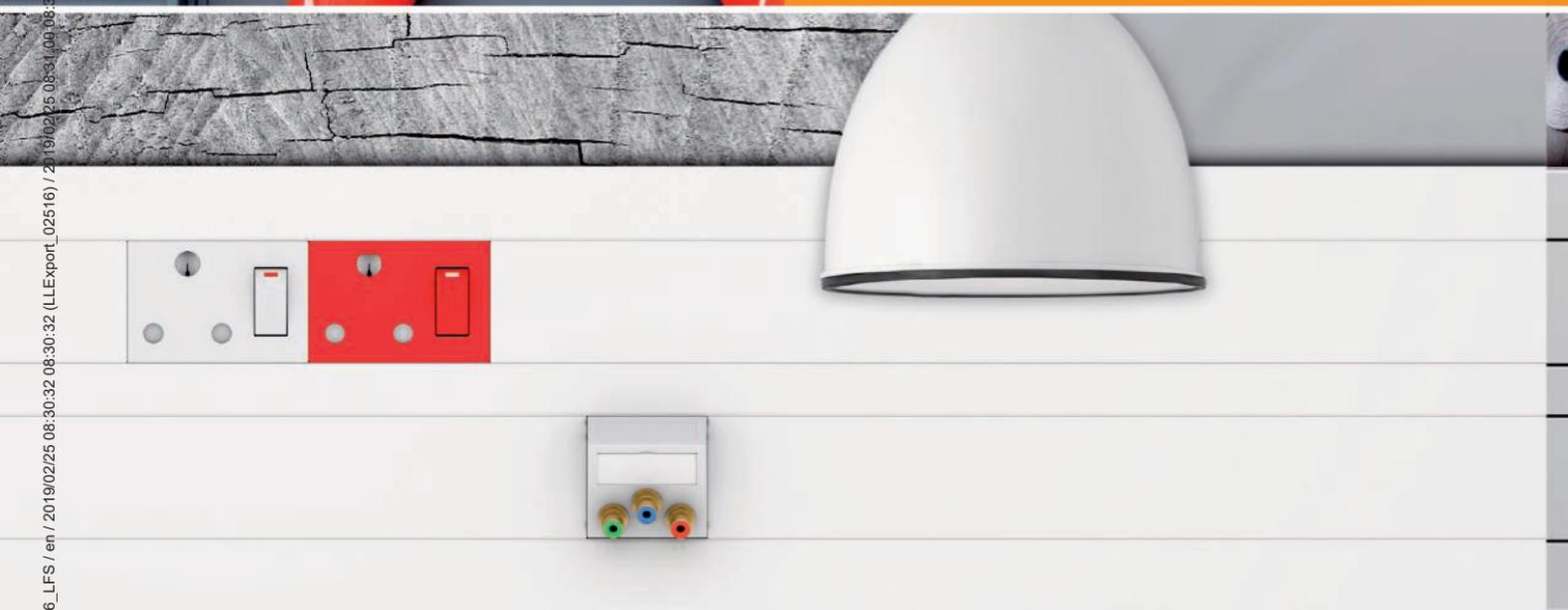
# A clear shape meets technical efficiency.

The new Rapid 45 generation unites a symmetrical design, homogeneous colour quality and technical flexibility in a single system. Innovative fittings allow practical wall installation in administration buildings, commercial areas and in industry. In three dimensions, the Rapid 45-2 device installation trunking offers a wide range of applications.

Plastic

Aluminium
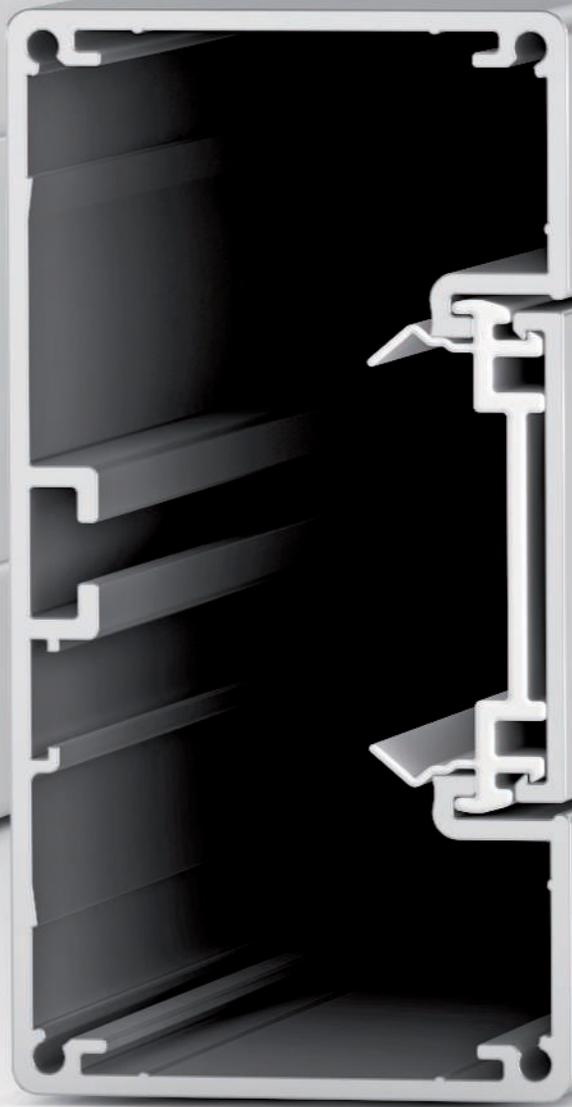
Device installation

Switches, sockets and data technology elements of the OBO Modul 45 and Modul 45connect series can simply be clicked into the trunking profile. A compact system, which can be mounted quickly and expanded easily.

Install more intelligently.

The principle of Modul 45

The perfect supplement to Rapid 45-2: Devices of the OBO Modul 45 series made by us. Switches, sockets and data technology and multimedia elements are simply snapped into the system environment by hand – and the practical installation is already complete.

Compared with standard installation types, the cost of installation, expansion and replacement of devices is considerably lower. No additional components, such as accessory mounting boxes, adapters or cover frames, are required.

One system, many options.

With its standardised installation dimension and a wide range of components, Modul 45 can offer the right solution for any system environment. The devices range fulfils countless international requirements and national standards.

Mounting with a single click.

Click

The principle of Modul 45connect

Modul 45connect stands out through its innovative socket and adapter components and offers numerous application options. The connection adapter, with which sockets can be arranged easily, creates a high level of flexibility. Thus, it is possible to create multi-socket combinations without the need for additional wiring. Combinations with a maximum of two connection adapters are tested and VDE-approved. 4x to 9x socket combinations can be created easily.

A clear profile. Rapid 45-2 plastic.

The classic device installation trunking for the office. Discover the versatility of Rapid 45-2.
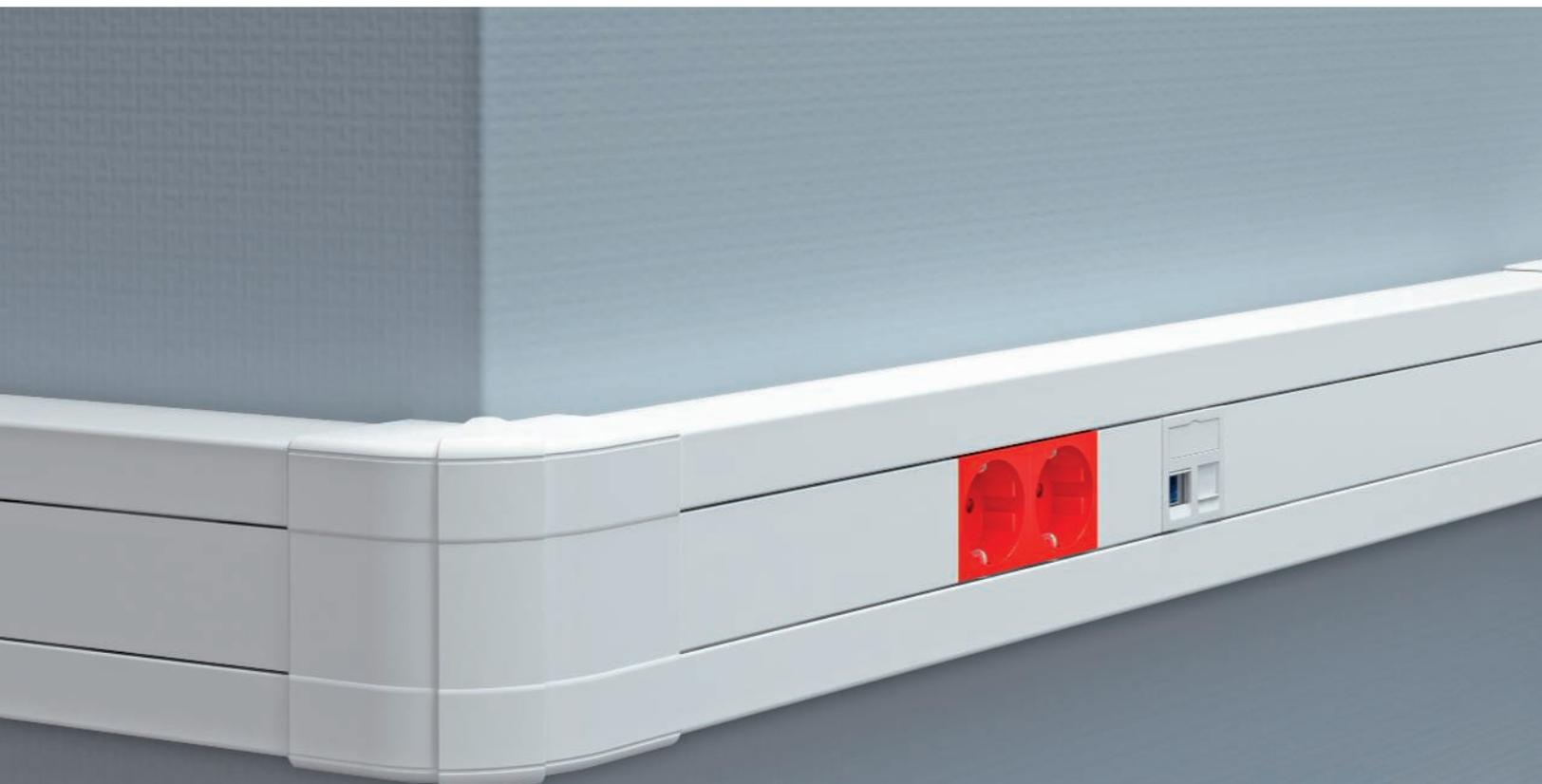
Range of variants

In the plastic variant, Rapid 45-2 is able to shine in both its light grey and pure white versions. Four trunking widths are available.

■ **RAL 9010 pure white**
■ **RAL 7035 light grey**

Available dimensions (trunking height x trunking width)
53 x 100 mm, one-compartment
53 x 130 mm, two-compartment
53 x 165 mm, two-compartment
53 x 160 mm, three-compartment

Quick mounting

Intelligent mounting details, such as joint connectors and covers, allow rapid installation.
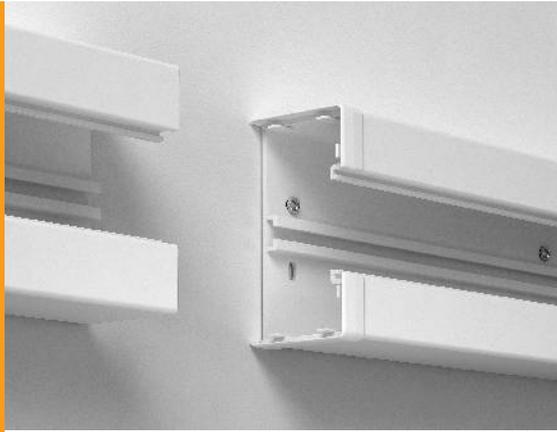
Fittings

A compact selection of fittings, such as internal and external corners, flat angles and T pieces, ensure tidy mounting. The hood fittings fit both the plastic system and the aluminium system.

Attractive design. Rapid 45-2 aluminium.

Adds value to any office environment: Rapid 45 in aluminium stands out through its fine appearance.

Fittings

Fixed and variable fittings, such as internal corners, external corners and T pieces, make installation perfect.

Range of variants

With their anodised or pure white powder-coated surface, aluminium Rapid 45-2 device installation trunking can bring elegance to the workplace. Special colours can also be implemented on request. Three trunking widths are available.

■ **Anodised**

■ **RAL 9010 pure white**

Available dimensions (trunking height x trunking width)
53 x 100 mm, one-compartment
53 x 130 mm, two-compartment
53 x 165 mm, two-compartment
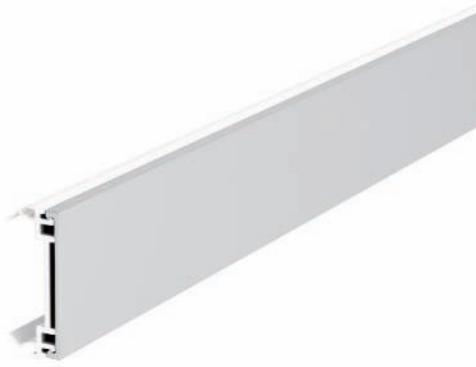
Innovative cover

The new cover consists of a PVC base profile and an aluminium panel profile.
It does not need to be included in the protective measure. Mounting and dismantling are very simple.
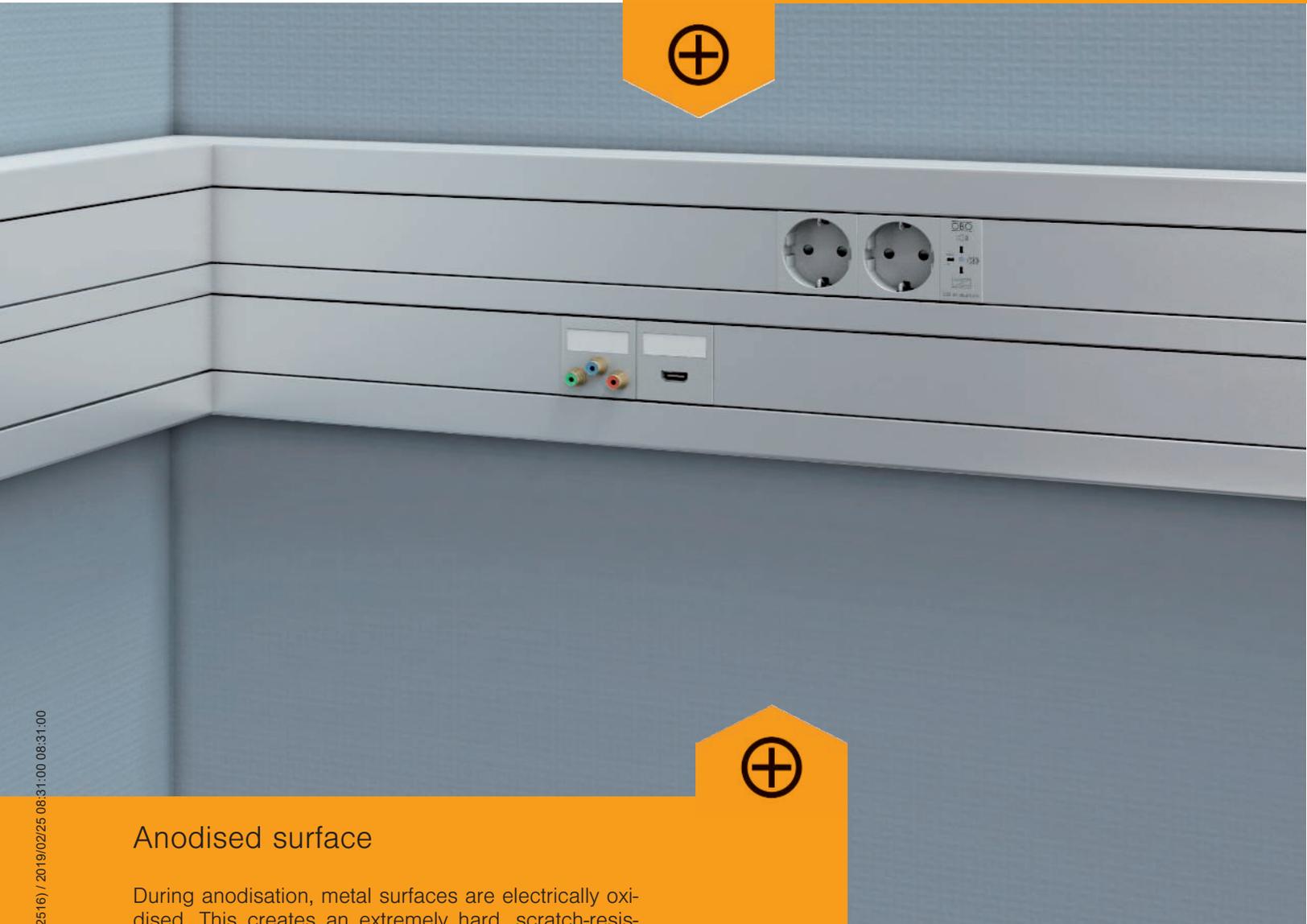
Anodised surface

During anodisation, metal surfaces are electrically oxidised. This creates an extremely hard, scratch-resistant surface. Compared to other treatment methods, no outside material is used. The metallic character of the aluminium remains intact. In addition, the method offers reliable protection against corrosion.

OBO

Innovation in detail

Rapid 45-2 combines straightforward design and the highest quality with perfect handling in termination and processing. Accessory parts, such as end pieces or variable fittings, fit both the plastic and also the aluminium trunking.
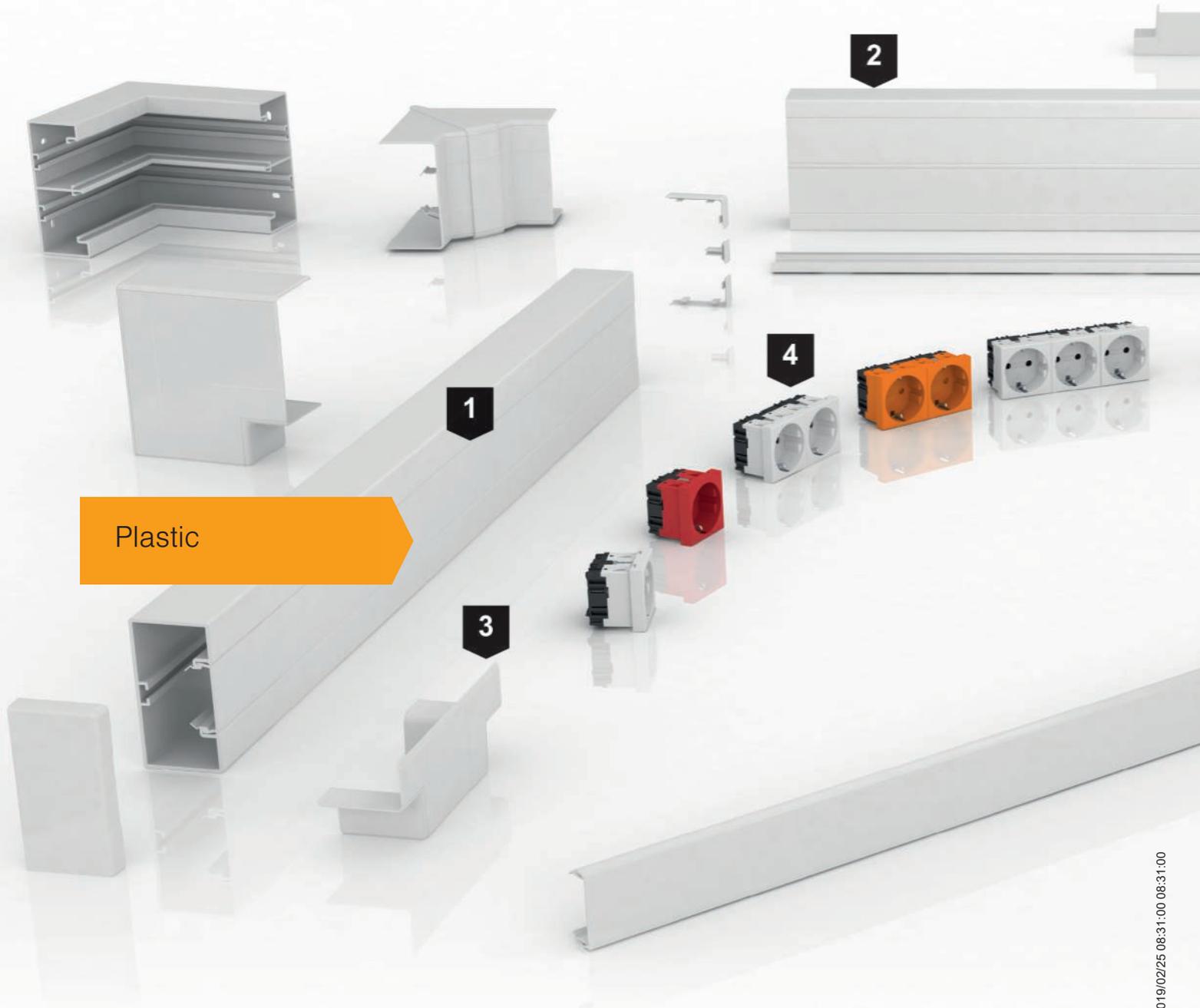
Plastic

1. Symmetrical

product design

Rapid, simple installation, reliable function and contemporary design. These are the hallmarks of the new Rapid 45-2 generation.

2. Additional dimensions

The Rapid 45-2 device installation system also shows its versatility in its dimensions. The additional width of 130 mm supplements the existing 100 mm and 165 mm dimensions.

3. Innovative fittings

Innovative fittings extend the Rapid 45-2 system. The new T piece top hoods can be installed quickly. They are suitable for supply with the WDK trunking 40060 or the Rapid 45-2 device installation trunking.
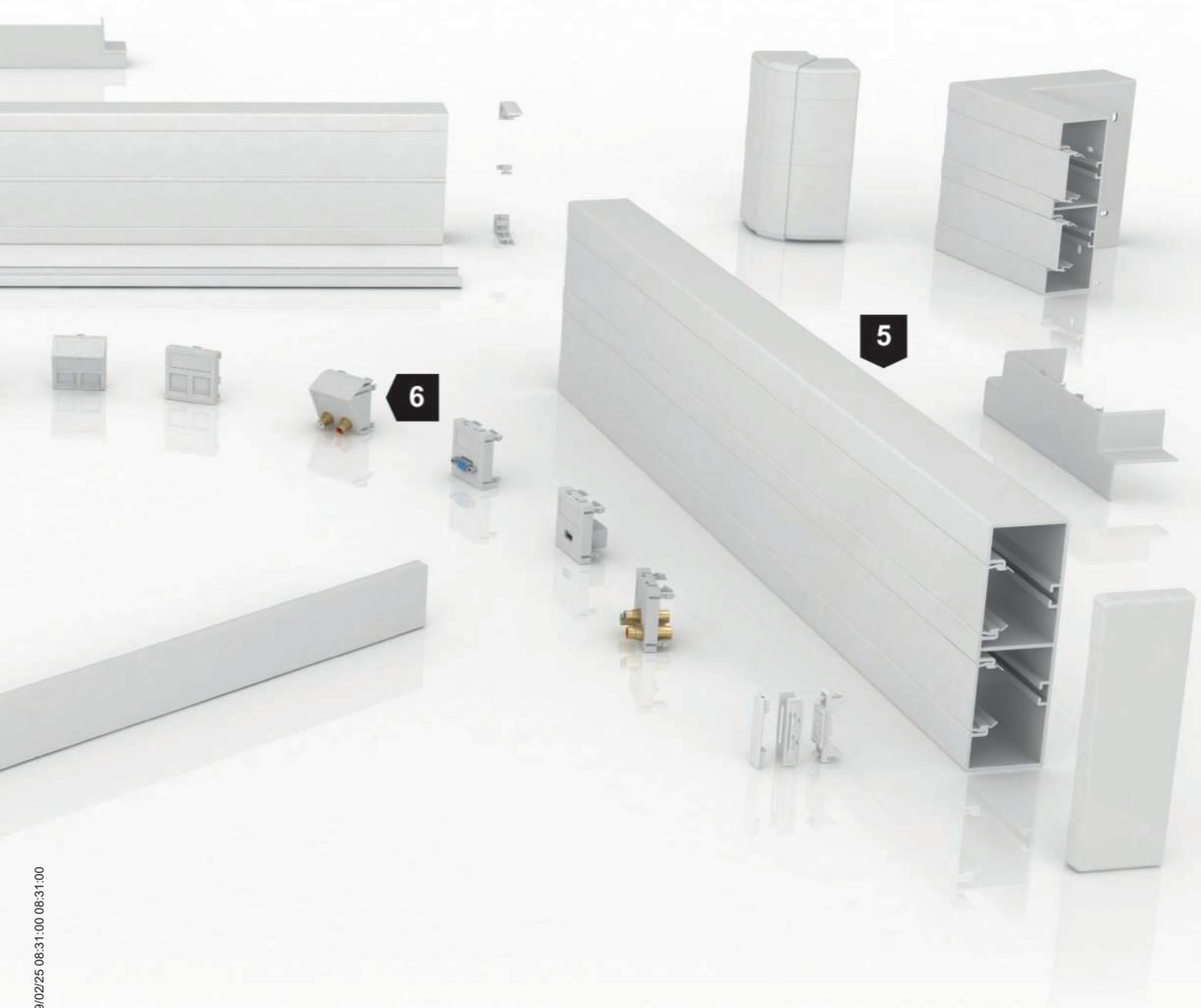
4. Toolless mounting

Ideal partners for the Rapid 45-2: Devices of the OBO Modul 45-2 and Modul 45connect series. The front-locking devices are simply clicked into the 45 mm system opening. There is no need to strip cables or mount cable connections and strain reliefs.

5. One system

Rapid 45-2 plastic and Rapid 45-2 aluminium have the same dimensions. The consistent standardisation simplifies the combination of individual system parts.

6. Variety

Switches, sockets, data technology and multimedia elements: Devices of the Modul 45 and Modul 45connect series allow the creation of functional yet aesthetic solutions for every system environment.

Quality in every element.

The Rapid 45-2 in anodised aluminium is always an elegant solution for offices and administrative areas. A very high level of quality can be seen in all the system details.

Mounting aid for device installation trunking Rapid 45-2

Office application area
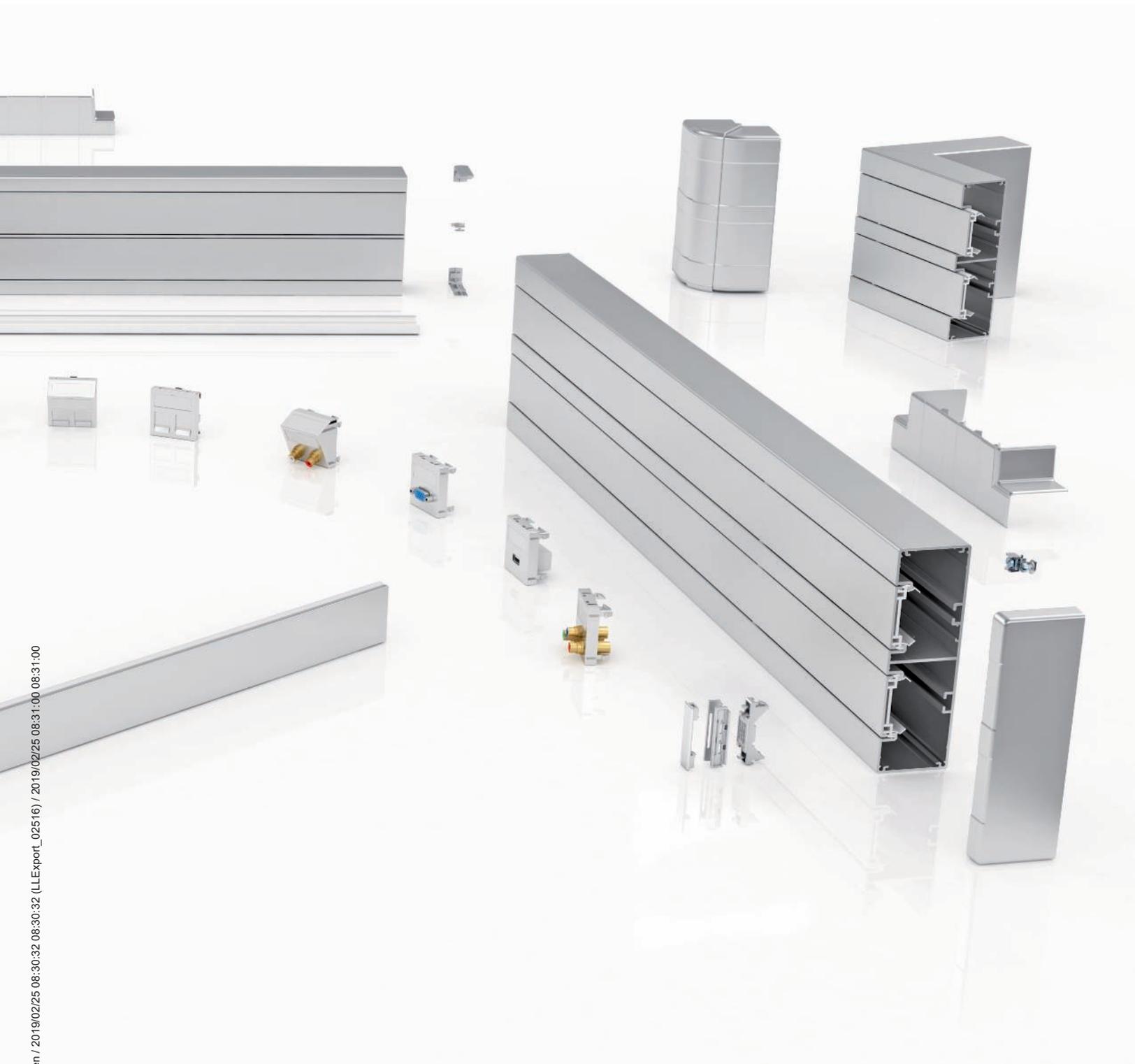The many practical fittings permit easy integration of the Rapid 45-2 device installation trunking system into any office situation. Switches, sockets and data technology are just clicked into place.

Cut trunking
The Rapid 45-2 PVC device installation trunking can be processed using a standard coping saw, whilst the Rapid 45-2 aluminium trunking should be cut with an electrical circular or capping saw.

Mounting of trunking
The Rapid 45-2 device installation trunking can be mounted quickly on the wall, for example, using knock-in anchors.

Mounting of variable fittings
The variable fittings allow an attractive cover, even for corners which are not at a right angle. Fixing takes place in the cover contour.

Mounting of fixed fittings
The fixed fittings are integrated in the trunking base installation.

Mounting of joint connectors
The joint connectors can be separated from their stalk and serve both as a joint connector and a joint cover to cover cut edges.
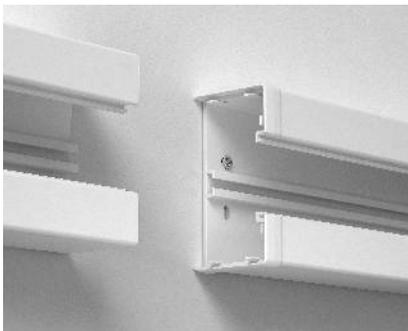
Mounting of joint cover
The joint cover is attached to the trunking bases. This provides an optically attractive connection for the trunking bases.

Mounting of joint connectors
In this way, the joint connectors can be used for both PVC trunking and aluminium trunking.

Mounting of end piece
The end piece is attached to the C profile rail on the trunking base. A spring attached to the end piece locks it securely in place.

Installation of socket
The cables are connected to the socket.

Mounting of socket
The socket is pushed into the Rapid 45-2 device installation trunking without additional aids.

Mounting of socket
The module socket locks into the cover contour.

Installation complete
The flexibility ensures clean and quick installation.

Earthing of aluminium Rapid 45
The cover for the aluminium trunking system consists of a PVC base profile and an aluminium screen and thus need not be connected conductively to the trunking base.

Mounting of T piece adapter
Easy-to-mount hood fittings are available for creating rising and falling T pieces.

Installation principle Rapid 80 PVC and PC-ABS

System components

1	Trunking
2	Coupling
3	Accessory mounting box single
4	Accessory mounting box double
5	Trunking cover
6	Trunking cover variable
7	External corner
8	External corner hood
9	Flat angle cover
10	Flat angle
11	Flat angle cover hood
12	Internal corner cover
13	Internal corner
14	T-piece
15	Endpiece
16	Partition
17	Trunking clamp
18	Accessory mounting box single Modul 45
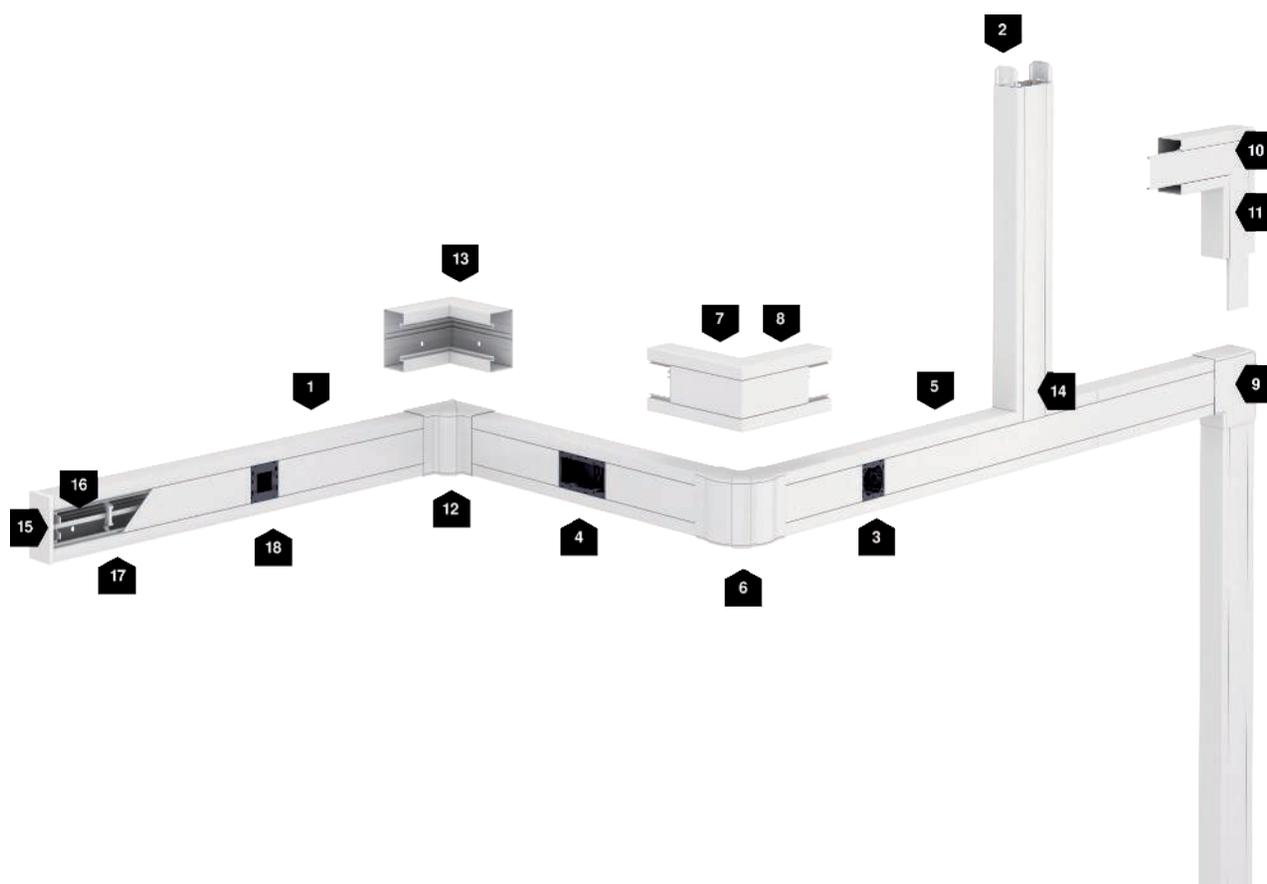
Installation principle Rapid 80 steel

System components

1	Trunking
2	Coupling
3	Accessory mounting box single
4	Accessory mounting box double
5	Trunking cover
6	Joint cover
7	Trunking cover variable
8	External corner
9	External corner hood
10	Flat angle cover
11	Flat angle
12	Flat angle cover hood
13	Internal corner cover
14	Internal corner
15	T-piece
16	Endpiece
17	Partition
18	Trunking clamp
19	Accessory mounting box single Modul 45
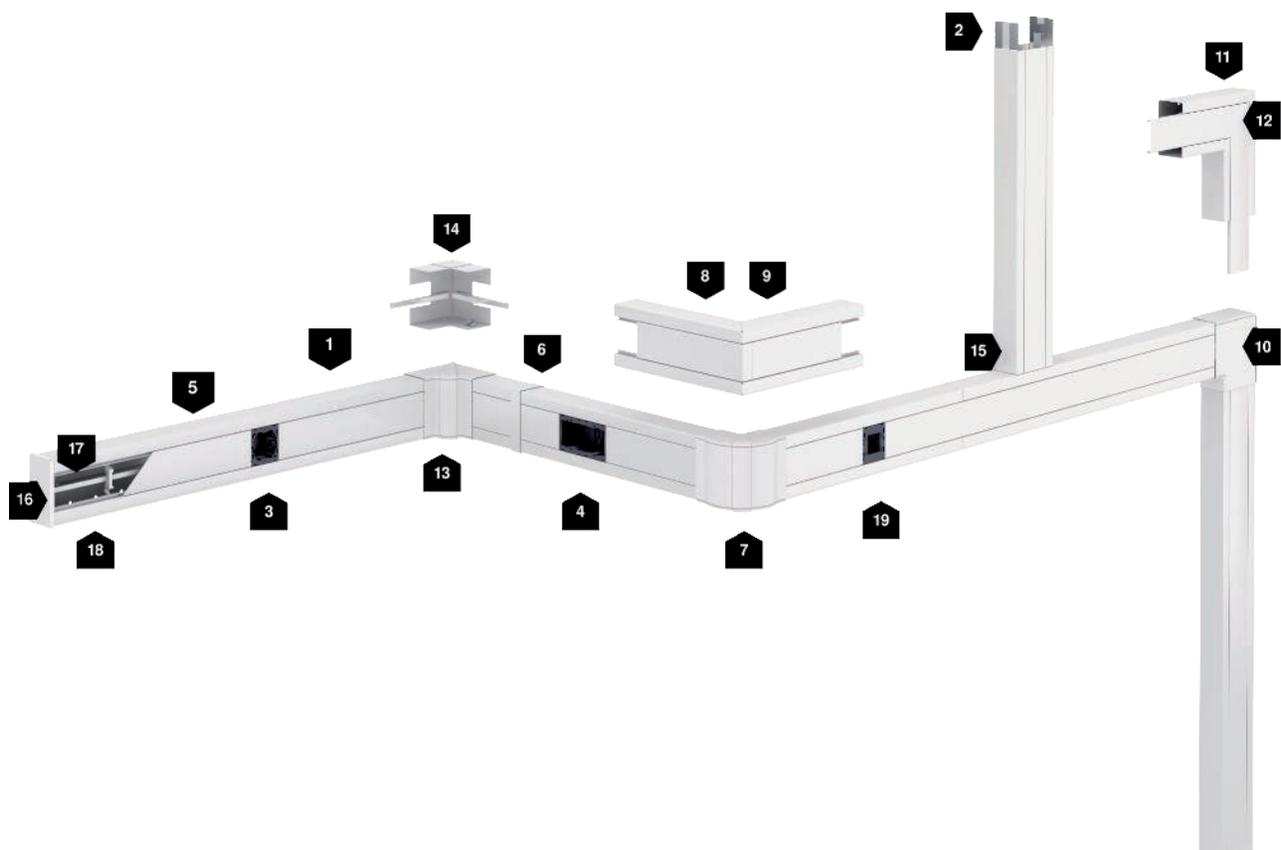
Installation principle Rapid 80 aluminium

System components

1	Trunking
2	Coupling
3	Accessory mounting box single
4	Accessory mounting box double
5	Trunking cover
6	External corner
7	External corner hood
8	Flat angle
9	Flat angle hood
10	Internal corner
11	T-piece
12	Endpiece
13	Partition
14	Trunking clamp
15	Accessory mounting box single Modul 45
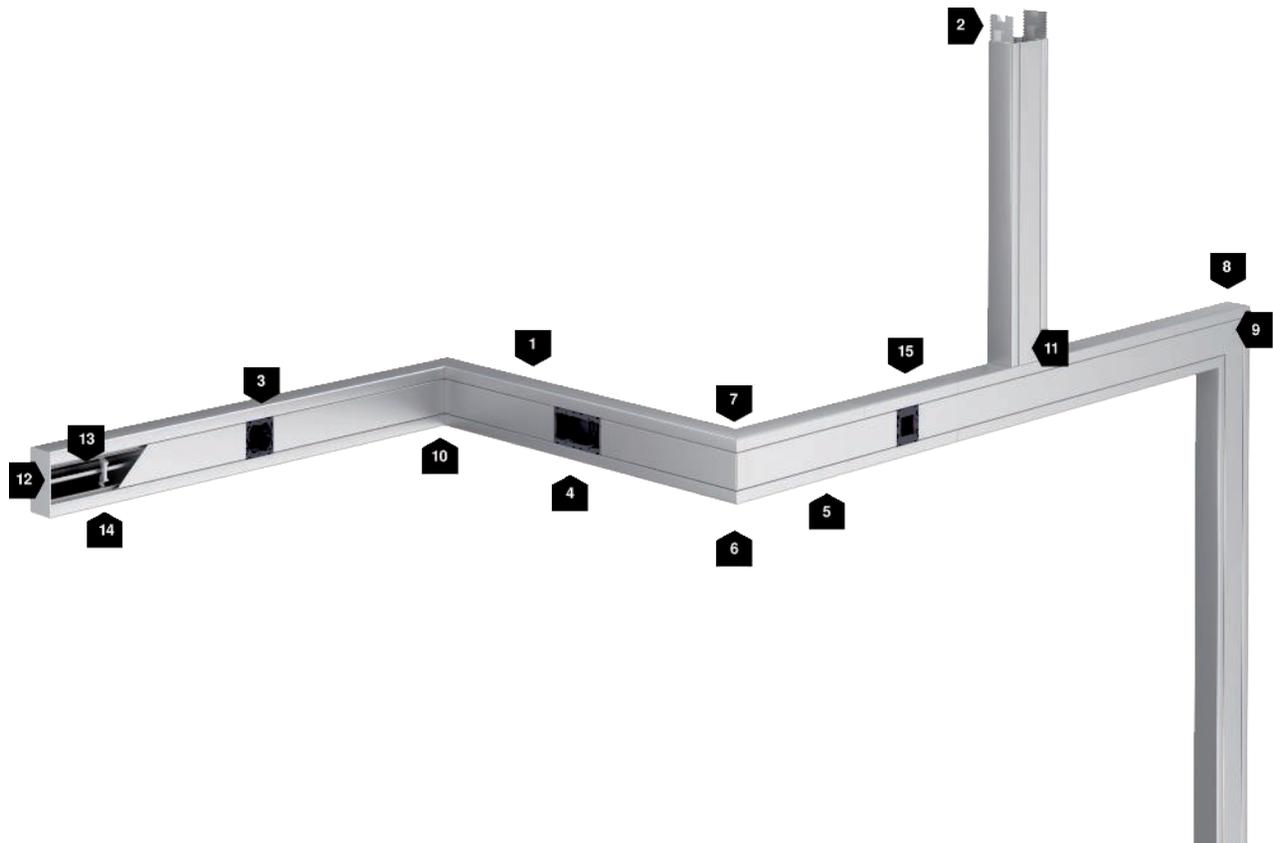
Three times Rapid 80. Three times one system.

Rapid 80 combines design and function into a single system in an unfussy and convincing manner. Thanks to the consistent standardisation of system components, the three types of trunking can either be used as individual variants or in combination.

Rapid 80 is thus the right choice in any location where there is a lot to install. Function and an attractive appearance simply go well together in this device installation trunking. The clear advantage is also their flexibility. The right system is available for every building.

Plastic

Sheet steel
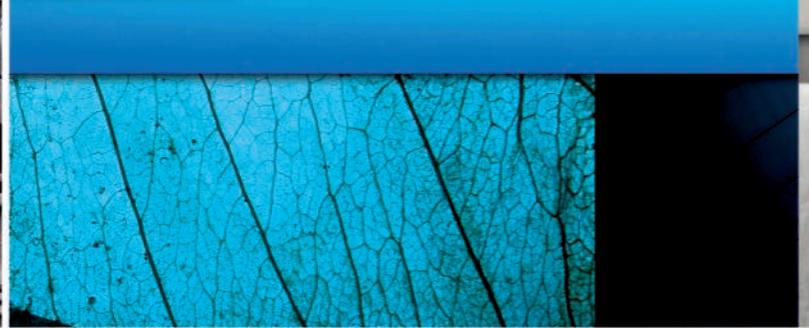
Discover the variety of
our Rapid 80
device installation trunking.
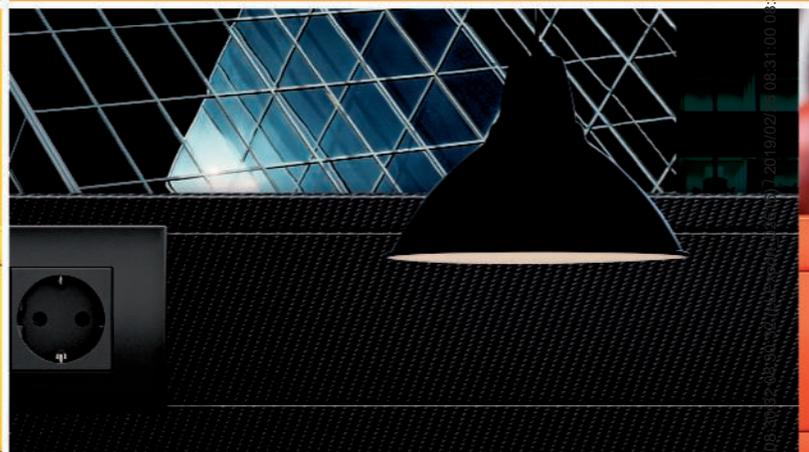
OBO
BETTERMANN

OBO

Classic. Rapid 80 plastic.

The practical and economic solution for offices. Give your design ideas free rein with our classic plastic variant.

Range of variants

Four colours, one trunking height and three trunking widths – this is just how varied the Rapid 80 plastic range (GK) is. The trunking has one compartment and is symmetrical. All the trunking has pre-mounted trunking couplings.

- ☐ RAL 9010 pure white
- ☐ RAL 9001 cream
- ☐ RAL 7035 light grey
- ☐ RAL 7030 stone grey

Available dimensions (trunking height x trunking width)
70 x 110 mm
70 x 130 mm
70 x 170 mm

Practical details

The plastic variant offers exclusive pre-mounted trunking couplings. The trunking clamps too are just one of the intelligent details allowing rapid mounting.

Fittings

Fixed fittings, such as external and internal corners, flat angles and T pieces, allow tidy mounting. As a special feature, the plastic variant of the Rapid 80 also offers variable internal and external corner hoods as well as flat angle hoods.

Optional: Halogen-free version

With low smoke gas production, no corrosion and safety: Halogen-free Rapid 80 device installation trunking fulfil high safety standards. Completely manufactured from halogen-free plastics, if there is a fire, they reduce the amount of toxic smoke gases and the formation of corrosive substances.

HALOGEN FREE

OBO

Robust. Rapid 80 sheet steel.

They can stand a lot. Rapid 80 steel device installation trunking can show strength and resilience in any application situation.

Range of variants

Sheet steel Rapid 80 device installation trunking (GS) shows its solid class in two trunking heights and four trunking widths. The trunking has one or two compartments and can be symmetrical or asymmetrical. On request, we can also provide powder coatings in customer-specific colours, as well as laminations.

■ RAL 9010 pure white
■ RAL 9001 cream
RAL 7035 light grey
Special colours
Laminations

Available dimensions (trunking height x trunking width)
70 x 110 mm
90 x 110 mm
70 x 130 mm symmetrical and asymmetrical
90 x 130 mm symmetrical and asymmetrical
70 x 170 mm symmetrical, asymmetrical and as double trunking
90 x 170 mm symmetrical, asymmetrical and as double trunking
70 x 210 mm asymmetrical and as double trunking
90 x 210 mm asymmetrical and as double desk trunking

Fittings

Various fittings, such as internal corners, external corners and flat angles, allow perfect, tidy mounting. The variable plastic fittings are compatible with the sheet steel product range.

⊕

⊕

Trunking covers

With smooth, fluted or transparent covers for the 80 mm track, the system can fit into any interior. Additional RAL colours are available on request.

⊕

Resilient surface

Sheet steel trunking is particularly resilient and long-lasting. The powder-coated surface can withstand even strong impacts.

Elegant. Rapid 80 aluminium.

Fittings

Different fittings offer a lot of flexibility during planning. Internal and external corners, T pieces and flat angles allow tidy mounting.

⊕

⊕

Range of variants

With their anodised or pure white powder-coated surface, aluminium Rapid 80 device installation trunking (GA) can bring elegance to the workplace.

◻ **Anodised**

◻ **RAL 9010 pure white**

Available dimensions (trunking height x trunking width)
70 x 110 mm
70 x 130 mm
90 x 130 mm
70 x 170 mm symmetrical
70 x 170 mm asymmetrical
90 x 210 mm double trunking

Anodised surface

During anodisation, metal surfaces are electrically oxidised. This creates an extremely hard, scratch-resistant surface. Compared to other treatment methods, no outside material is used. The metallic character of the aluminium remains intact. In addition, the method offers reliable protection against corrosion.

Easy installation

In the standardised 80 mm system opening, it is possible to engage switches, sockets and data technology quickly and easily. Matching accessories offer perfectly easy installation – from the wall end piece, through fastening panels to end pieces.

OBO

Three materials. One system.

Rapid 80 combines straightforward design and the highest quality with perfect handling in termination and processing. The trunking covers are smooth, fluted or transparent. Accessory parts, such as end pieces or variable fittings, fit both the plastic and sheet steel trunking and the aluminium trunking.

Plastic
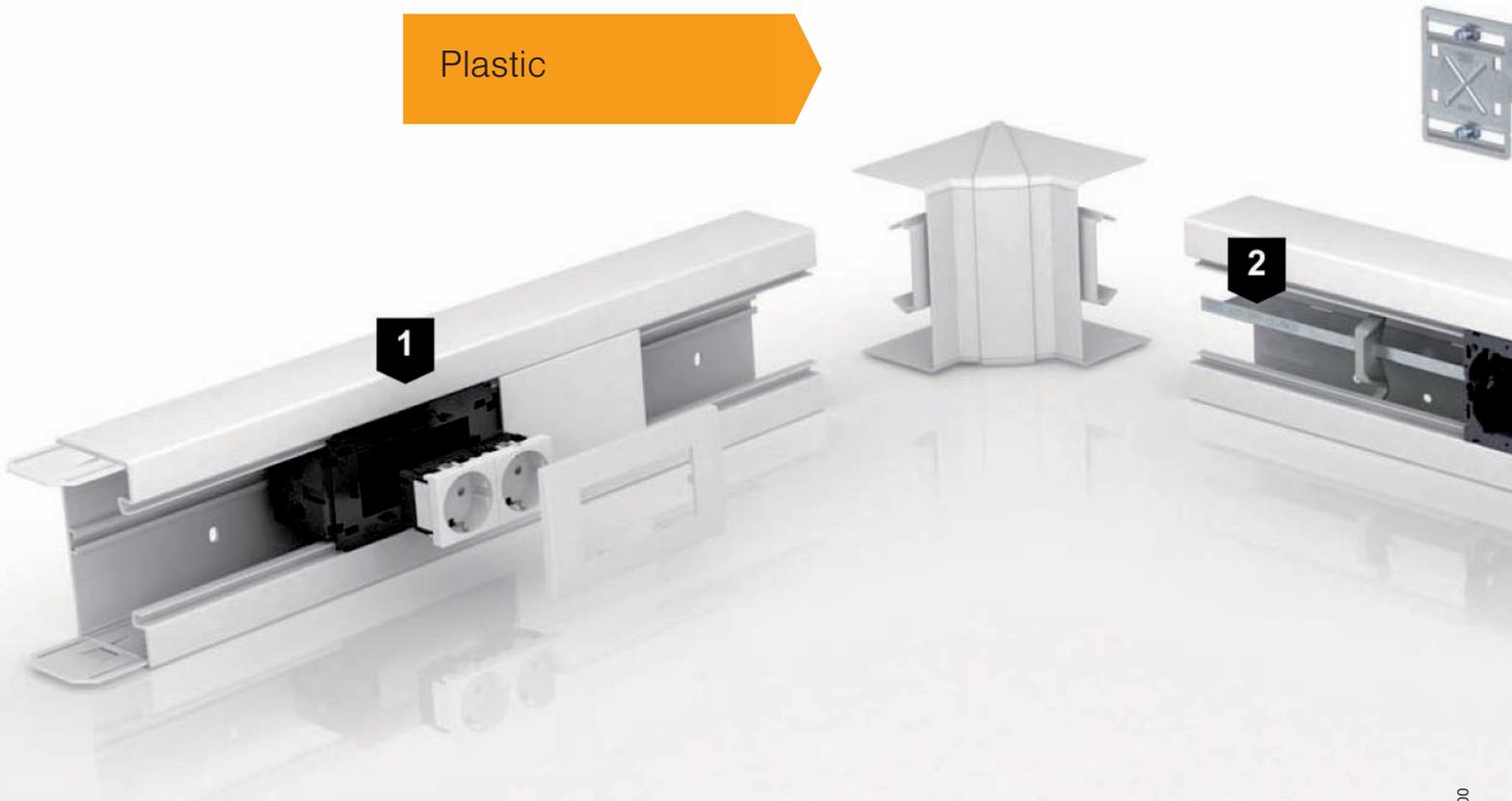
1. Accessory mounting boxes
The accessory mounting boxes are simply engaged in the system opening. They match the OBO Modul 45 and Modul 45connect series, as well as the product ranges of all switch manufacturers.

2. Partition and trunking clamp
Partitions and trunking clamps allow the safe, standardised installation of different voltage levels.

3. Fastening panels and convection grid profiles
Fastening panels make mounting at a distance from the wall easy. Convection grid profiles allow horizontal and vertical covering of the system.
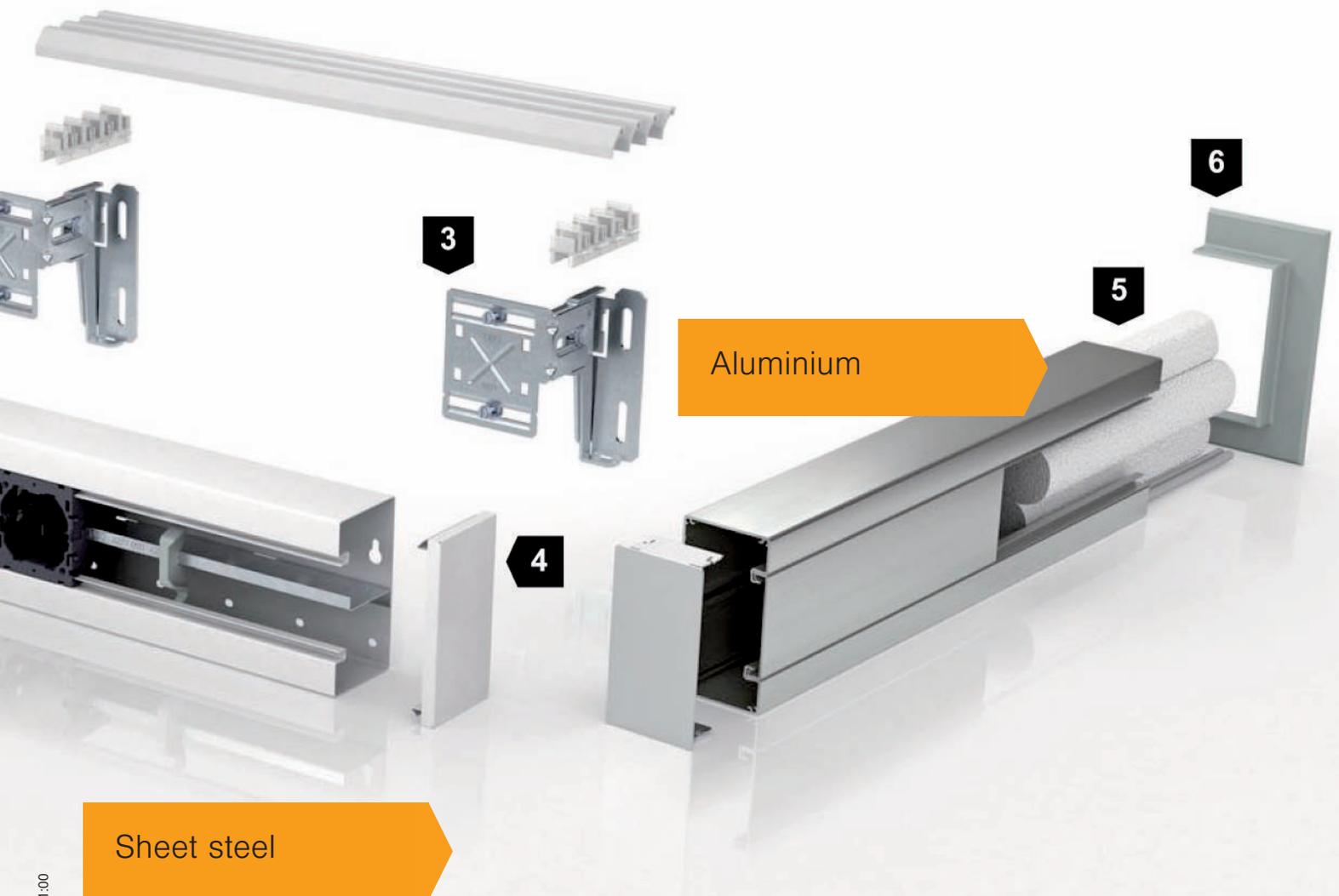
Aluminium

Sheet steel

4. End pieces

Saving the best until last: The various end pieces offer an attractive end. With fitting adapters, they fit on symmetrical and asymmetrical device installation trunking.

5. Noise and fire protection

Plenty of space for protection: Noise limit barriers or fire protection systems can be mounted in the area of a wall penetration.

6. Wall end piece

Open and closed wall end pieces with various dimensions and colours provide a tidy finish to wall penetrations.

Usable cross-section and quantity of cables

Trunking without accessory mounting box

Trunking with accessory mounting box

Usable cross-section without device installation
The usable cross-section of the device installation trunking is not restricted by device installation. The entire interior can be used for cable routing. The value "gross" in the tables indicates this usable trunking cross-section.

Usable cross-section for installed device installation units
The number of cables and the cable types are of key importance for the correct selection of trunking size. Even during the selection of the trunking system, it must be taken into account that the installation of accessory mounting boxes or device installation units means the loss of part of the usable cross-section. Refer to the tables for the usable cross-sections, which will help you to simplify the correct device installation trunking.

The installation of an accessory mounting box reduces the usable cross-section available for cable routing. The value "net" in the tables indicates this usable trunking cross-section.

Usable cross-section and quantity of cables, plastic, sheet steel, aluminium

Usable cable cross-section in cm²

Nominal size	Trunking height 70	Trunking height 70	Trunking height 90	Trunking height 90
	Gross approx.	Net approx.	Gross approx.	Net approx.
110	60.36	28.80	83.00	50.10
130	74.80	46.85	100.50	71.70
170	100.10	72.90	134.50	105.75
170 D top	51.50	23.65	63.60	40.55
170 D bottom	44.95	44.95	59.95	60.50
210	127.00	99.00	168.50	139.75
210 D top	65.72	37.84	87.85	59.05
210 D bottom	55.30	27.34	74.20	45.45
Desk trunking	99.50	73.10	-	-

Gross = trunking without service unit
Net = trunking with service unit

Number of cables to be laid in device installation trunking, filling factor 50%

Nominal size	Trunking height ST = 70	Trunking height ST = 70	Trunking height ST 90	Trunking height ST 90
Cable diameter	9 mm gross/net	11 mm gross/net	9 mm gross/net	11 mm gross/net
110	37/18	25/12	51/31	33/21
130	47/29	30/19	43/40	40/28
170	63/44	41/30	80/63	54/42
170 D top	32/15	21/10	41/24	27/16
170 D bottom	28/28	19/19	36/36	24/24
210	78/62	53/41	100/84	68/56
210 D top	40/24	27/16	53/35	35/23
210 D bottom	40/24	27/16	53/35	35/23
Desk trunking	61/45	41/30	-	-

Gross = trunking without service unit
Net = trunking with service unit

OBO

Decentral protection
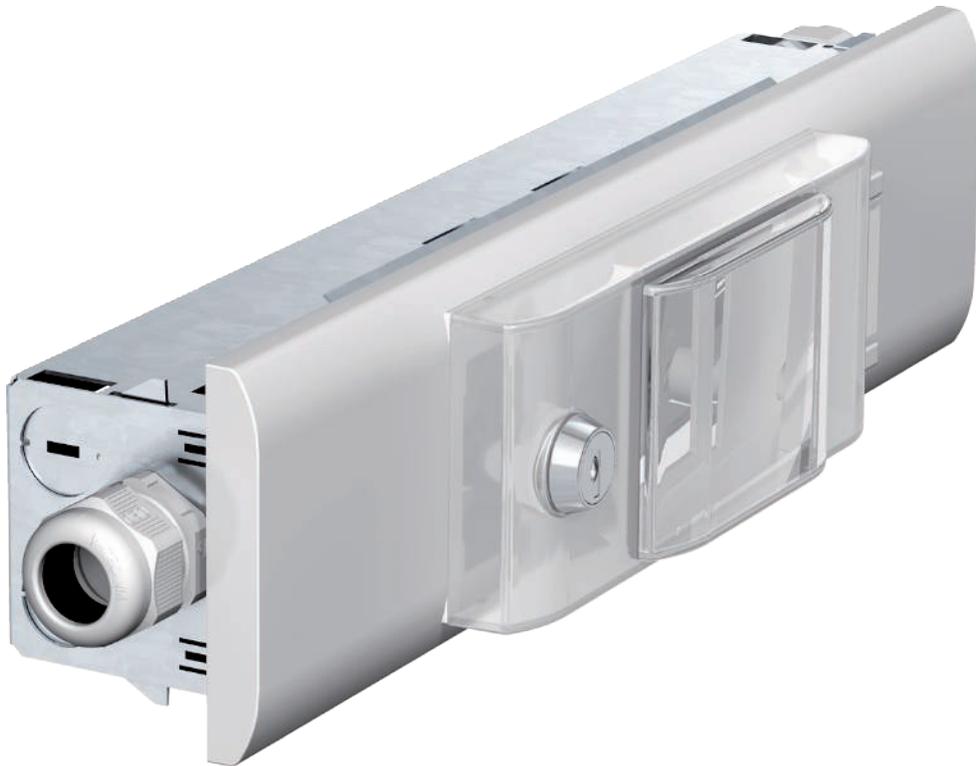
Decentral protection – IKR in-trunking flush-mount unit
With decentral protection, a single cable with a large cross-section is run as the supply cable from the distributor to the IKR. The circuits are then tapped at suitable points, the cable cross-section reduced and decentrally protected using cable safety switches. From the IKR, smaller cross-sections continue to the consumers. The in-trunking flush-mount unit IKR is suitable for all the device installation trunking with a system opening of 80 mm.

The benefits are to hand
There are less cables in the device installation trunking and the larger cross-sections up to the cable protection switches give a higher current load capacity in the sockets. The IKR in-trunking installation units contain everything in a single housing which is required for decentralised protection.

Noise protection

Air conduction of noise

To prevent air conduction of noise, the free cross-section of the trunking remaining after cabling must be filled with a noise insulation, e.g. air noise barrier, type 7 LSB. The same applies to any gaps between the trunking and the adjoining wall.

When used correctly, the air noise barrier, type 7 LSB, can achieve attenuation of up to 40 dB. The air noise barrier is made of rock wool and is provided in individual plaits, with 15 plaits in each package. Multiple plaits are usually required to fully insulate trunking. The following table contains the required number of plaits for standard trunking sizes.

When walls speak

In modern office buildings, device installation trunking is often run through office partitions, creating a connection between multiple offices. Here, there is the problem that noise may be carried through the trunking penetration. This air noise transmission can be prevented by using insulating wool in the area of the trunking wall penetration.

Required number of plaits according to the trunking size

Trunking width	Trunking height 70 mm	Trunking height 90 mm
Width 110 mm	12	15
Width 130 mm	13	17
Width 170 mm	15	20
Width 210 mm	19	24

OBO

Mounting aid for device installation trunking Rapid 80

GK flexible office installation
The large product range of fittings and installation options allows flexible installation, for which changes and additions are not a problem.

GK coupling mounting
The coupling of the GK device installation trunking is contained in the scope of delivery and is pre-mounted. It is pulled out of the trunking and automatically locks in the correct position. This allows simple mounting of additional trunking sections.

GK/GS/GA coupling mounting
A coupling pair must be ordered separately to connect two trunking bases.

GK/GS/GA coupling mounting
Insert the coupling in the top part of the device installation trunking and push it into the trunking. This automatically locks the coupling and, at the same time, the equipotential bonding is created between the two trunking bases.

GK/GS/GA accessory mounting box mounting
Lock the accessory mounting boxes of series 71GD. to the cover contour. They can be moved lengthwise in the trunking.

Accessory mounting box mounting
All the front-locking accessory mounting boxes of the 71GD... series can simply be inserted into the system opening of the Rapid 80 GK, GS and GA device installation trunking from the front.

Check of locking lugs
Together with vertically aligned convection grids, the connection profile is locked onto the wall brackets before mounting the GEK-S device installation trunking.

Installation of device installation trunking on wall bracket
The accessory mounting boxes must be secured against movement, in accordance with the table. This is done by mounting the covers, which come very close to the accessory mounting boxes.

GK/GS/GA device mounting
Switching and connection devices of all well-known manufacturers can be used. If a particularly large amount of space is required for the use of, for example, data boxes, various mounting supports are available without protective housings.

GK/GS/GA accessory mounting box mounting
The real trunking opening width of 76.5 mm ensures that even switches of a greater external radius do not leave visible openings between the top trunking cover and the series cover.

GK/GS/GA Modul 45 device installation
The Modul 45 accessory mounting box system and the appropriate covers of the S990 series allow space and time-saving installation in all the device installation trunking systems and service poles.
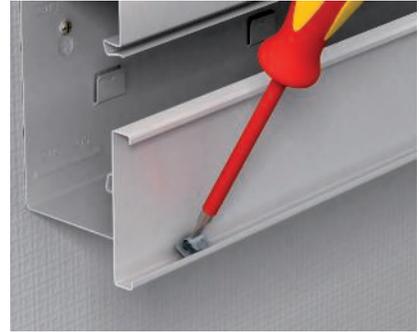
GS/GA cover earthing
With cut covers, the locking springs can be installed at a later date as necessary. They must be mounted at a distance of 50 mm from the end of the cover.

GS/GA cover earthing
The self-contacting cover earthing guarantees continuous protection without any additional wiring. The locking springs are pre-mounted in the cover.

GK/GS/GA duct clamp mounting
Together with the partition, the duct clamp prevents the cables from falling out and supports the stability of the systems when the upper parts are inserted.
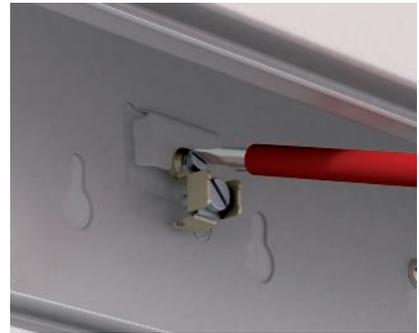
GS mounting of protective conductor connection bracket
The protective conductor connection bracket is turned into the appropriate recesses in the trunking base and fastened using a screwdriver.

GA mounting of protective conductor connection bracket
The protective conductor connection bracket is turned into the appropriate C rail in the trunking base and fastened using a screwdriver.

GK/GS end piece components
The end piece consists of a fastening element and a screen. The screen guides are suitable for each trunking type (symmetrical, asymmetrical or duoduct) as well as left and right end pieces. The pictograms on the screen help to select the appropriate guide.
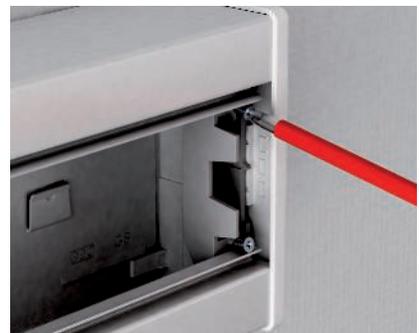
GK/GS end piece mounting
Place the pre-mounted end piece on the trunking and fix it to the trunking using the two bolts. Then mount the cover.

100% form meets 100% function: GAD design trunking

Perfect shape

No connectors, no data and net-work connections, no power sup-plies - all you can see is a fine, solid aluminium front. Anything which impacts on the reduced shape disappears behind the swivellable trunking cover, which is available in three different shapes.

Device installation

By using the 45 mm system open-ing for direct installation of switch-ing and connection devices of the Modul 45 series, we have kept the trunking system particularly com-pact. The cables are run out of the trunking system in bundled form using a cover adapter at the de-sired point.

LED light bar

An LED light bar can be mounted on the bottom side of the trunking system. It provides discreet lighting of the walls and surfaces beneath the trunking system.

Areas of application

GAD design trunking unites perfect design and the highest-quality materials with perfect functionality in mounting and use. It is the ideal system for hotel receptions, till areas in boutiques and high-class offices.

Installation principle of panel and convection grid systems

System components

1	Device installation trunking, steel
2	Steel cover
3	Plastic cover
4	Partition
5	Convection grid profile
6	Profile connector, horizontal
7	Profile connector, vertical
8	Mounting and connection profile
9	Floor panel
10	Fastening panel
11	Fastening panel
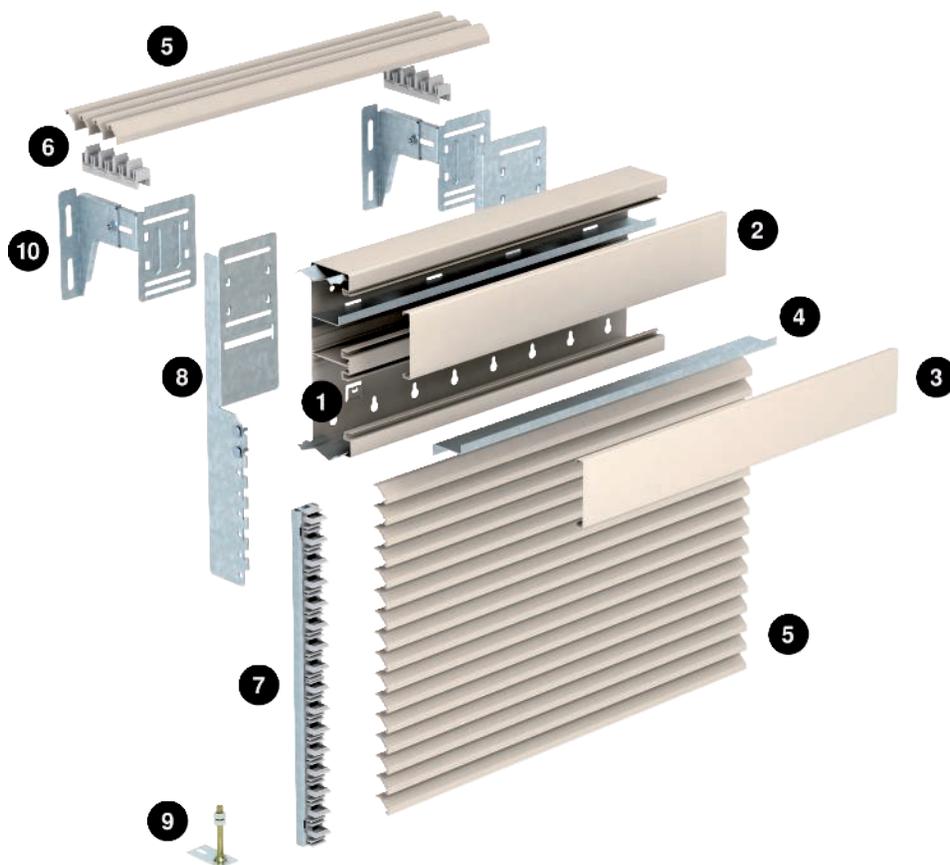
Mounting aid for Rapid 80 device installation trunking accessories

Panelling with convection grids
Convector panelling can also be fully created using convection grids. The spaces between the lamellae supports circulation and creates a visually attractive solution.
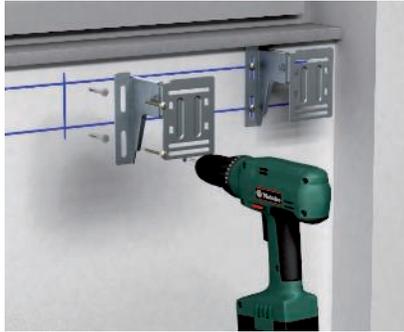
Installation of wall bracket
The holes for fastening the wall brackets are drilled and the wall panels fastened to the walls using bolts and anchors.

Installation of wall bracket
The height and depth of the wall panels are aligned one after the other and then the panels are locked.

Installation of stabilising profile
The stabilisation profile is required to install GEK device installation trunking with a trunking height of 213 mm. It is simply locked into the front of the existing panels.

Installation of connection profile
When combined with the vertically aligned convection grids or convector panelling, the appropriate installation and connection profiles are locked to the front of the fixing panels.
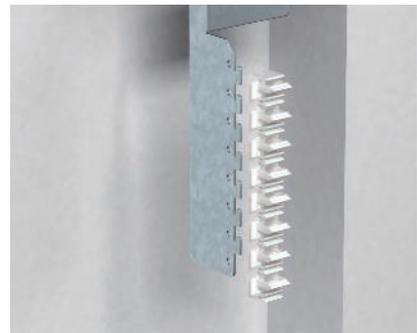
Installation of connection profile
The mounting and connection profiles, type 6VG3/... are required to install convection grid profiles. Type 6VV3/.. are required for closed convector panelling.

Installation of device installation trunking on wall bracket
The GEK device installation trunking is mounted on the wall racket and fastened using the M5 fastening screws. This also creates a conductive connection between the trunking and the wall bracket.

Installation of profile connector
The profile connectors for horizontal convection grids are attached to the wall brackets and locked with the clamp.

Installation of spacings for convection grid mounting
When mounting convection grids on the wall panels, ensure that a maximum spacing of 150 mm is maintained between the end of the grid lamella and the wall panels.

Installation of convection grids
The convector grid lamellae are inserted and locked in the profile connector one after another.

Installation of convection grids
The profile connectors are available in different lengths for accepting between two and twelve convection grid lamellae. If necessary, they can be mounted one behind the other on the fastening panels.

Convection grid with device installation trunking
The horizontal convection grids present a high-quality appearance and a perfect transition between the device installation trunking and the wall. They also allow the room air to circulate.

Mounting of vertical convection grids
The convection grid profiles are also simply locked into the profile connectors for vertical mounting.

Fire protection systems
OBO KBK-K fire protection cushions are the ideal solution for running PVC device installation trunking or cable trunking through walls classified as fire resistant.

Soundproofing barrier
The noise limit barrier is fitted in the trunking in the area of a wall penetration between two rooms. These achieve noise insulation of approx. 40 dB.

Mounting of wall cover
The wall cover is mounted on the already mounted device installation trunking. For this, pull off the double-sided adhesive tape on the bottom side and stick it on the wall cover.

		WDK cable trunking	WDKH cable trunking	LKM cable trunking	SKL skirting trunking	VK wiring trunking	VKH wiring trunking	Rapid 45-2 GK PVC device installation trunking	Rapid 45-2 GA aluminium device installation trunking	Rapid 80 GK PVC device installation trunking	Rapid 80 GKH PC/ABS device installation trunking	Rapid 80 GS steel device installation trunking	Rapid 80 GA aluminium device installation trunking	ISS service pole
6.1	According to material	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
6.2	According to impact resistance for installation and application			*1										
6.2.1	Electrical installation trunking systems for impact energy 0.5 J	x	x	*1										
6.2.2	Electrical installation trunking systems for impact energy 1 J			*1										
6.2.3	Electrical installation trunking systems for impact energy 2 J			*1	x									
6.2.4	Electrical installation trunking systems for impact energy 5 J			*1							x			
6.2.5	Electrical installation trunking systems for impact energy 20 J			*1								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
	-15				x					x				
	-5	x	x			x	x							
	Table 2: Minimum installation and application temperatures ± 2 °C													
	-25			x								x	x	x
	-15										x			
	-5	x	x		x									
	+5													
	+15					x	x							
	Table 3: Maximum application temperatures ± 2 °C													
	+60	x	x		x	x	x			x		x	x	x
	+90													
	+105													
	+120													
6.4	According to the resistance against fire spread													
6.4.1	Electrical installation trunking systems which permit the spread of fire	x	x			x	x			x				
6.4.2	Electrical installation trunking systems which do not permit the spread of fire			x	x							x	x	x

x appropriate classification, *1 in test, *2 in consultation

European classification
Classification to EN 50085-1

			WDK cable trunking	WDKH cable trunking	LKM cable trunking	SKL skirting trunking	VK wiring trunking	VKH wiring trunking	Rapid 45-2 GK PVC device installation trunking	Rapid 45-2 GA aluminium device installation trunking	Rapid 80 GK PVC device installation trunking	Rapid 80 GKH PC/ABS device installation trunking	Rapid 80 GS steel device installation trunking	Rapid 80 GA aluminium device installation trunking	ISS service pole
6.5	According to the electrical conductivity														
6.5.1	Electrical installation trunking system with electrical conductivity				x								x	x	x
6.5.2	Electrical installation trunking system without electrical conductivity		x	x		x	x	x			x				
6.6	According to the electrical insulation property														
6.6.1	Electrical installation trunking system without electrical insulation property				x								x	x	x
6.6.2	Electrical installation trunking system with electrical insulation property		x	x		x	x	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		IP 20	IP 20	IP 30	IP 41			IP 40	IP 40	IP 30	IP 30	IP 30	IP 30	IP 30
6.7.2	According to protection against ingress of water														
6.7.3	According to protection against contact with dangerous parts														
6.8	According to protection against corrosive or impure substances		-	-	-	-	-	-	-	-	-	-	-	-	-
6.9	According to the fastening type of the system trunking cover														
6.9.1	Only open the trunking cover of the electrical installation trunking system without tools		x	x	x		x	x							
6.9.2	Only open the trunking cover of the electrical installation trunking system with tools										x		x	x	
6.10	According to the electrical protection separation														
6.10.1	Electrical installation trunking systems without internal protection separation element				x		x	x					x	x	
6.10.2	Electrical installation trunking systems with internal protection separation element		x	x		x					x	x			

x Appropriate classification, *2 under consultation

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		WDK cable trunking	WDKH cable trunking	LKM cable trunking	SKL skirting trunking	VK wiring trunking	VKH wiring trunking	Rapid 45-2 GK PVC device installation trunking	Rapid 45-2 GA aluminium device installation trunking	Rapid 80 GK PVC device installation trunking	Rapid 80 GKH PC/ABS device installation trunking	Rapid 80 GS steel device installation trunking	Rapid 80 GA aluminium device installation trunking	ISS service pole
6.101.3	Concealed/surface-mounded electrical installation trunking on the wall or ceiling.													
6.101.3.1	Concealed/surface-mounded electrical installation trunking on the wall.	x	x	x						x		x	x	
6.101.3.2	Concealed/surface-mounded electrical installation trunking on the ceiling.	x	x	x					x	x	x	x	x	
6.101.3.3	Electrical installation trunking on the wall and supported by the base.				x									
6.101.3.4	Electrical installation trunking on the wall and supported by a different horizontal surface to the floor.													
6.101.4	Electrical installation trunking system, mounted at a distance to the wall or ceiling with fastenings									x		x	x	
6.102	According to the protection against contact between liquids and insulated cables and parts carrying voltage in the case of skirting trunking and wet cleaning of the floor													
6.102.1	No data													
6.102.2	Add to the instructions of the manufacturer, which limit the installation position of the electrical installation trunking system.													
6.102.3	Add to the instructions of the manufacturer, which allow all the installations of the electrical installation trunking system, but limits the layers of insulated cables and parts carrying voltage in the electrical installation trunking system.													
6.102.4	Add to the instructions of the manufacturer, which allow all the installations of the electrical installation trunking system and allows the layers of insulated cables and parts carrying voltage in the electrical installation trunking system.													
6.103	According to type													
6.103.1	Type 1 Electrical installation trunking system				x									
6.103.2	Type 2 Electrical installation trunking system (distribution electrical installation trunking system)	x	x	x										
6.103.3	Type 3 Electrical installation trunking system (installation electrical installation trunking system)					x	x			x		x	x	

x appropriate classification

Test marks

KEMA KEUR	KEMA-KEUR, Netherlands
c ㉇ US	Underwriters Laboratories Inc., USA + CSA, Canada
VDE	Verband der Elektrotechnik, Elektronik, Informationstechnik e.V., Germany
SABS APPROVED	South African Bureau of Standards

Chemical resistances of hard PVC

A = very good resistance
B = average resistance
C = not resistant

Medium	Temp. °C	Resistance
1.3-benzole disulphonic acid	20	A
1.3-butadiene	20	A
2.4-chlorobenzoyl chloride	20	A
2-amino-2.2-diphenylacetic acid	20	A
4-chlorine-2-nitroaniline	20	C
4-chlorobenzaldehyde-2-sulphonic acid	20	A
5-amino-2-hydroxybenzoic acid	20	A
Abietic acid	20	A
Acetaldehyde 100%	20	C
Acetaldehyde 40%	20	A
Acetaldehyde 40%	40	B
Acetaldehyde, acetic acid ratio 90:10	20	B
Acetanilide 100%	20	A
Acetates (ammonium-, Na- and others)	50	A
Acetic acid 10%	60	A
Acetic acid 100%	20	A
Acetic acid 100%	60	B
Acetic acid 25%	40	A
Acetic acid 25–70%	40	A
Acetic anhydride	20	C
Acetone	20	C
Acetophenone (methyl phenyl ketone)	20	C
Acetylacetone (2.4-pentanedione)	20	C
Acetylene 100%	20	B
Acetylsalicylic acid	20	A
Adipic acid	20	A
Adipic acid	60	B
Alcoholic drinks	< 40	A
Alizarin 100%	20	A
Alkanoic sulphonic acids	50	A
Allyl alcohol 100%	20	B
Allyl alcohol 100%	60	C
Allyl chloride	20	C
Aminobenzene (p-)	20	A
Aminobenzenesulphonic acid (m-, o-, p-)	20	A
Aminosalicylic acid (p-)	20	A
Ammonia (vapours of all concentrations)	40	A
Ammonia (vapours of all concentrations)	60	B
Ammonia, anhydrous, liquid	< 60	B
Ammonium hydroxide	60	A
Aniline 100%	20	A
Aniline chloride, saturated solution	20	C
Apple juice	60	A
Ascorbic acid	20	A
Aspartic acid	20	A
Beer	60	A
Benzine, containing benzole	20	C
Benzine, free from aromatic hydrocarbons	60	A
Benzoic acid	40	A
Benzoic anhydride	30	A
Benzole	20	C
Benzophenone 100%	20	C
Benzosulphonic acid	60	A
Benzotrichloride	20	C
Benzotrifluoride	20	C
Benzoylbenzoic acid	20	A
Benzyl chloride	20	C
Betene	20	A
Bleaching liquor, 12% active chlorine	40	A
Bleaching liquor, 12% active chlorine	60	B
Blood	40	A
Boiled oil	60	C
Borates (NA-)	20	A
Borax	40	A
Boric acid	20	A
Brewer's wort	20	A
Brine	60	A
Bromates (K-, Na-)	40	A
Bromic acid	20	A
Bromides (K-, Na- and others)	60	A
Bromine water	20	A
Bromine, gaseous, dry	20	A
Bromine, liquid	20	C
Bromobenzene	20	C
Bromochloromethane	20	C
Bromochloropropane	20	C
Bromoform 100%	20	C
Butane, gaseous, 30%	20	A
Butanediole over 60%	40	B
Butanediole over 60%	20	C
Butanediole to 10%	20	A
Butanol	60	A
Buttermilk	20	A
Butyl acetate	20	C
Butyl butyrate	20	C
Butyl chloride	20	C
Butyl glycolate	20	C

Medium	Temp. °C	Resistance
Butyl phenoles	20	C
Butyric acid 100%	20	C
Butyric acid 20%	20	A
Butyric acid 20%	60	C
Carbon dioxide	60	A
Carbon disulphide 100%	20	B
Carbon monoxide	60	A
Castor oil	60	A
Chlorates (K-, Na- and others)	20	A
Chlorates (K-, Na- and others)	60	B
Chlorates (K-, Na- and others)	60	A
Chloric acid to 20%	40	A
Chloric acid to 20%	60	B
Chlorides (ammonium-, Na- and others)	20	A
Chlorine cyanide	20	A
Chlorine water (saturated solution)	20	B
Chlorine, gaseous, dry 0.5%	20	A
Chlorine, gaseous, dry 100%	20	B
Chlorine, gaseous, moist 5%	20	B
Chlorine, liquid	20	C
Chloroacetaldehyde	20	C
Chloroacetic acid	20	A
Chloroacetones	20	C
Chloroacetylchloride	20	C
Chloroanilines	20	C
Chlorobenzaldehyde	20	C
Chlorobenzene	20	C
Chlorobenzotrifluoride	20	C
Chlorobenzoylchloride	20	C
Chlorocresoles	20	C
Chloroethylbenzene	20	C
Chloroform	20	C
Chloronaphthalines	20	C
Chloronitrobenzoic acid	20	A
Chromates (K-, Na- to 50%)	50	A
Chrome alum	60	A
Chromic acid	30	A
Chromic acid to 50%	40	A
Citrates (ammonium-, Na)	20	A
Citric acid	20	A
Citric acid	60	B
Cresol	20	C
Cumene	20	C
Cyanacetic acid	20	C
Cyanamide	20	A
Cyanides (K-, Na- to 50%)	60	A
Cyclohexanol	20	C
Cyclohexanone	20	C
Developer	40	A
Dextrose	50	A
Dibromomethylene	20	C
Dibutyl phthalate	20	C
Dibutyloxalate	20	C
Dichloroethylene	20	C
Dichloropropylene	20	C
Dichromates (K-, Na-)	50	C
Diethyl ether	20	C
Diethylamine 100%	20	C
Diethylene glycol	60	C
Dimethylether	20	C
Di-n-butylether	20	C
Diotylphthalate	20	C
Dioxan	20	C
Diphenyl	20	C
Diphenylamine	20	C
Ethane	20	A
Ethanol	40	A
Ethanolamine	20	B
Ethyl acetate	20	C
Ethyl acrylate	20	C
Ethyl chloride	20	C
Ethylbenzene	20	C
Ethylene glycol	20	A
Fish oil	20	A
Fixing bath	60	A
Fluorides (ammonium-, K-, Na- and others)	60	A
Fluorine	20	B
Fluorine	60	C
Formaldehyde	60	A
Formamide 100%	20	C
Formiates (ammonium- and others)	20	A
Formic acid 100%	20	B
Formic acid 100%	60	C
Formic acid 50%	40	A
Furfural	20	C
Furfuryl alcohol	20	C
Gelatine	60	A

Chemical resistances of hard PVC

A = very good resistance
B = average resistance
C = not resistant

Medium	Temp. °C	Resistance
Gluconic acid	20	A
Glucose	60	A
Glutamic acid	20	A
Glycerine	60	A
Glycine	40	A
Glycol	60	A
Heptanes	20	A
Hexachloroethane	20	C
Hexacyanoferrates-II (Na-)	40	A
Hexacyanoferrates-III (K-)	40	A
Hexafluorosilicates (ammonium-, K- and others)	60	A
Hexafluorosilicic acid 32%	60	A
Hexamethylenetetramine (urotropine) 40% aqueous solution	60	A
Humic acids	20	A
Hydrazine, diluted solution 100%	20	C
Hydrazine, diluted solution 30%	20	A
Hydrobromic acid to 40%	60	A
Hydrochloric acid to 30%	20	A
Hydrochloric acid to 30%	60	B
Hydrochloric acid to 37%	20	A
Hydrochloric acid to 37%	40	B
Hydrofluoric acid to 40%	40	A
Hydrofluoric acid to 60%	60	B
Hydrogen bromide 100%	20	A
Hydrogen bromide 100%	60	B
Hydrogen chloride (gaseous, dry and moist)	40	A
Hydrogen cyanide	40	A
Hydrogen peroxide to 30%	60	A
Hydrogen peroxide to 90%	20	A
Hydrogen sulphide	60	A
Hydroxides (alkaline-earth metal)	60	A
Hydroxides (K-, Na-)	60	A
Hypochlorites (K-, Na- and others)	60	A
hypochlorous acid	60	A
Illuminating gas	20	A
Iodates (K-, Na- and others)	60	A
Iodides (K-, Na-)	60	A
Iodine	20	C
Isobutylphosphate	20	C
Lactic acid 10%	20	A
Lactic acid 10%	60	C
Lactic acid 100%	20	C
Lard	20	A
Linoleic acid	60	A
Linseed oil	60	A
Malic acid	20	A
Methanol 100%	40	A
Methanol 100%	60	B
Methyl bromide	20	C
Methyl chloride	20	C
Methyl methacrylate	20	C
Methylamine	20	B
Methylene dichloride	20	C
Milk	20	A
Mineral oils	60	C
N,N-diethyl aniline	20	C
Naphthalene	20	C
Nitrates (ammonium-, K-, Na- and others)	60	A
Nitric acid 25%	20	A
Nitric acid 25%	60	B
Nitric acid 50%	20	A
Nitric acid 50%	50	B
Nitric acid 95%	20	C
Nitrites (K-, Na- and others)	60	A
Nitrobenzene	20	C
Nitrogen oxide	20	C
Nitroglycerine	20	B
Nitrous acid to 50%	50	A
Nitrous acid to 98%	20	C
Oleic acid	60	A
Oxalates (ammonium-, K-, Na- and others)	60	A
Oxalic acid	40	A
Oxygen	60	A
Ozone 10%	30	A
Ozone 10%	60	B
Palmitic acid	20	A
Paraffin	40	A
Pentyl laurate	20	C
Pentylacetate	20	C
Pentylalcohol	60	A
Pentylchloride	20	C
Perbonate (K-)	60	A
Perchlorate	40	A
Perchloric acid 70%	20	A
Permanganate (K-) 6 to 15%	40	A

Medium	Temp. °C	Resistance
Permanganate (K-) 6 to 15%	60	B
Permanganate (K-) to 6%	60	A
Peroxymonosulphuric acid (Caro's acid)	20	A
Persulphate (Ammonium-, K-, Na- and others)	40	A
Petroleum	60	A
Phenol 1%	20	A
Phenol 90%	45	B
Phenylhydrazine	20	C
Phenylhydrazine chloride	20	B
Phenylhydrazine chloride	60	C
Phosgene, gaseous	20	A
Phosgene, gaseous	60	B
Phosgene, liquid	20	C
Phosphates (ammonium-, K-, Na- and others)	60	A
Phosphoric acid	40	A
Phosphoric acid	60	B
Phosphorus pentoxide	20	A
Propane	20	A
Propanol	60	A
Pyridine	20	A
Rhodanides (ammonium-, K-, Na- and others)	60	A
Salicylic acid	20	A
Silicates (K-)	20	A
Soap solution	40	A
Stearic acid	60	A
Sulphates (ammonium-, K-, Na- and others)	60	A
Sulphites (ammonium-, K-, Na- and others)	60	A
Sulphur dioxide, gaseous, dry and moist 100%	60	A
Sulphuric acid to 40%	20	C
Sulphuric acid to 50%	50	A
Sulphuric acid to 50%	60	A
Sulphuric acid to 80%	40	C
Sulphuric acid to 80%	60	B
Sulphuric acid to 96%	20	A
Sulphuric acid to 96%	60	B
Sulphuric acid, fuming (10% oleum)	20	C
Sulphurous acid	60	A
Tallow	60	A
Tan bark	20	A
Tar, free from aromatic hydrocarbons	20	A
Tartaric acid	60	A
Tetraethyl lead	60	A
Tetrafluoroboric acid	20	A
Tetrahydrofurane	20	C
Thickness	60	A
Toluene	20	A
Transformer oil	60	A
Trichloroethylene	20	C
Turpentine	20	A
Urea	60	C
Vegetable oils	40	A
Vinyl acetate	20	C
Viscose spinning solutions	60	A
Water	40	A
Water	60	B
Wine	40	A
Wine vinegar	50	A
Wood tar	20	C
Xylenes	20	C

Material properties of the hard PVC used
Material description according to DIN 7748 PVC-U-E-D-080-04-28
Tensile strength according to DIN 53 455 min. 40 N/mm²
Elongation at tear according to DIN 53 455 min. 65%
Puncture strength according to DIN 53 481 min. 20 KV/mm
Surface resistance according to DIN 53 482 min. 10 10
Thermoforming resistance according to DIN 53 460/B min. 75 °C
Temperature resistance in the application max. 65 °C
Flammability according to UL 94 Level V-0
Material classification to DIN EN 4102, Class B1 and B2-tested

Building Connections

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