

BSS



**Fire protection
systems
Ukraine**

2019/2020

Building Connections

OBO
BETTERMANN



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Service times
Monday to Friday 09.00 to 18.00

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Planning and mounting aids

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1

First protection aim: Maintenance of the fire sections



The division of buildings into fire sections protects unaffected building sections against the spread of fires for specific periods of time. Insulation maintains the fire sections, thus limiting the spread of fire and smoke. These constructive measures protect people and property, allowing fire brigades to prevent the spread of fires to other parts of the building through extinguishing measures.

Function of fire walls

Fire walls should ensure that a fire cannot pass to neighbouring buildings or building sections. This creates so-called fire sections. The construction design of these fire walls (materials, fire resistance classes, stress values) is regulated by the building regulations and standards.

Electrical cables and pipes may only be run through walls and ceilings at the ends of rooms when there is a guarantee that they do not present an opportunity for fire and smoke to spread. Insulation systems reliably seal the ceiling and wall penetrations required for installations against fire and smoke.

Special requirements

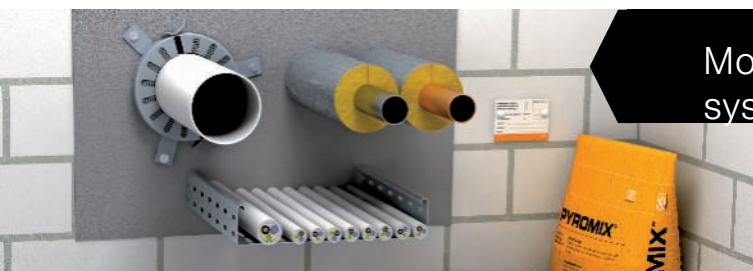
The following requirements apply to cable penetrations with cable insulation:

- The spread of fire and smoke must be prevented
- Room closure must be guaranteed
- On the side of the insulation away from the fire, the surfaces of cables, pipes, cable support systems and the surface of the insulation may not heat up to an impermissible level

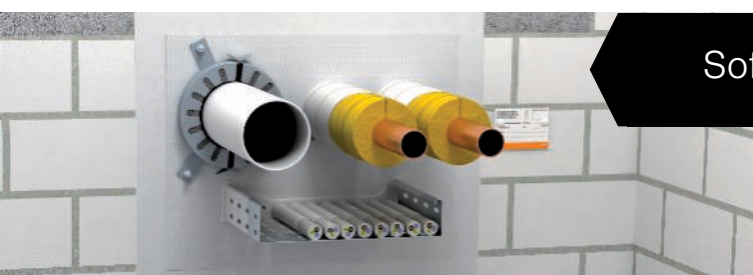
Insulation systems reliably seal the ceiling and wall penetrations required for installations against fire and smoke.



Insulation systems



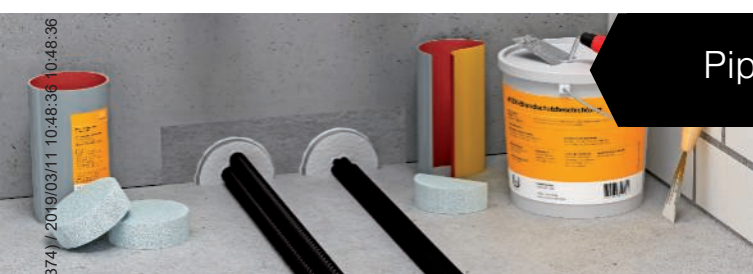
Mortar insulation systems



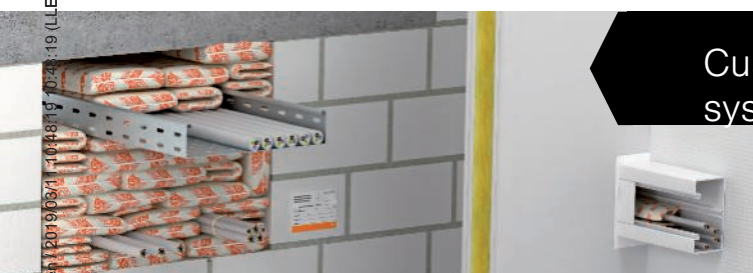
Soft insulation systems



Foam systems



Pipe shell systems



Cushion insulation systems



2

Second protection aim: Protection of escape routes



What is an emergency and escape route?

According to the construction regulations, there must be routes in buildings which not only permit access to the building in a horizontal and vertical direction in normal situations, but which also offer the option of rescue in case of fire. It is therefore obligatory to equip buildings with at least one constructive emergency and escape route. Additional emergency and escape routes may also be necessary, depending on the type of building.

These include:

- Necessary staircases (vertical access)
- Connecting rooms between the necessary stairwells and exits to the outside
- Necessary corridors (horizontal access)

There must be a guarantee that, if there is a fire, these routes can be used to leave the building without any risk. In addition to evacuation, the emergency and escape routes also aid the local fire brigades as a point of attack.

In the area of emergency and escape routes, an installation may not pose an additional fire load. This requirement can be fulfilled using an appropriate type of installation:

- Concealed installation
- Installation in fire protection duct systems
- Installation above suspended fire protection ceilings
- Use of non-combustible materials
- Routing of cables with improved behaviour in case of fire

Approximately 95% of all deaths during fires are caused by smoke poisoning! In case of fire, emergency and escape routes are the central lifeline of the building and must remain usable under all circumstances.



Escape route installations



False ceiling mounting



Fire protection ducts



Cable bandages



3

Third protection aim: Maintaining the function of electrical systems



If there is a fire, emergency and escape routes must remain usable and important technical equipment, such as emergency lighting, fire alarm systems and smoke extraction systems, continue to function. Therefore, it is essential that the power supply for these systems is specially protected. In addition, certain technical systems must support the fire brigades in fighting fires for a sufficiently long period of time.

Where is the maintenance of electrical function required?

Technical equipment that maintains electrical function is required for the following buildings and systems:

- Hospitals
- Hotels and restaurants
- Tower blocks
- Meeting points
- Commercial buildings
- Closed large garages
- Underground railway systems
- Chemicals industry
- Power stations
- Tunnels

This could be because these constructions are regularly frequented by many people. This creates an increased safety risk for gatherings of people. However, with certain systems, property and the environment must also be protected.

E30

30 minutes: Maintenance of electrical function for a safe evacuation and rescue

The first 30 minutes after the start of a fire play an important role. For the affected building to be cleared quickly the maintenance of electrical function must be guaranteed for the following equipment during this time:

- Safety lighting systems
- Lifts with fire control
- Fire alarm systems
- Alarm systems and systems to issue instructions
- Fire extraction systems

E90

90 minutes: Maintenance of electrical function for effective fire-fighting

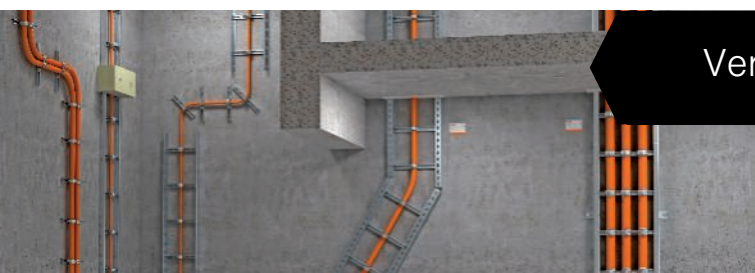
To support fire-fighting operations, it is imperative that certain technical equipment is supplied with sufficient power even up to 90 minutes after a fire breaks out in a building. This equipment includes:

- Water pressure increase systems for fire water supply
- Mechanical smoke extraction systems and smoke protection pressure systems
- Fire brigade lifts
- Bed lifts in hospitals and similar equipment

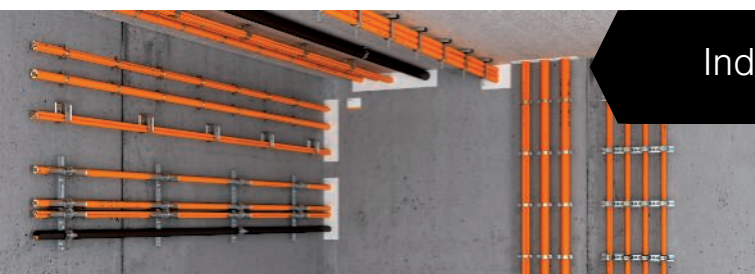
Systems that maintain the electrical function



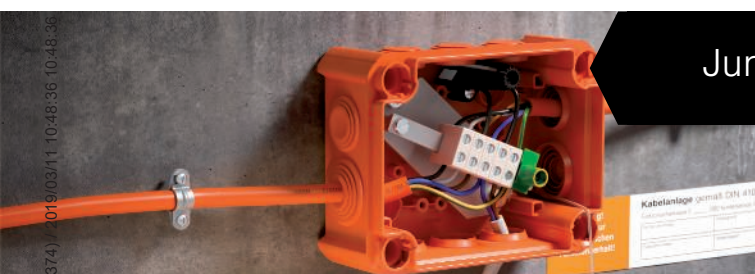
Cable trays and cable ladders



Vertical ladders



Individual routing



Junction boxes



Technical support

Seminars

OBO BSS seminars: First-hand knowledge

With a comprehensive programme of training courses and seminars on the subject of fire protection 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.





Construct BSS Online Tool

Works on any computer with Internet access: The BSS software simplifies the planning of suitable fire protection systems. After the basic data has been entered, the user obtains an overview of the approved insulation systems, as well as of necessary and optional system accessories. Thus, they can create, edit and export a personal shopping list in a targeted manner. All the key information on standards and approvals can be found directly with the systems.

BSS app

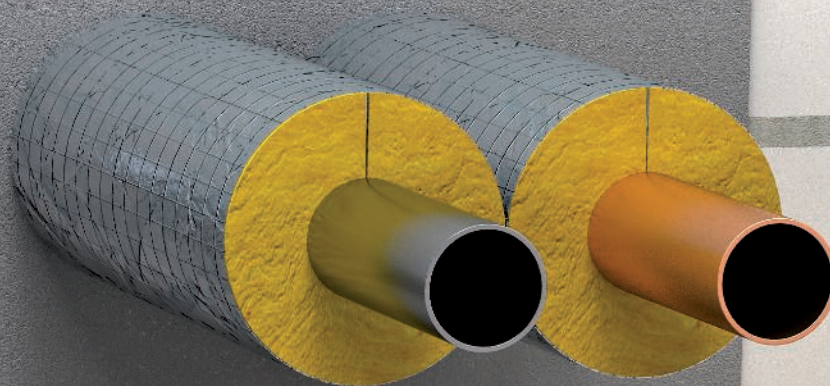
The Construct BSS app makes finding the right product even quicker. In only a short time, the app determines the fire protection systems required for the appropriate project. It offers the full scope of the Construct BSS module, allowing simple planning and material calculations in any location. Practical: The parts list can be sent directly by e-mail. Available for Android and Apple devices for Google Play Store and the iTunes App Store.



Fire protection guide

In the guide, we wish to explain the interconnections of fire protection in technical building equipment. Perhaps you will find some new aspects which can help you in the planning or implementation of fire protection systems.





Kabelabschottung
Kombiabschottung
Rohrabschottung

Exhaust / U.V. Nr.

Grundverankerung ☐ Minuten ☐

Zulassung Nr.

System:

Erreicht:

Datum:

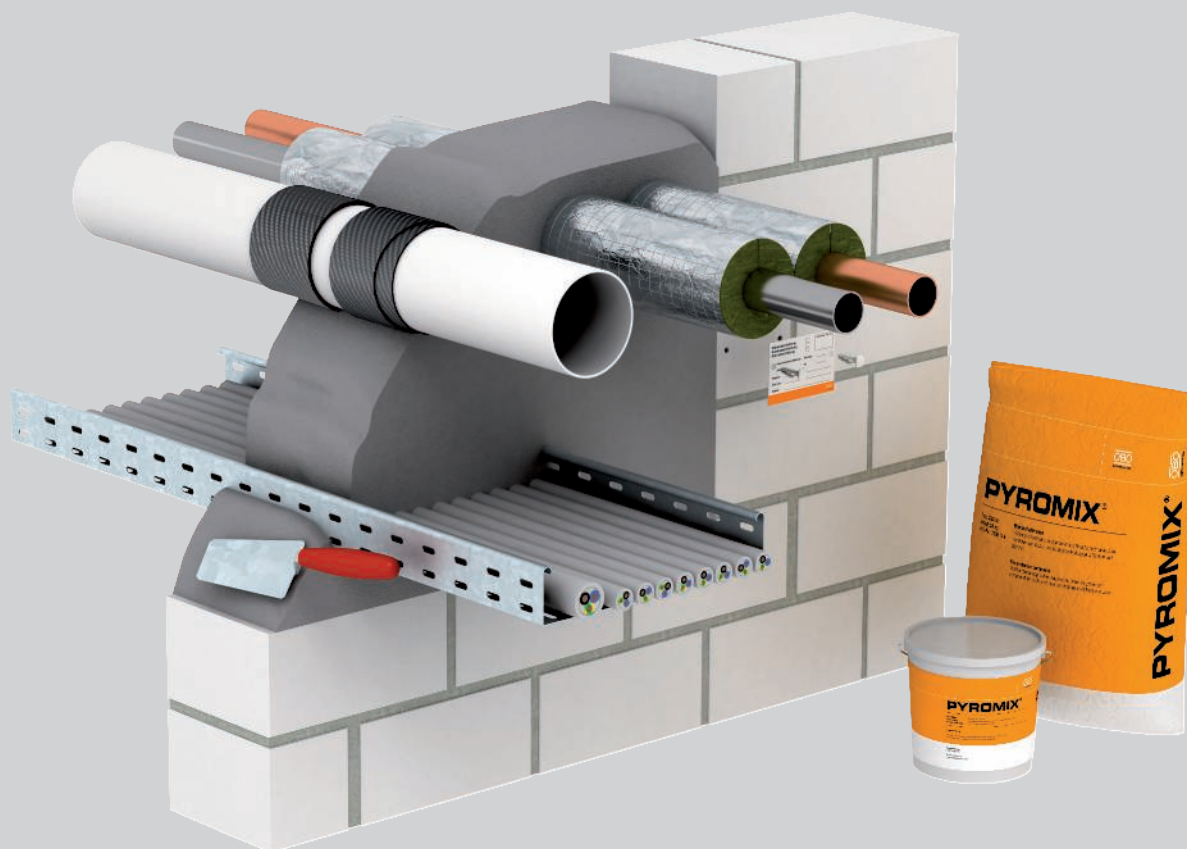


Mortar insulation PYROMIX®

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	Products	18



Mortar insulation PYROMIX® System description



The PYROMIX® system from OBO is used to create cable and combination insulation made of a mineral fibre-free special mortar. Depending on the amount of water added, the finished compound can be applied to openings by hand, with pumps or with presses. The high level of substrate adhesion makes lining unnec-

essary for small insulation areas. The porous consistency of the mortar means that retroinstallation is easy. If there is a fire, the fire protection mortar reliably prevents the spread of fire and smoke.

Mortar insulation PYROMIX®

Installation principle



Stir the mortar with water until the desired consistency is reached.



Apply mortar to the opening, use lining as necessary.



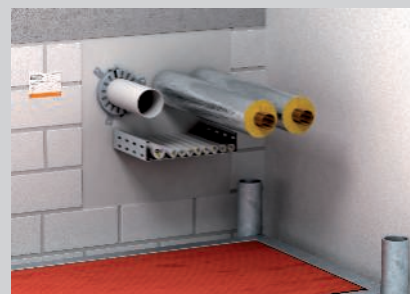
Use approved section insulation for metal pipes.



Section insulation should also be applied to steel electrical installation pipes.



Mount pipe sleeves for combustible pipes on both sides of the wall.



Apply labelling to combination insulation for various structures.

Classification to DIN

S30

S60

S90

Classification to EN

EI15

EI30

EI45

EI60

EI90

EI120



Erectors of combination insulation require training.

Always indicate the item number when ordering.

Mortar insulation PYROMIX®
Registration data

Combination insulation in walls/ceilings

Fire resistance class	EI 180, EI 240
Proof of application	European Technical Assessment of DIBt, Berlin
Approval number	ETA-17/0472
Testing standard	EN 1366-3

Installation locations

Insulation in walls and ceilings

Component		Rigid walls	Flexible walls	Rigid floors
				
Min. component strength		15 cm (EI 60 / EI 90 / EI 120)	–	15 cm (S30 / S60 / S90)
Min. insulation thickness		15 cm (EI 60 / EI 90 / EI 120) 24 cm (EI 120)	–	15 cm (EI 60 / EI 90 / EI 120) 24 cm (EI 120)
Opening size		$\longleftrightarrow \leq 120 \text{ cm (for EI 120)}$ $\updownarrow \leq 200 \text{ cm}$ $\longleftrightarrow 120 \text{ cm (for EI 120)}$ $\updownarrow \leq 60 \text{ cm x } \leq 60 \text{ cm}$	–	$\longleftrightarrow \leq 100 \text{ cm}$ $\updownarrow \text{ Unlimited}$ $\longleftrightarrow 120 \text{ cm (for EI 120)}$ $\updownarrow \leq 60 \text{ cm x } \leq 60 \text{ cm}$

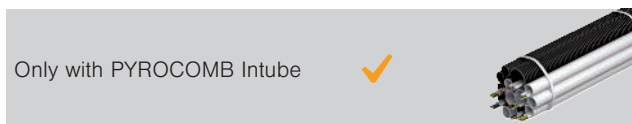


Mortar insulation PYROMIX® Installations

Cable



Pipe bundle of electrical installation pipes



Cable bundle



Electrical installation pipe made of steel



Individual lines for control purposes



Cable support systems



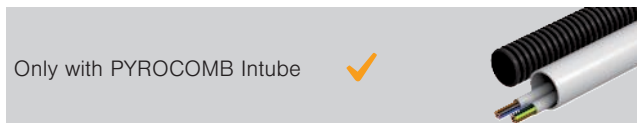
Electrical installation pipe made of plastic, rigid



Metal pipes with path insulation



Electrical installation pipe made of plastic, flexible

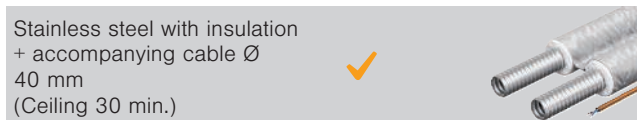


Plastic pipes

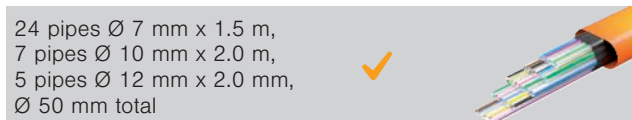


Special installations

Double solar pipes



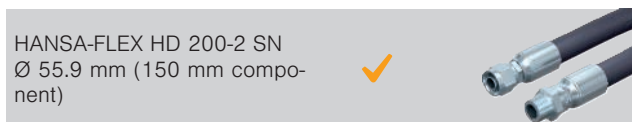
Speed pipe



Klimasplit



Hydraulic hoses

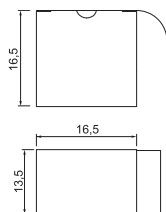


Details on the version can be found in the proof of suitability or mounting instructions.
All the stated dimensions are maximum values.



Mortar insulation PYROMIX®

Coil for insulation

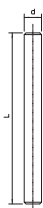


Type

FSB-WB BS

Pack. pcs 1
Weight kg/100 pcs. 215.000
Item No. 7203165

Threaded rod



Type

TR M6 1M G

TR M8 1M G

Thread	Dimension d mm	Dimension L mm
M6	6	1000
M8	8	1000

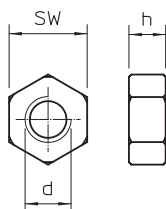
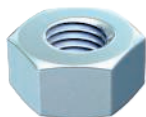
Pack. pcs 10
Weight kg/100 pcs. 18.300
Item No. 3141047

St Steel

G Electrogalvanised

Threaded rod to DIN 976.

Hexagonal nut DIN 934



Type

HN M6 G

HN M8 G

Thread	SW mm	Dimension h mm	Dimension d mm
M6	10	5.2	6
M8	13	6.8	8

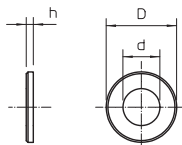
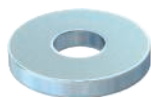
Pack. pcs 100
Weight kg/100 pcs. 0.225
Item No. 3400069

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer ISO 7093



Type

WS M6 D28 G

WS M8 D28 G

Thread	Dimension d mm	Dimension D mm	Dimension h mm
M6	6.5	28	2.5
M8	8.5	28	2.5

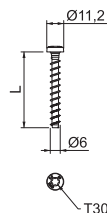
Pack. pcs 100
Weight kg/100 pcs. 1.150
Item No. 3402207

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

Fire protection screw tie



Type

MMS-plus 6X50

MMS-plus 6X35

Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system
6 x 50	50	5	11.2	Torx
6 x 50	50	5	11.2	Torx

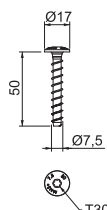
Pack. pcs 100
Weight kg/100 pcs. 1.000
Item No. 3498108

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



Type

MMS-plus 7.5X50

Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system
7,5 x 50	50	6	17	Torx

Pack. pcs 100
Weight kg/100 pcs. 1.500
Item No. 3498261

St Steel

G Electrogalvanised

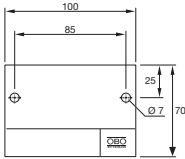
Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Identification plate

Type		Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S EN		English	1	2.400	7205429
KS-S FR		French	1	2.400	7205430

PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.





Soft insulation, PYROPLATE® Fibre

	System description	22
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Soft insulation PYROPLATE® Fibre

System description



The PYROPLATE® Fibre system from OBO is used to create cable and combination insulation. The core of the system is the mineral fibre plate coated with a moisture-resistant ablation coating. When there is a fire, the fire protection coating creates an insulating carbon foam and, in combination with the mineral fibre plate, prevents the spread of fire and smoke. According to the European Technical Assessment, in ad-

dition to the cables, pipes made of steel, copper or various plastics may also be run through the same insulation. For pipelines, additional fire protection measures, such as section insulation and pipe sleeves, are required. The mortar or soft insulation made of PYROPLATE® Fibre is thus combination insulation which is appropriate for diverse structures.



Soft insulation PYROPLATE® Fibre Installation principle



The installation is possible in light-duty partition walls or in solid walls.



Moisten the component layer and apply the coating to the cut edges for adhesion.



The plates can be inserted carefully with a hammer and board.



Use approved section insulation for metal pipes.



Apply the final coating to the surface and the installations.



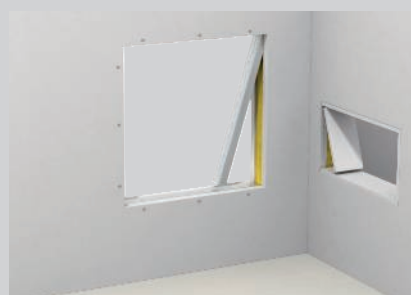
Secure soft insulation in ceilings against footfall.



Cut the plates for mounting.



Finished installation in a light-duty partition wall.



Classification to DIN

S30

S60

S90

Classification to EN

EI15

EI30

EI45

EI60

EI90

EI120

EI180

EI240



Erectors of combination insulation require training.

Always indicate the item number when ordering.

Soft insulation PYROPLATE® Fibre

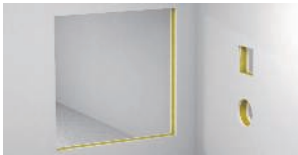
Registration data

Combination insulation in walls and ceilings

Fire resistance class	EI 15, EI 30, EI 45, EI 60, EI 90, EI 120, EI 180, EI 240
Proof of application	European Technical Assessment of DIBt, Berlin
Approval number	ETA-17/0364
Testing standard	DIN EN 1366 Part 3

Installation locations

Insulation in walls and ceilings

Component		Rigid walls	Flexible walls	Rigid floors
				
Min. component strength		10 cm (EI 15 / EI 30 / EI 60 / EI 90) 10 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120) 20 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120 / EI 180 / EI 240)	10 cm (EI 15 / EI 30 / EI 60 / EI 90 / EI 120)	12.5 cm (EI 15 / EI 30 / EI 60 / EI 90) 15 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120) 20 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120 / EI 180 / EI 240)
Min. insulation thickness		6 cm (EI 15 / EI 30 / EI 60 / EI 90) 12 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120) 24 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120/ EI 180 / EI 240)	6 cm (EI 15 / EI 30 / EI 60 / EI 90) 12 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120)	6 cm (EI 15 / EI 30 / EI 60 / EI 90) 12 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120) 24 cm (EI 15 / EI 30 / EI 60 / EI 90/ EI 120/ EI 180 / EI 240)
Opening size for 6 cm insulation thickness		↔ ≤ 117.5 cm ↕ ≤ 120 cm	↔ ≤ 117.5 cm ↕ ≤ 120 cm	↔ ≤ 120 cm x ≤ 240 cm ↕ ≤ 80 cm x ≤ unlimited
Opening size for 12 cm insulation thickness		↔ ≤ 140 cm ↕ ≤ 200 cm	↔ ≤ 140 cm ↕ ≤ 200 cm	↔ ≤ 140 cm ↕ ≤ 200 cm
Opening size for 24 cm insulation thickness		↔ ≤ 60 cm ↕ ≤ 60 cm	–	↔ ≤ 60 cm ↕ ≤ Unlimited



Soft insulation PYROPLATE® Fibre Installations

Cable

Cable Ø 80 mm



Pipe bundle of electrical installation pipes

Ø 100 mm, IR Ø 32 mm, cable Ø 21 mm

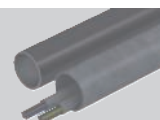


Cable bundle

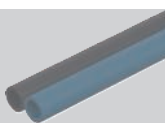
Ø 100 mm,
cable Ø 21 mm



Electrical installation pipe made of steel

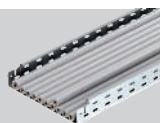


Individual lines for control purposes



Cable support systems

Steel profiles



Electrical installation pipe made of plastic, rigid

Ø 16 mm



Metal pipes with path insulation

Steel, stainless steel and
cast steel Ø 332.9 mm,
copper Ø 108.0 mm



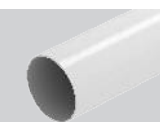
Electrical installation pipe made of plastic, flexible

Ø 32 mm,
cable Ø 21 mm



Plastic pipes

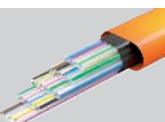
Ø 160 mm



Special installations

Speed pipe

24 pipes Ø 7 mm x 1.5 m,
7 pipes Ø 10 mm x 2.0 m,
5 pipes Ø 12 mm x 2.0 mm,
Ø 50 mm total



Double solar pipes

"NanoSUN" DN 16 to DN 40



Klimasplit

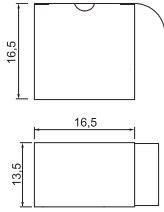
"Tubolit DuoSplit" & "Tubolit
Split" or comparable
6.0 mm–22.0 mm



Details on the version can be found in the proof of suitability or mounting instructions.
All the stated dimensions are maximum values.

Soft insulation, PYROPLATE® Fibre

Coil for insulation



Type
FSB-WB BS

Pack. pcs	Weight kg/100 pcs.	Item No.
1	215.000	7203165

Threaded rod



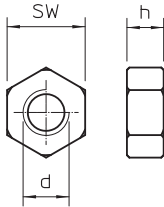
Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M6 1M G	M6	6	1000	10	18.300	3141047
TR M8 1M G	M8	8	1000	10	30.000	3141128

St Steel

G Electrogalvanised

Threaded rod to DIN 976.

Hexagonal nut DIN 934



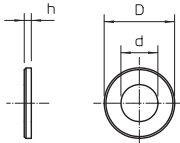
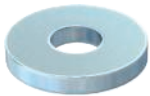
Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M6 G	M6	10	5.2	6	100	0.225	3400069
HN M8 G	M8	13	6.8	8	100	0.474	3400085

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer ISO 7093



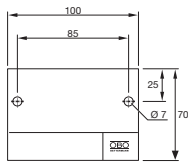
Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M6 D28 G	M6	6.5	28	2.5	100	1.150	3402207
WS M8 D28 G	M8	8.5	28	2.5	100	1.100	3402215

St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

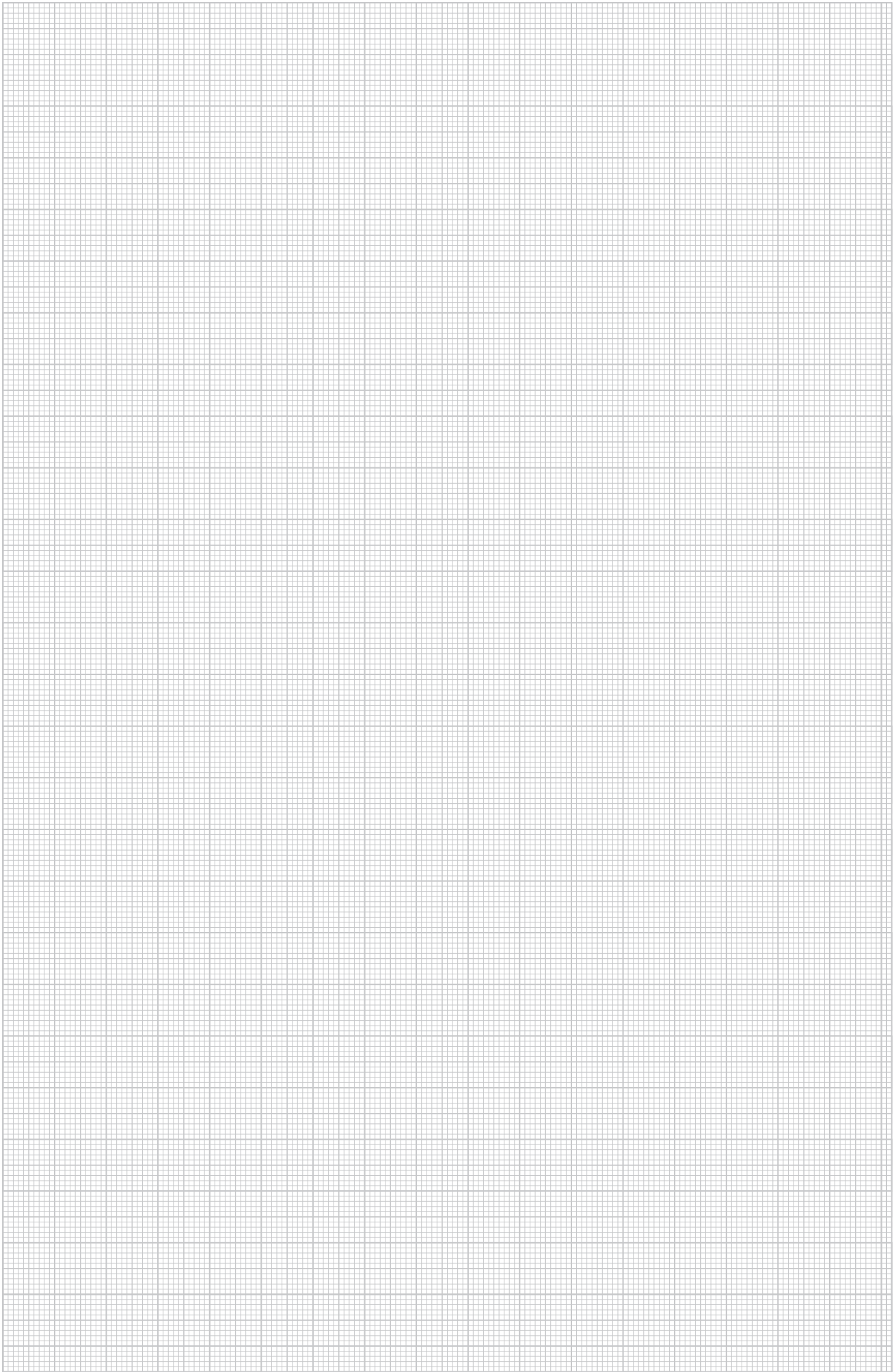
Identification plate

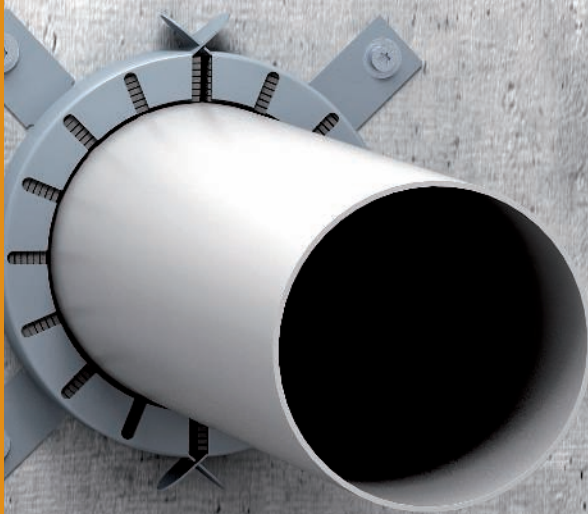


Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430

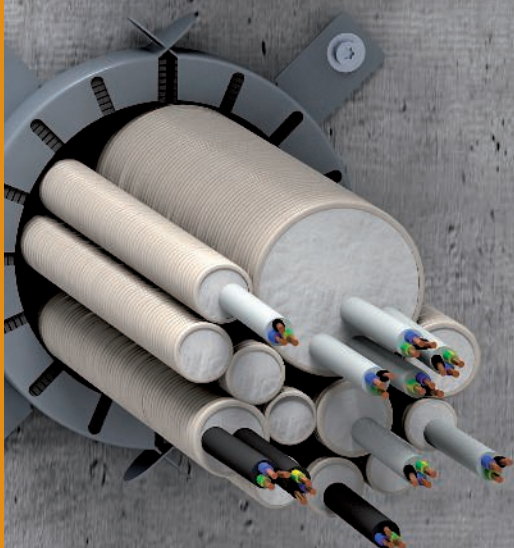
PS Polystyrene

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.

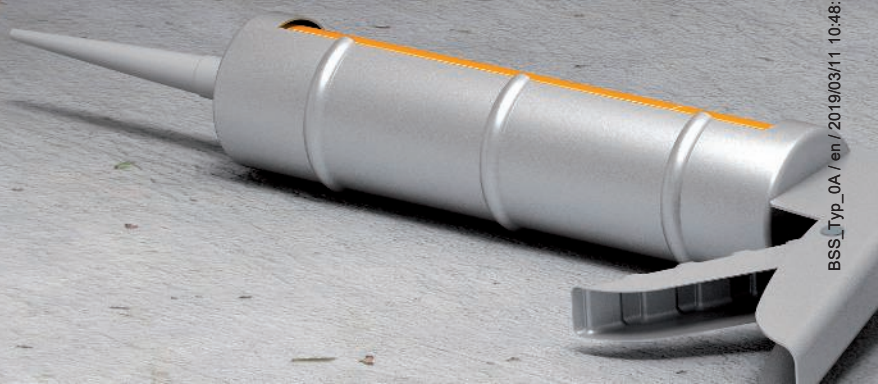




Kabelabschottung	☐	Einbauserie / LSC-Nr.
Kombiabschottung	☐	
Rohrabschottung	☐	
Isolationsklasse	Minuten	
Zufassung	Nr.	
System:		
Erichter:		
Datum:		



Kabelabschottung	☐	Einbauserie / LSC-Nr.
Kombiabschottung	☐	
Rohrabschottung	☐	
Isolationsklasse	Minuten	
Zufassung	Nr.	
System:		
Erichter:		
Datum:		



Pipe seal PYROCOMB®Tubes

	System description, PYROCOMB® Tubes cable insulation	30
	System description, PYROCOMB® pipe insulation	34
	Products	38





PYROCOMB® Tubes pipe sleeve

System description



The PYROCOMB® Tubes system is used to create cable insulation with pipe sleeves. The system comprises multiple sizes of the pipe sleeve, type TCX. This allows simple insulation of bundles of plastic electrical installation pipes, rigid or flexible, up to a size of M63. It is irrelevant whether the pipes are filled with cables

or are empty. In the event of fire, the fire protection material inserted within the seal foams up after a few minutes under high pressure, closing the softened bundles at a high pressure. This safely prevents the spread of fire and smoke, should a fire occur.

PYROCOMB® Tubes pipe sleeve

Installation principle



Two-sided arrangement of the pipe sleeves for wall mounting.



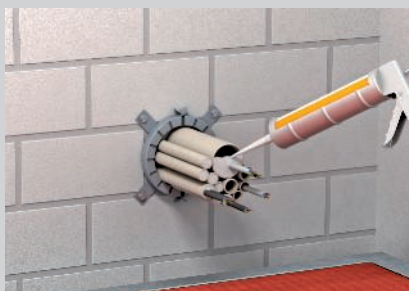
Mounting on the underside of the ceiling with metal anchors.



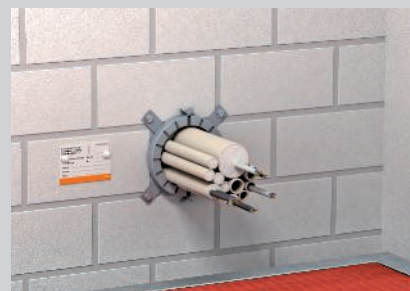
Closing of the ring gap with the insulation layer creator DSX.



Combination of the sleeve halves and fastening on the wall.



Closing of the pipe ends with the insulation layer creator DSX.



Labelled insulation of installation pipe bundles.

Classification to DIN

S30

S60

S90

Classification to EN

EI15

EI30

EI45

EI60

EI90

EI120



Erectors of combination insulation require training.

Always indicate the item number when ordering.



PYROCOMB® Tubes pipe sleeve

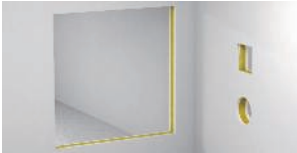
Registration data

Combination insulation in walls and ceilings

Fire resistance class	EI 15, EI 30, EI 45, EI 60, EI 90, EI 120
Proof of application	General construction approval of OIB, Vienna
Approval number	ETA-12/0207
Testing standard	EN 1366-3

Installation locations

Insulation in walls and ceilings

Component		Rigid walls	Flexible walls	Rigid floors
				
Min. component strength		10 cm (EI 30 / EI 60 / EI 90 / EI 120)	10 cm (EI 30 / EI 60 / EI 90 / EI 120)	15 cm (EI 30 / EI 60 / EI 90 / EI 120)
Min. insulation thickness		10 cm (EI 60 / EI 90 / EI 120)	10 cm (EI 60 / EI 90 / EI 120)	15 cm (EI 60 / EI 90 / EI 120)
Opening size		Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm	Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm	Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm

PYROCOMB® Tubes pipe sleeve Installations

Cable



Pipe bundle of electrical installation pipes



Cable bundle



Electrical installation pipe made of steel



Individual lines for control purposes



Cable support systems



Electrical installation pipe made of plastic, rigid



Metal pipes with path insulation



Electrical installation pipe made of plastic, flexible



Plastic pipes



Details on the version can be found in the proof of suitability or mounting instructions.
All the stated dimensions are maximum values.





PYROCOMB® pipe sleeve

System description



The PYROCOMB® system can be used as independent pipe sealing for combustible pipes (e.g. sanitary wastewater pipes). It is primarily made up of the pipe sleeves, type TCX. In the event of fire, the fire protection material inserted within the seal foams up after a few minutes under high pressure, closing the soft plastic pipes. This safely prevents the spread of fire

and smoke, should a fire occur. With wall mounting, the pipe sleeves are mounted on both sides of the wall with metal anchors. Ceiling penetrations only have a tube seal from the underside. In light-duty partitions, the pipe sleeves are fastened on passed-through threaded rods and connected together.

PYROCOMB® pipe sleeve

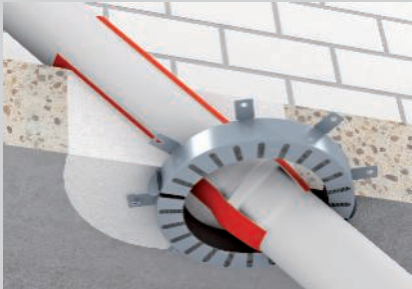
Installation principle



Two-sided arrangement of the pipe sleeves for wall mounting.



Mounting on the underside of the ceiling with metal anchors.



Sloping pipe penetration up to an angle of 39°.



Pipe sleeves in the area of the penetration.



Eccentric arrangement with max. 3 levels of larger pipe sleeves.



Pipe post systems with 2 accompanying cables.

Classification to DIN

- S30
- S60
- S90

Classification to EN

- EI15
- EI30
- EI45
- EI60
- EI90
- EI120
- EI180
- EI240



Erectors of combination insulation require training.

Always indicate the item number when ordering.



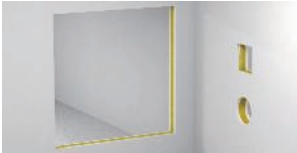
PYROCOMB® pipe sleeve Registration data

Pipe insulation in underfloor ducts

Fire resistance class	EI 15, EI 30, EI 45, EI 60, EI 90, EI 120, EI 180, EI 240
Proof of application	General construction approval of OIB, Vienna
Approval number	ETA-12/0182
Testing standard	EN 1366-3

Installation locations

Pipe insulation in walls and ceilings

Component		Rigid walls	Flexible walls	Rigid floors
				
Min. component strength		10 cm (EI 30 / EI 60 / EI 90 / EI 120 / EI 240)	10 cm (EI 30 / EI 60 / EI 90 / EI 120)	15 cm (EI 30 / EI 60 / EI 90 / EI 120) 30 cm (EI 180 / EI 240)
Min. insulation thickness		10 cm (EI 30 / EI 60 / EI 90 / EI 120 / EI 240)	10 cm (EI 60 / EI 90 / EI 120)	15 cm (EI 30 / EI 60 / EI 90 / EI 120) 30 cm (EI 180 / EI 240)
Opening size		Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm, Ø 140 mm, Ø 160 mm, Ø 180 mm, Ø 200 mm, Ø 225 mm, Ø 250 mm, Ø 280 mm, Ø 300 mm, Ø 315 mm, Ø 355 mm, Ø 400 mm	Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm, Ø 140 mm, Ø 160 mm, Ø 180 mm, Ø 200 mm, Ø 225 mm, Ø 250 mm, Ø 280 mm, Ø 300 mm, Ø 315 mm, Ø 355 mm, Ø 400 mm	Ø 32 mm, Ø 40 mm, Ø 50 mm, Ø 63 mm, Ø 75 mm, Ø 90 mm, Ø 110 mm, Ø 125 mm, Ø 140 mm, Ø 160 mm, Ø 180 mm, Ø 200 mm, Ø 225 mm, Ø 250 mm, Ø 280 mm, Ø 300 mm, Ø 315 mm, Ø 355 mm, Ø 400 mm

PYROCOMB® pipe sleeve

Installations

Cable



Pipe bundle of electrical installation pipes



Cable bundle



Electrical installation pipe made of steel



Individual lines for control purposes



Cable support systems



Electrical installation pipe made of plastic, rigid



Metal pipes with path insulation



Electrical installation pipe made of plastic, flexible



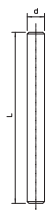
Plastic pipes



Details on the version can be found in the proof of suitability or mounting instructions.
All the stated dimensions are maximum values.



Threaded rod



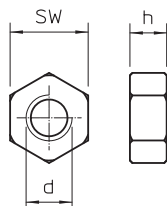
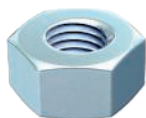
Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M6 1M G	M6	6	1000	10	18.300	3141047
TR M8 1M G	M8	8	1000	10	30.000	3141128

Sl Steel

G Electrogalvanised

Threaded rod to DIN 976.

Hexagonal nut DIN 934



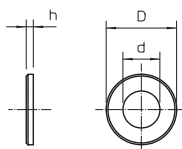
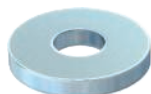
Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M6 G	M6	10	5.2	6	100	0.225	3400069
HN M8 G	M8	13	6.8	8	100	0.474	3400085

Sl Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Washer ISO 7093



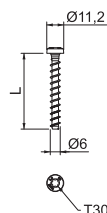
Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M6 D28 G	M6	6.5	28	2.5	100	1.150	3402207
WS M8 D28 G	M8	8.5	28	2.5	100	1.100	3402215

Sl Steel

G Electrogalvanised

Washer of large outer diameter for universal use.

Fire protection screw tie



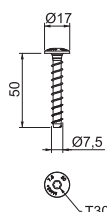
Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 6X50	6 x 50	50	5	11.2	Torx	100	1.000	3498108
MMS-plus 6X35	6 x 50	50	5	11.2	Torx	100	0.900	3498103

Sl Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	50	6	17	Torx	100	1.500	3498261

Sl Steel

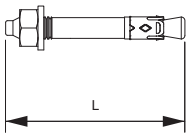
G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Nail anchor N with thread

Type	Thread	Bore hole	Bore hole Ø	Clamping range	Dimension L	Pack. pcs	Weight kg/100 pcs.	Item No.
		mm	mm	mm	mm			
N 6-5-10/49	M6	6	40	5 - 10	49	100	1.160	3498396
St Steel								
G Electrogalvanised								

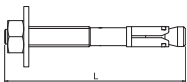
The nail anchor N can be used for multiple fastenings of non-load-bearing systems and in cracked and non-cracked concrete, thereby combining the benefits of a bolt tie with even easier mounting. The nail tie only needs to be hammered into the drill hole. It is not necessary to apply torque subsequently. When the load occurs, the nail tie spreads itself and bolts itself in the drill hole.



Bolt tie BZ-U

Type	Thread	Dimension L	Pack. pcs	Weight kg/100 pcs.	Item No.
		mm			
BZ-U 8-10-21/75	M8	75	50	3.460	3498320
St Steel					
G Electrogalvanised					

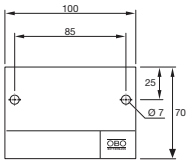
Bolt tie BZ for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

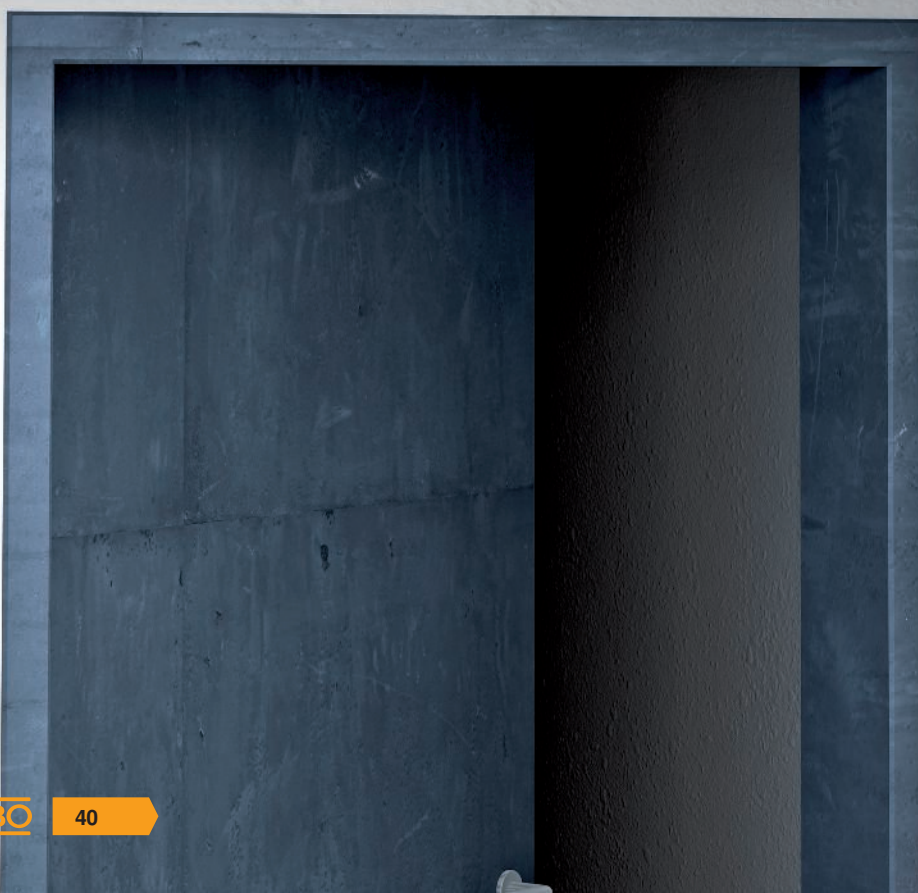
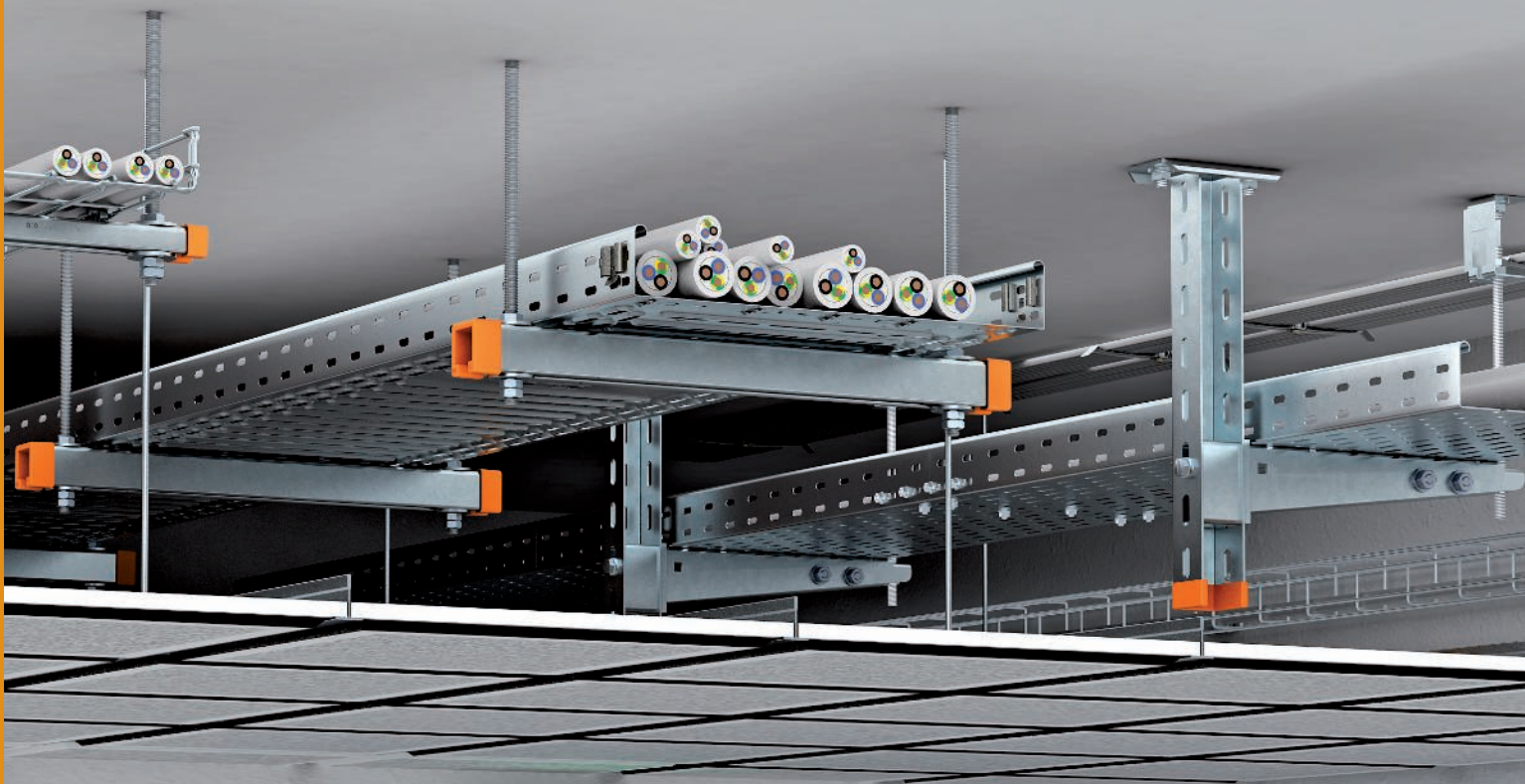


Identification plate

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-S EN	English	1	2.400	7205429
KS-S FR	French	1	2.400	7205430
PS Polystyrene				

Universal identification plate to be written on with waterproof and light-resistant felt-tip pen for all types of OBO insulation. For approved identification, including two push-fit anchors.







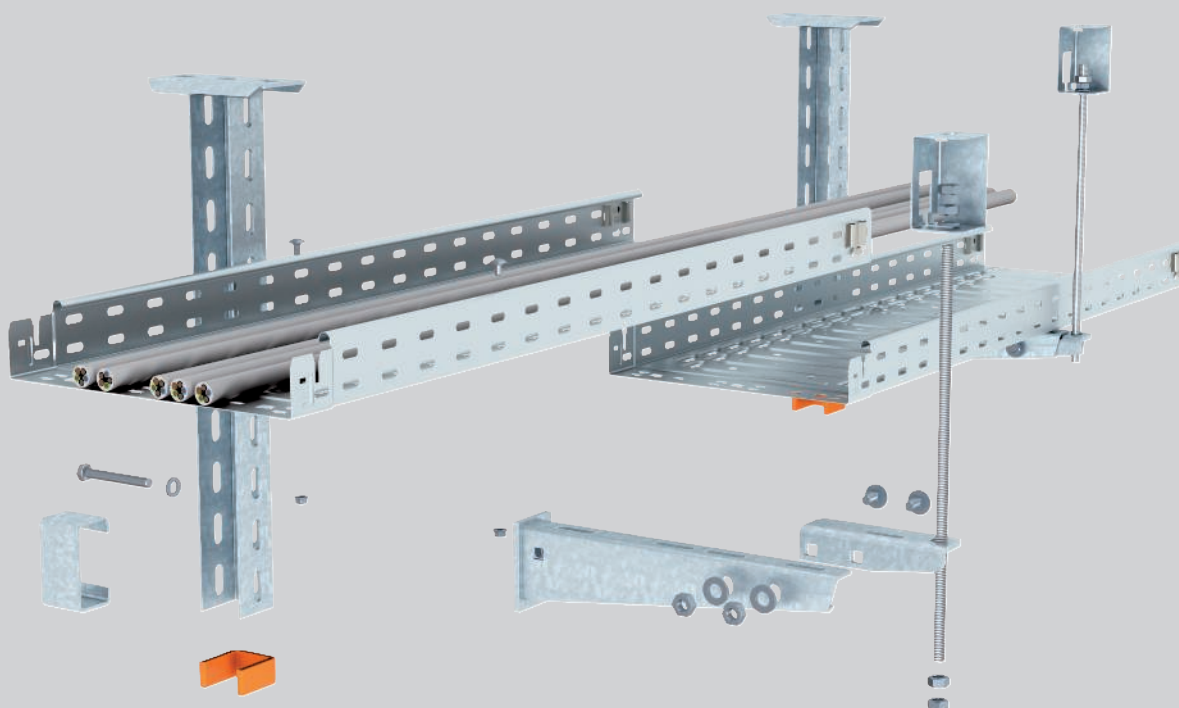
Escape route installations for hollow ceilings

	System description, RKS-Magic® cable tray	42
	System description, MKS-Magic® cable tray	46
	System description, SKS-Magic® cable tray	50
	System description, mesh cable tray GR-Magic®	54
	Products cable trays, mesh cable trays and mounting components	58
	System description, Grip M grouped support	65
	Products	68
	System description, metal pressure clip	69



RKS-Magic® cable tray

System description

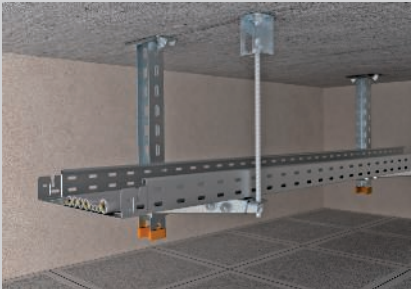


The tested RKS-Magic® cable tray system is suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the system has a proven mechanical stability of 30 minutes. The RKS-Magic® cable tray can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending if there is a fire. A further option for ceiling mounting is the support of the cable tray on profile rails, each mounted under the ceiling

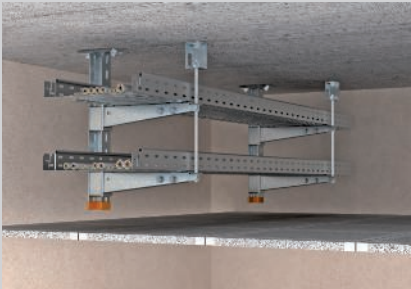
with two threaded rods. As the cable tray deforms in the event of fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing for the various versions of the RKS-Magic® cable trays. If the cable loads and tray widths listed in the proof of testing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented.

RKS-Magic® cable tray

Installation principle



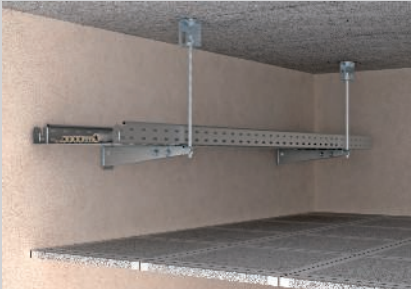
Single-layer ceiling suspension.



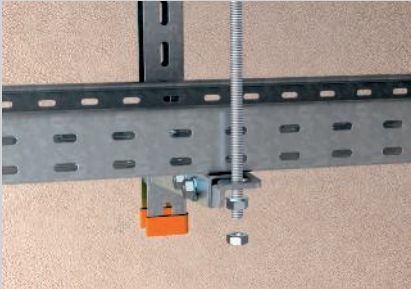
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



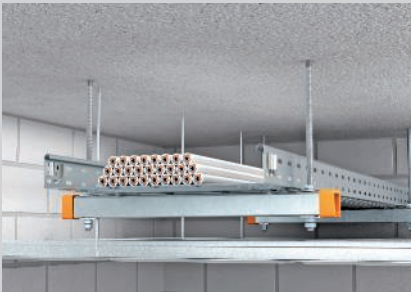
Wall mounting, one and two-layer possible.



Mounting of the threaded rod lock through the connection bracket on the tip of the bracket.



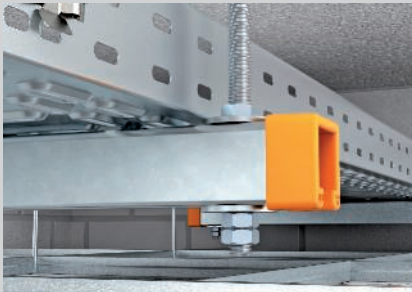
Complete screwless joint connection.



Single-layer ceiling mounting above suspended fire protection ceiling.



Two-layer ceiling mounting above suspended fire protection ceiling.



Clamp fastening for high load capacities.

Tested mounting options



CAUTION: No maintenance of electrical functionality according to DIN 4102 Part 12!

Always indicate the item number when ordering.

RKS-Magic® cable tray

Proof

Fire-proof fastening above fire protection ceilings

Fire load	30 minutes
Proof of testing	OBO Bettermann
Document no. - Mounting with suspended support / bracket	05/170503-02
Document no. - Mounting with mounting rails	05/170503-01
Testing principles	In accordance with DIN 4102

Support spacing for wall / ceiling mounting with suspended support / bracket

Cable tray width	Cable load per cable tray					
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m	max. 1.50 m	max. 1.50 m	max. 1.20 m

Support spacing for ceiling mounting with mounting rails

Cable tray width	Cable load per cable tray		
100 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m

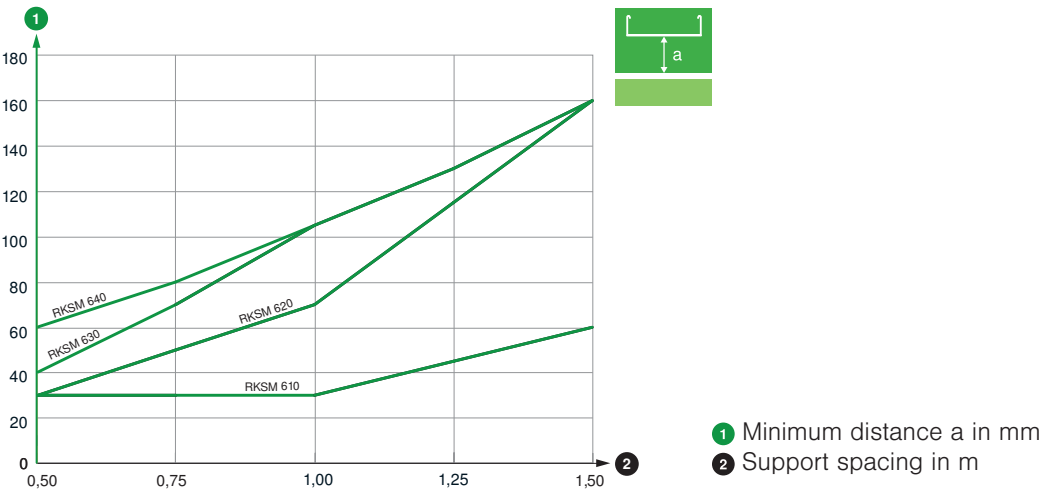
Required minimum spacing "a" under fire load at different support spacings

Cable tray width	Cable load per cable tray	max. 0.50 m	max. 0.75 m	max. 1.00 m	max. 1.25 m	max. 1.50 m
100 mm	max. 15 kg/m	30 mm	30 mm	30 mm	45 mm	60 mm
200 mm	max. 30 kg/m	30 mm	50 mm	70 mm	115 mm	160 mm
300 mm	max. 45 kg/m	40 mm	70 mm	105 mm	130 mm	160 mm
400 mm	max. 60 kg/m	60 mm	80 mm	105 mm	130 mm	160 mm

The stated values for the wall / ceiling mounting with suspended support / bracket and for ceiling mounting with mounting rails

The minimum spacing "a" relates to the distance of the under side of the cable tray to the top side of the fire protection ceiling.

Spacing diagram, RKSM cable tray



RKS-Magic® cable tray

Components used: RKSM cable tray

Wall/ceiling mounting with suspended support/bracket

Component	Type					
Cable tray	RKSM 6... FS	1	2	2	1	2
Support	US 5 K ... FT	1	1	1	0	0
Protective cap	US 5 KS OR	1	1	1	0	0
Wall and support brackets	AW30F... FT	1	2	2	1	2
Spacer	DSK 45	1	2	1	0	0
Hexagonal bolt	SKS 10x 90 F	1	2	1	0	0
Truss-head bolt	FRSB 6x 15 F	2	4	4	2	4
Threaded rod	2078 M12 G	1	2	2	1	2
Hexagonal nut	DIN 934 M12 G	4	5	8	4	5
Washer	966 M12 G	2	3	4	2	3
Connection sleeve	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1

Choose the fastening anchors according to the substrate

Ceiling mounting with mounting rails

Component	Type		
Cable tray	RKSM 6... FS	1	2
Mounting rail	See table	1	2
Protective cap	MS41... EK	2	4
Threaded rod	2078 M12 G	2	4
Hexagonal nut	DIN 934 M12 G	6	10
Large washer	DIN440 14 F	2	4
Washer	966 M12 G	2	4
Connection sleeve	12005 M12 G	0	2
Truss-head bolt	FRSB 6x 15 F	2	4
Large washer	DIN440 7 F	2	4

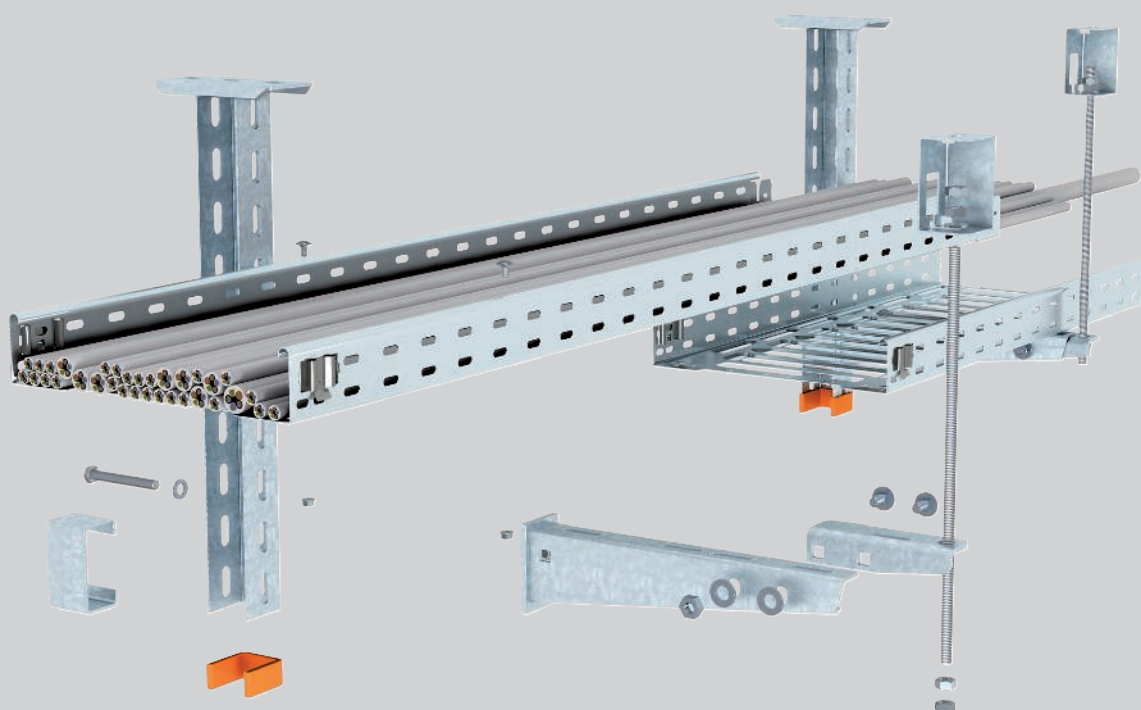
Choose the fastening anchors according to the substrate

Mounting rails to be used according to support spacing

Cable tray type	Cable tray width	max. 0.50 m	max. 0.75 m	max. 1.00 m	max. 1.25 m	max. 1.50 m
RKSM 610 FS	100 mm	MS4121P	MS4121P	MS4121P	MS4121P	MSL4141P
RKSM 620 FS	200 mm	MS4121P	MS4121P	MS4121P	MSL4141P	MSL4141P
RKSM 630 FS	300 mm	MS4121P	MSL4141P	MSL4141P	MSL4141P	MS4141P
RKSM 640 FS	400 mm	MSL4141P	MSL4141P	MSL4141P	MS4141P	MS4141P

MKS-Magic® cable tray

System description



The tested MKS-Magic® cable tray system is suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the system has a proven mechanical stability of 30 minutes. The MKS-Magic® cable trays can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending in a fire. As the cable trays deform in a fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing of the MKS-Magic® cable trays. If the cable loads and tray widths listed in

the proof of testing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented. A further option for ceiling mounting is the support of the cable trays on profile rails, each mounted under the ceiling with two threaded rods. With this mounting variant, sufficient distances to the false ceiling must be maintained. A two-layer arrangement of the cable trays is possible, providing that the approved tensile stress in the threaded rods is also maintained in the event of fire.

MKS-Magic® cable tray

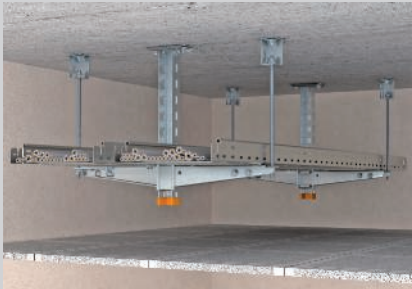
Installation principle



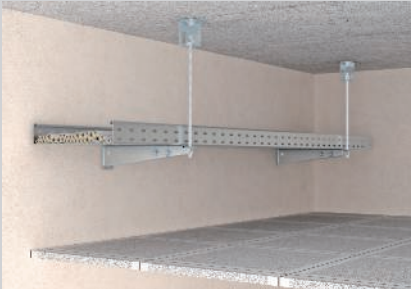
Single-layer ceiling suspension.



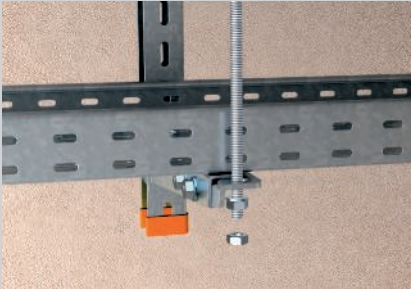
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



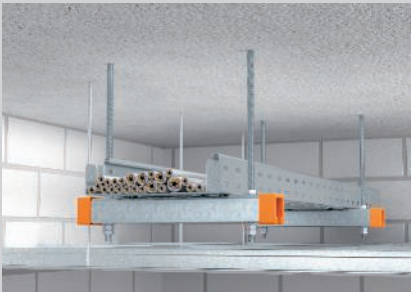
Wall mounting, single and double-layer possible.



Mounting of the threaded rod lock through the connection bracket on the tip of the bracket.



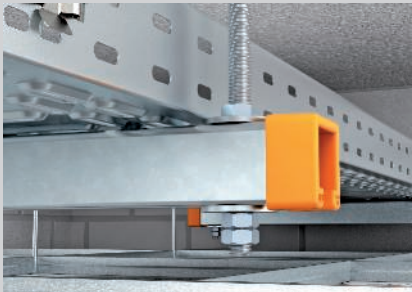
Screwless joint connection, only the base lugs need to be bent.



Single-layer ceiling mounting above suspended fire protection ceiling.



Two-layer ceiling mounting above suspended fire protection ceiling.



Clamp fastening for high load capacities.

Tested mounting options



CAUTION: No maintenance of electrical functionality according to DIN 4102 Part 12!

Always indicate the item number when ordering.

MKS-Magic® cable tray

Proof

Fire-proof fastening above fire protection ceilings

Fire load	30 minutes
Proof of testing	OBO Bettermann
Document no. - Mounting with suspended support / bracket	05/130301-04
Document no. - Mounting with mounting rails	05/130301-03
Testing principles	In accordance with DIN 4102

Proofs of testing are also available for the MKS cable trays and can be requested accordingly.

Support spacing for wall / ceiling mounting with suspended support / bracket

Cable tray width	Cable load per cable tray					
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m	max. 1.50 m	max. 1.50 m	max. 1.20 m

Support spacing for ceiling mounting with mounting rails

Cable tray width	Cable load per cable tray		
100 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m

Required minimum spacing "a" under fire load at support spacing max. 1.50 m

Cable tray width	Cable load per cable tray	max. 1.50 m
100 mm	max. 15 kg/m	55 mm
200 mm	max. 30 kg/m	105 mm
300 mm	max. 45 kg/m	180 mm
400 mm	max. 60 kg/m	180 mm



The stated values for the wall / ceiling mounting with suspended support / bracket and for ceiling mounting with mounting rails

The minimum spacing "a" relates to the distance of the under side of the cable tray to the top side of the fire protection ceiling.

MKS-Magic® cable tray

Components used, MKSM cable trays

Wall/ceiling mounting with suspended support/bracket

Component	Type					
Cable tray	MKSM 6... FS	1	2	2	1	2
Support	US 5 K ... FT	1	1	1	0	0
Protective cap	US 5 KS OR	1	1	1	0	0
Wall and support brackets	AW30F... FT	1	2	2	1	2
Spacer	DSK 45	1	2	1	0	0
Hexagonal bolt	SKS 10x 90 F	1	2	1	0	0
Truss-head bolt	FRSB 6x 15 F	2	4	4	2	4
Threaded rod	2078 M12 G	1	2	2	1	2
Hexagonal nut	DIN 934 M12 G	4	5	8	4	5
Washer	966 M12 G	2	3	4	2	3
Connection sleeve	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1
Choose the fastening anchors according to the substrate	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1

Choose the fastening anchors according to the substrate

Ceiling mounting with mounting rails

Component	Type		
Cable tray	MKSM 6... FS	1	2
Mounting rail	See table	1	2
Protective cap	MS4141 EK	2	4
Threaded rod	2078 M12 G	2	4
Hexagonal nut	DIN 934 M12 G	6	10
Large washer	DIN440 14 F	2	4
Washer	966 M12 G	2	4
Connection sleeve	12005 M12 G	0	2
Truss-head bolt	FRSB 5x 15 F	2	4
Large washer	DIN440 7 F	2	4

Choose the fastening anchors according to the substrate

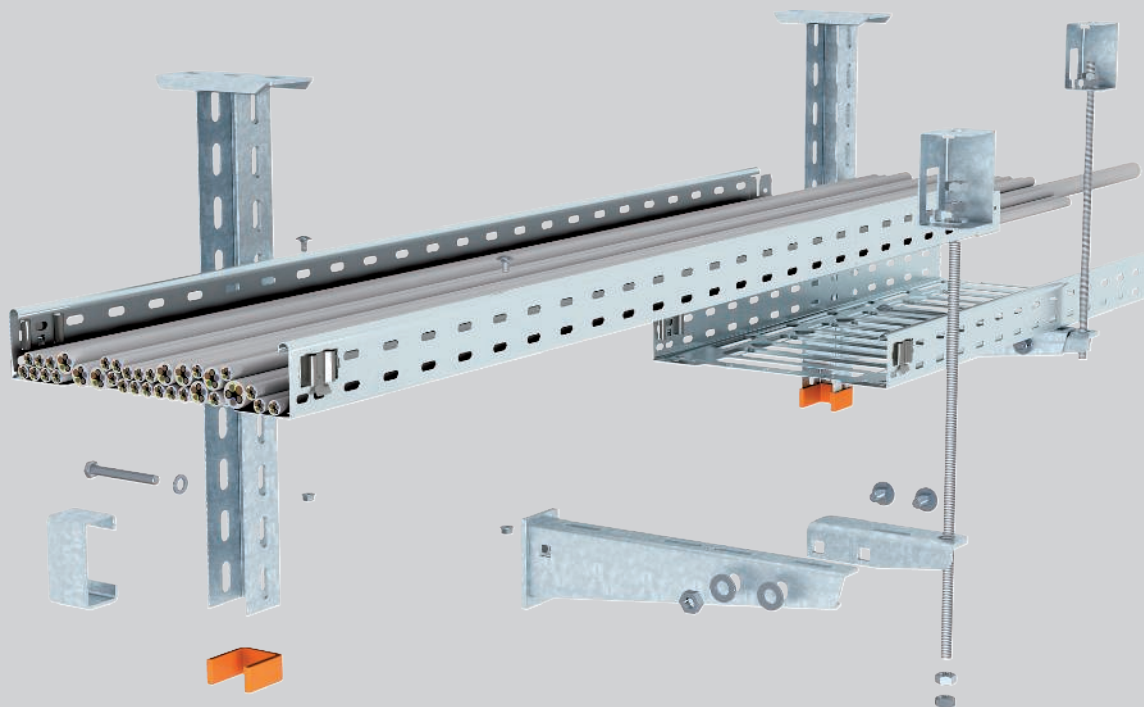
Mounting rails to be used according to support spacing

Cable tray type	Cable tray width	max. 1.50 m
MKSM 610 FS	100 mm	MSL4141P
MKSM 620 FS	200 mm	MSL4141P
MKSM 630 FS	300 mm	MS4141P
MKSM 640 FS	400 mm	MS4141P

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Cable tray SKS-Magic®

System description



The tested SKS-Magic® cable trays can be mounted under the ceiling or on the wall with brackets. In the event of fire, the system has a proven mechanical stability of 30 minutes. The SKS-Magic® cable trays can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending in a fire. As the cable trays deform in a fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing of the SKS-Magic® cable trays. If the cable loads and tray widths listed in the proof of test-

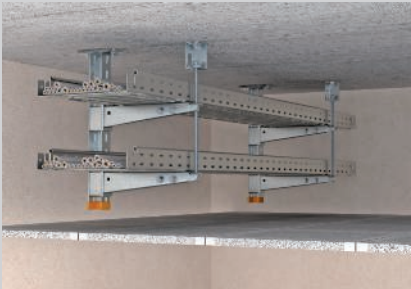
ing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented. A further option for ceiling mounting is the support of the cable trays on profile rails, each mounted under the ceiling with two threaded rods. With this mounting variant, sufficient distances to the false ceiling must also be maintained. A two-layer arrangement of the cable trays is possible, providing that the approved tensile stress in the threaded rod is maintained in the event of fire.

Cable tray SKS-Magic®

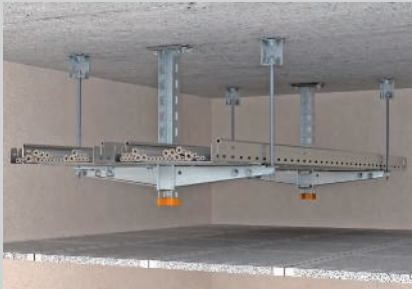
Installation principle



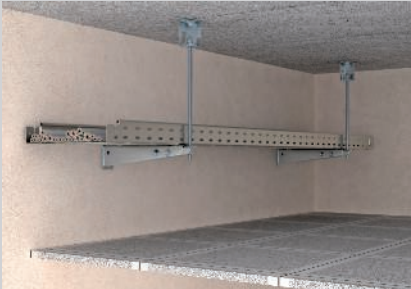
Single-layer ceiling suspension.



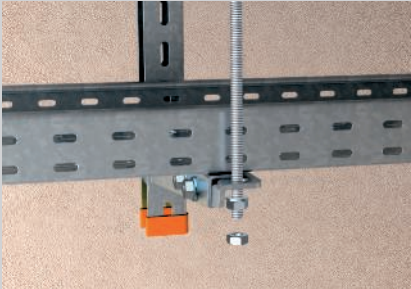
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



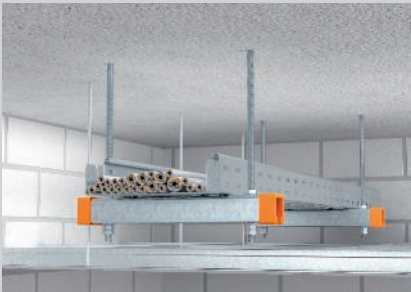
Wall mounting, one and two-layer possible.



Mounting of the threaded rod lock through the connection bracket on the tip of the bracket.



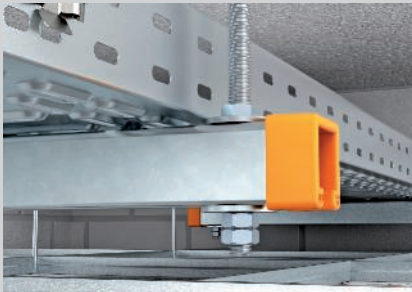
Screwless joint connection, only the base lugs need to be bent.



Single-layer ceiling mounting above suspended fire protection ceiling.



Two-layer ceiling mounting above suspended fire protection ceiling.



Clamp fastening for high load capacities.

Tested mounting options



CAUTION: No maintenance of electrical functionality according to DIN 4102 Part 12!

Always indicate the item number when ordering.

Cable tray SKS-Magic®

Proof

Fire-proof fastening above fire protection ceilings

Fire load	30 minutes
Proof of testing	OBO Bettermann
Document no. - Mounting with suspended support / bracket SKSM	05/170601-02
Document no. - Mounting with mounting rails	05/170601-01
Testing principles	In accordance with DIN 4102

Proofs of testing are also available for the SKS cable trays and can be requested accordingly.

Support spacing for wall / ceiling mounting with suspended support / bracket

Cable tray width	Cable load per cable tray					
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m	max. 1.50 m	max. 1.50 m	max. 1.20 m
500 mm	max. 75 kg/m	max. 1.50 m	max. 0.90 m	max. 1.50 m	max. 1.50 m	max. 0.90 m
600 mm	max. 90 kg/m	max. 1.50 m	max. 0.75 m	max. 1.50 m	max. 1.50 m	max. 0.75 m

Support spacing for ceiling mounting with mounting rails

Cable tray width	Cable load per cable tray		
100 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 45 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 60 kg/m	max. 1.50 m	max. 1.20 m
500 mm	max. 75 kg/m	max. 1.50 m	max. 0.90 m
600 mm	max. 90 kg/m	max. 1.50 m	max. 0.75 m

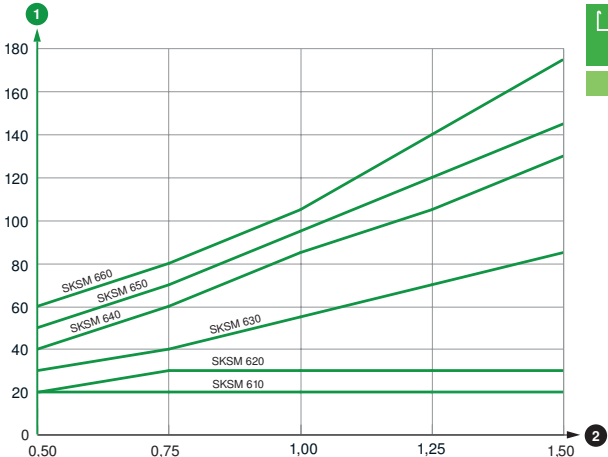
Required minimum spacing "a" under fire load at different support spacings

Cable tray width	Cable load per cable tray	max. 0.50 m	max. 0.75 m	max. 1.00 m	max. 1.25 m	max. 1.50 m
100 mm	max. 15 kg/m	20 mm	20 mm	20 mm	20 mm	20 mm
200 mm	max. 30 kg/m	20 mm	30 mm	30 mm	30 mm	30 mm
300 mm	max. 45 kg/m	30 mm	40 mm	55 mm	70 mm	85 mm
400 mm	max. 60 kg/m	40 mm	60 mm	85 mm	105 mm	130 mm
500 mm	max. 75 kg/m	50 mm	70 mm	95 mm	120 mm	145 mm
600 mm	max. 90 kg/m	60 mm	80 mm	105 mm	140 mm	175 mm

The stated values for the wall / ceiling mounting with suspended support / bracket and for ceiling mounting with mounting rails

The minimum spacing "a" relates to the distance of the under side of the cable tray to the top side of the fire protection ceiling.

Spacing diagram, SKSM cable tray



- 1 Minimum distance a in mm
- 2 Support spacing in m

Cable tray SKS-Magic®

Components used, SKSM cable trays

Wall/ceiling mounting with suspended support/bracket

Component	Type					
Cable tray	SKSM 6... FS	1	2	2	1	2
Support	US 5 K ... FT	1	1	1	0	0
Protective cap	US 5 KS OR	1	1	1	0	0
Wall and support brackets	AW30F... FT	1	2	2	1	2
Spacer	DSK 45	1	2	1	0	0
Hexagonal bolt	SKS 10x 90 F	1	2	1	0	0
Truss-head bolt	FRSB 6x 15 F	2	4	4	2	4
Threaded rod	2078 M12 G	1	2	2	1	2
Hexagonal nut	DIN 934 M12 G	4	5	8	4	5
Washer	966 M12 G	2	3	4	2	3
Connection sleeve	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1
Choose the fastening anchors according to the substrate	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1

Choose the fastening anchors according to the substrate

Ceiling mounting with mounting rails

Component	Type		
Cable tray	SKSM 6... FS	1	2
Mounting rail	See table	1	2
Protective cap	MS41... EK	2	4
Threaded rod	2078 M12 G	2	4
Hexagonal nut	DIN 934 M12 G	6	10
Large washer	DIN440 14 F	2	4
Washer	966 M12 G	2	4
Connection sleeve	12005 M12 G	0	2
Truss-head bolt	FRSB 6x 15 F	2	4
Large washer	DIN440 7 F	2	4

Choose the fastening anchors according to the substrate

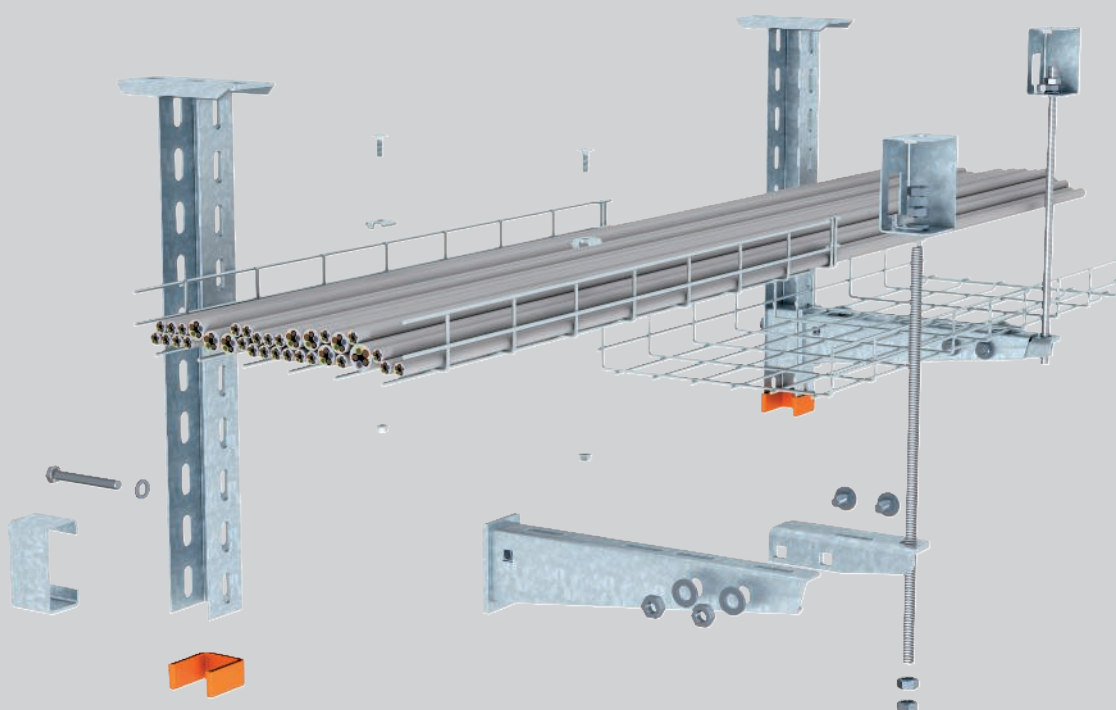
Mounting rails to be used according to support spacing

Cable tray type	Cable tray width	max. 0.50 m	max. 0.75 m	max. 1.00 m	max. 1.25 m	max. 1.50 m
SKSM 610 FS	100 mm	MS4121P	MS4121P	MS4121P	MS4121P	MSL4141P
SKSM 620 FS	200 mm	MS4121P	MS4121P	MS4121P	MSL4141P	MSL4141P
SKSM 630 FS	300 mm	MS4121P	MSL4141P	MSL4141P	MSL4141P	MS4141P
SKSM 640 FS	400 mm	MSL4141P	MSL4141P	MSL4141P	MS4141P	MS4141P
SKSM 650 FS	500 mm	MS4141P	MS4141P	MS4141P	MS4141P	MS4141P
SKSM 660 FS	600 mm	MS4141P	MS4141P	MS4141P	MS4141P	MS4141P



GR-Magic® mesh cable tray

System description



The tested GR-Magic® mesh cable tray system is suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the system has a proven mechanical stability of 30 minutes. The GR-Magic® mesh cable tray can be mounted under the ceiling or on the wall with brackets. The brackets are additionally secured on the ceiling with a threaded rod to prevent them from bending in a fire. As the mesh cable tray deforms in a fire, sufficient distance to the false ceiling must be maintained. This minimum distance is documented in the proof of testing for the various versions of the GR-Magic® mesh cable tray. If the cable loads and tray widths listed in the proof of

testing are maintained and the minimum spacings to the false ceiling taken into account, then multi-layer variants can also be implemented. A further option for ceiling mounting is the support of the mesh cable tray on profile rails, each mounted under the ceiling with two threaded rods. With this mounting variant, sufficient distances to the false ceiling must be maintained. A two-layer arrangement of the cable trays is possible, providing that the approved tensile stress in the threaded rods is also maintained in the event of fire.

GR-Magic® mesh cable tray

Installation principle



Single-layer ceiling suspension with suspended support and bracket.



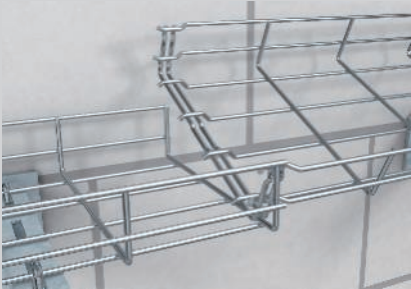
Two-layer ceiling suspension with bracket arrangement on one side.



Two-layer ceiling suspension with bracket arrangement on both sides.



Wall mounting, one and two-layer possible.



Interconnecting of two stock lengths of the mesh cable tray.



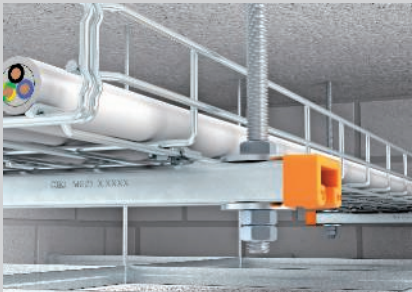
Screwless joint connection.



Single-layer ceiling mounting above suspended fire protection ceiling.



Two-layer ceiling mounting above suspended fire protection ceiling.



Clamp fastening for high load capacities.

Tested mounting options



CAUTION: No maintenance of electrical functionality according to DIN 4102 Part 12!

Always indicate the item number when ordering.

GR-Magic® mesh cable tray

Proof

Fire-proof fastening above fire protection ceilings

Fire load	30 minutes
Proof of testing	OBO Bettermann
Document no. - Mounting with suspended support / bracket	05/130301-06
Document no. - Mounting with mounting rails	05/130301-05
Testing principles	In accordance with DIN 4102

Support spacing for wall / ceiling mounting with suspended support / bracket

Mesh cable tray width	Cable load per mesh cable tray					
200 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 40 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m

Support spacing for ceiling mounting with mounting rails

Mesh cable tray width	Cable load per mesh cable tray		
100 mm	max. 10 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 40 kg/m	max. 1.50 m	max. 1.50 m

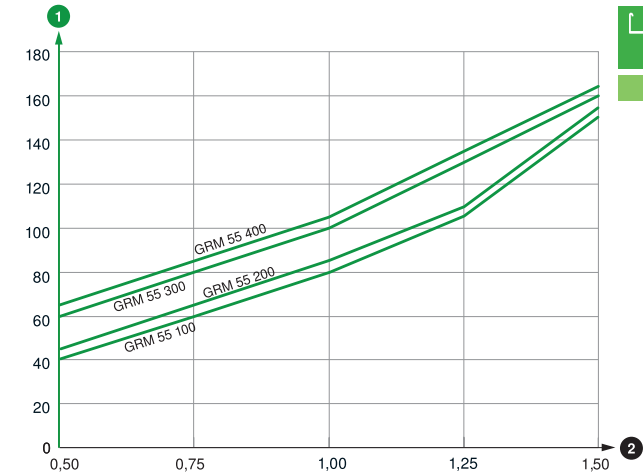
Required minimum spacing "a" under fire load at support spacing max. 1.5 m

Mesh cable tray width	Cable load per mesh cable tray	max. 1.50 m
100 mm	max. 10 kg/m	150 mm
200 mm	max. 20 kg/m	155 mm
300 mm	max. 30 kg/m	160 mm
400 mm	max. 40 kg/m	165 mm



The stated values for the wall / ceiling mounting with suspended support / bracket and for ceiling mounting with mounting rails

The minimum spacing "a" relates to the distance of the under side of the mesh cable tray to the top side of the fire protection ceiling.



- 1 Minimum distance a in mm
- 2 Support spacing in m

GR-Magic® mesh cable tray

Components used, mesh cable trays GRM

Wall/ceiling mounting with suspended support/bracket

Component	Type					
Mesh cable tray	GRM 55 ... G	1	2	2	1	2
Support	US 5 K ... FT	1	1	1	0	0
Protective cap	US 5 KS OR	1	1	1	0	0
Wall and support brackets	AW30F... FT	1	2	2	1	2
Spacer	DSK 45	1	2	1	0	0
Hexagonal bolt	SKS 10x 90 F	1	2	1	0	0
Clamping piece	GKS 34G	2	4	4	2	4
Threaded rod	2078 M12 G	1	2	2	1	2
Hexagonal nut	DIN 934 M12 G	4	5	8	4	5
Washer	966 M12 G	2	3	4	2	3
Connection sleeve	12005 M12 G	0	1	0	0	1
Fire protection clamp	BSB	1	1	2	1	1

Choose the fastening anchors according to the substrate

Ceiling mounting with mounting rails

Component	Type		
Mesh cable tray	GRM 55 ... G	1	2
Mounting rail	See table	1	2
Protective cap	MS41... EK	2	4
Threaded rod	2078 M12 G	2	4
Hexagonal nut	DIN 934 M12 G	6	10
Large washer	DIN440 14 F	2	4
Washer	966 M12 G	2	4
Connection sleeve	12005 M12 G	0	2
Clamping piece	GKS 34G	2	4
Large washer	DIN440 7 F	2	4

Choose the fastening anchors according to the substrate

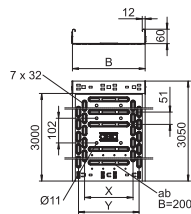
Mounting rails to be used according to support spacing

Mesh cable tray type	Mesh cable tray width	max. 1.50 m
GRM 55 100 G	100 mm	MS4121P
GRM 55 200 G	200 mm	MS4121P
GRM 55 300 G	300 mm	MSL4141P
GRM 55 400 G	400 mm	MSL4141P

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False ceiling, cable tray

Cable tray RKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 FS	100	0.75	100	—	50	3	132.131	6047611
RKSM 620 FS	200	0.75	200	100	150	3	183.000	6047638
RKSM 630 FS	300	0.75	300	200	250	3	235.080	6047654
RKSM 640 FS	400	0.90	400	300	350	3	331.340	6047689

Sl Steel

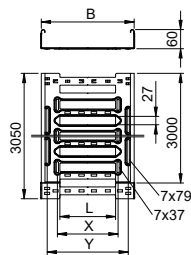
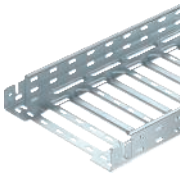
FS Strip-galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

Cable tray MKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
MKSM 610 FS	100	1.00	100	—	62	30	3	165.000	6059000
MKSM 620 FS	200	1.00	200	96	162	80	3	219.340	6059004
MKSM 630 FS	300	1.00	300	196	262	180	3	256.720	6059006
MKSM 640 FS	400	1.00	400	296	362	280	3	294.000	6059008

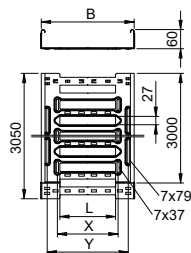
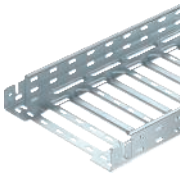
Sl Steel

FS Strip-galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

Cable tray SKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
SKSM 610 FS	100	1.50	100	—	62	30	6	247.540	6059456
SKSM 620 FS	200	1.50	200	96	162	80	3	329.180	6059460
SKSM 630 FS	300	1.50	300	196	262	180	3	385.250	6059462
SKSM 640 FS	400	1.50	400	296	362	280	3	441.320	6059464
SKSM 650 FS	500	1.50	500	396	462	380	3	497.370	6059466
SKSM 660 FS	600	1.50	600	496	562	480	3	553.440	6059468

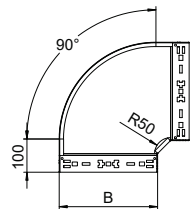
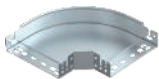
Sl Steel

FS Strip-galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

90° Magic bend



Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 FS	100	100	1	65.700	6041130
RBM 90 620 FS	200	200	1	122.100	6041134
RBM 90 630 FS	300	300	1	192.800	6041136
RBM 90 640 FS	400	400	1	275.400	6041138
RBM 90 650 FS	500	500	1	376.300	6041140
RBM 90 660 FS	600	600	1	493.000	6041142

Sl Steel

FS Strip-galvanised

90° bend with quick connector system. For all cable tray types of 60 mm side height.

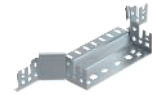
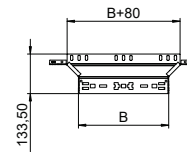
Magic add-on tee

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 FS	100	100	1	37.700	6041230
RAAM 620 FS	200	200	1	50.100	6041234
RAAM 630 FS	300	300	1	63.500	6041236
RAAM 640 FS	400	400	1	75.700	6041238
RAAM 650 FS	500	500	1	89.300	6041240
RAAM 660 FS	600	600	1	102.700	6041242

Sl Steel

FS Strip-galvanised

Magic add-on tee with quick connector system. For all cable tray types of 60 mm side height.



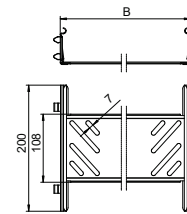
Magic straight connector set FS

Type	Side height mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KTSMV 610 FS	60	100	1	30.500	6068914
KTSMV 620 FS	60	200	1	37.200	6068918
KTSMV 630 FS	60	300	1	44.000	6068920
KTSMV 640 FS	60	400	1	50.700	6068922
KTSMV 650 FS	60	500	1	57.400	6068924
KTSMV 660 FS	60	600	1	64.200	6068926

Sl Steel

FS Strip-galvanised

Cable tray connector with quick fastening for the screwless connection of perforated cable trays with a side height of 60 mm.



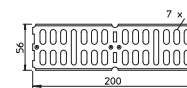
Straight and angle connector 60

Type	Dimension mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RWVL 60 FS	200 x 56	10	16.400	6067115

Sl Steel

FS Strip-galvanised

Straight and angle connector for cable trays and fittings with a side height of 60 mm.



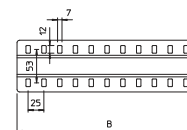
Joint plate

Type	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SSLB 100 FS	100	20	7.700	7070205
SSLB 200 FS	200	20	16.700	7070213
SSLB 300 FS	300	20	25.700	7070217
SSLB 400 FS	400	20	34.700	7070221
SSLB 500 FS	500	20	43.700	7070225
SSLB 600 FS	600	20	52.700	7070233

Sl Steel

FS Strip-galvanised

Wide joint plate for use in all cable trays and wide span cable trays.



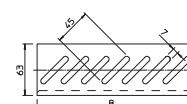
Bottom end plate

Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BEB 100 FS	100	100	100	5.400	7083106
BEB 200 FS	200	200	100	11.400	7083203
BEB 300 FS	300	300	100	17.200	7083300
BEB 400 FS	400	400	100	23.100	7083408
BEB 500 FS	500	500	50	29.000	7083505
BEB 600 FS	600	600	50	35.000	7083602

Sl Steel

FS Strip-galvanised

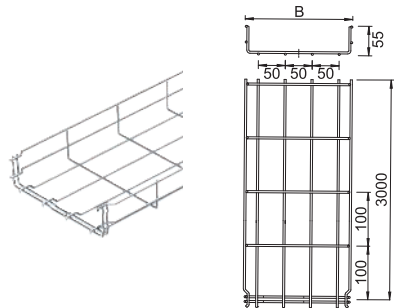
Bottom end plate for floor reinforcement at the ends of the cable tray and as cable protection.





False ceiling, mesh cable tray

Mesh cable tray GRM 55

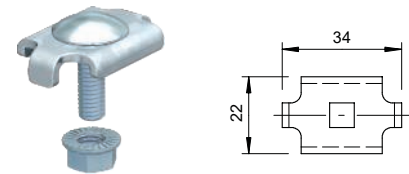


Type	Width mm	Wire Ø mm	Dimen- sion B mm	Pack. Weight		Item No.
				m	kg/100 m	
GRM 55 100 G	100	3.9	100	3	72.400	6001442
GRM 55 200 G	200	3.9	200	3	100.667	6001446
GRM 55 300 G	300	4.8	300	3	194.900	6001448
GRM 55 400 G	400	4.8	400	3	236.700	6001450

- St Steel
- G Electrogalvanised

Mesh cable tray with shaped connector of side height 55 mm.

Clamping piece

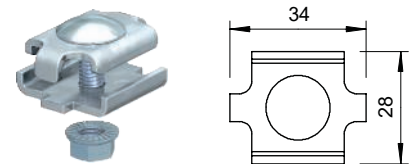


Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
GKS 34 G	20	2.000	6016855

- St Steel
- G Electrogalvanised

Clamp for fixing mesh cable trays to wall or support brackets.

Connector



Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
GSV 34 G	20	3.000	6016596

- St Steel
- G Electrogalvanised

Screwed version of joint connector for mesh cable trays.

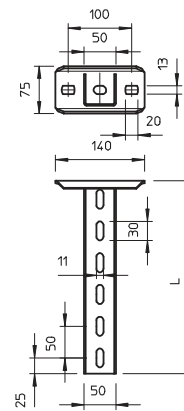
US 5 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 K 20 FT	200	2.5	200	1	85.000	6341527
US 5 K 30 FT	300	2.5	300	1	110.000	6341535
US 5 K 40 FT	400	2.5	400	1	136.000	6341543
US 5 K 50 FT	500	2.5	500	1	161.000	6341551
US 5 K 60 FT	600	2.5	600	1	185.000	6341578
US 5 K 70 FT	700	2.5	700	1	210.000	6341586
US 5 K 80 FT	800	2.5	800	1	236.000	6341594
US 5 K 90 FT	900	2.5	900	1	261.000	6341608
US 5 K 100 FT	1000	2.5	1000	1	286.000	6341616
US 5 K 110 FT	1100	2.5	1100	1	311.000	6341624
US 5 K 120 FT	1200	2.5	1200	1	337.000	6341632

Sl Steel

FT Hot-dip galvanised

U support of dimensions 50 x 50 mm with welded head plate.

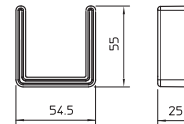


End cap

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 KS OR	Pastel orange	20	1.300	6338462

PE Polyethylene

End cap to cover the ends of US 5 supports.



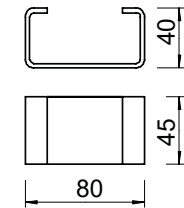
Spacer

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 45 FT	20	18.000	6416500

Sl Steel

FT Hot-dip galvanised

Spacer for use in U 5 support and in the head plate, type KU 7 VQP.



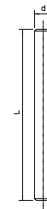
Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M12 1M G	M12	12	1000	10	62.000	3141306

Sl Steel

G Electrogalvanised

Threaded rod to DIN 976.



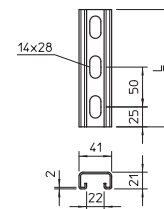
MS4121 mounting rail, slot width 22 mm, perforated

Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
MS4121P2000FS	2000	41x21	2	2000	2	175.000	1122918
MS4121P3000FS	3000	41x21	2	3000	3	141.900	1122920
MS4121P2000FT	2000	41x21	2	2000	2	183.000	1122923
MS4121P3000FT	3000	41x21	2	3000	3	151.300	1122924

Sl Steel

FS Strip-galvanised FT Hot-dip galvanised

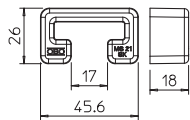
Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.





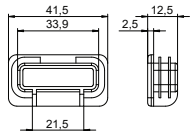
False ceiling, mounting systems

Protective cap MS4121



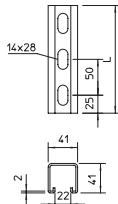
Type	Colour	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
MS4121 SK	Pastel orange	25	0.650		1122902
PE Polyethylene					
Protective caps for profile rail, type MS4121.					

End cap MS4121



Type	Colour	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
MS4121 EK	Pastel orange	50	0.645		1122904
PE Polyethylene					
End cap for profile rail, type MS4121.					

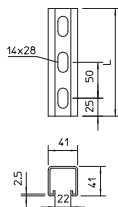
MS4141 mounting rail, slot width 22 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack.		Weight	Item No.
					m	kg/100 m		
MSL4141P1000FS	1000	41x41	2	1000	1	201.100		1122970
MSL4141P3000FS	3000	41x41	2	3000	3	201.100		1122972
MSL4141P1000FT	1000	41x41	2	1000	1	214.700		1122962
MSL4141P3000FT	3000	41x41	2	3000	3	214.700		1122964
St Steel								
FS Strip-galvanised FT Hot-dip galvanised								

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

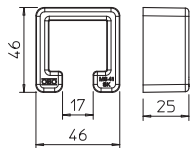
MS4141 mounting rail, slot width 22 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack.		Weight	Item No.
					m	kg/100 m		
MS4141P1000FS	1000	41x41	2.5	1000	1	247.500		1122908
MS4141P3000FS	3000	41x41	2.5	3000	3	247.500		1122910
St Steel								
FS Strip-galvanised								

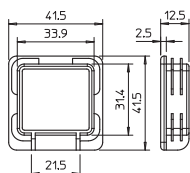
Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

Protective cap MS4141



Type	Colour	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
MS4141 SK	Pastel orange	25	1.320		1122900
PE Polyethylene					
Protective caps for profile rail, type MS4141.					

End cap MS4141



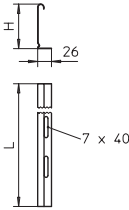
Type	Colour	Pack.		Weight	Item No.
		pcs	kg/100 pcs.		
MS4141 EK	Pastel orange	50	0.670		1122906
PE Polyethylene					
End cap for profile rail, type MS4141.					

Barrier strip 45

Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

St Steel
FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

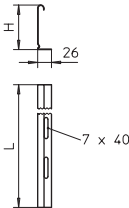


Barrier strip 60

Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

St Steel
FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

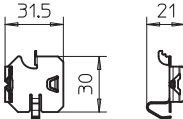


Hold-down clamp for separating retainer fastening in RKSM

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

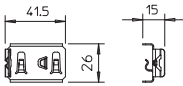


Hold-down clamp for separating retainer fastening

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS GR A2	30	0.830	6062282

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.

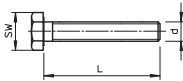


Hexagonal bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion d mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x90 F	M10 x 90	90	10	17	20	7.800	6418252

St Steel
F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

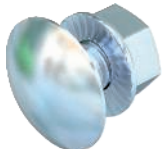
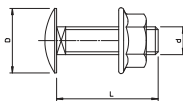


Truss-head bolt with flange nut

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 F	M 6 x 12	12	13.5	6	100	0.990	6406122
FRSB 6x20 F	M 6 x 20	20	13.5	6	100	1.000	6406203

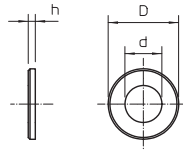
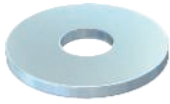
St Steel
F Hot-dip galvanised

Truss-head bolt with square neck including flange nut.



False ceiling, mounting systems

Large washer



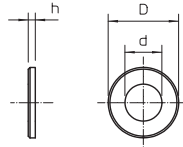
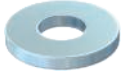
Type	Dimen- sion D mm	Dimen- sion d mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 7 F	22	6.6	2	100	0.550	6408702
DIN440 14 F	44	13.5	4	50	4.736	6408737

St Steel

F Hot-dip galvanised

Washer of particularly large outer diameter.

Washer



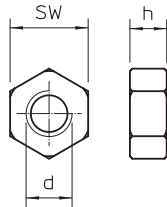
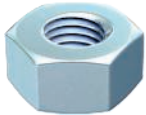
Type	Thread	Dimen- sion d mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.

Hexagonal nut DIN 934



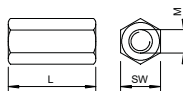
Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.

Connection sleeve



Type	Thread	Dimen- sion L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M12 G	M12	40	19	25	7.000	6410111

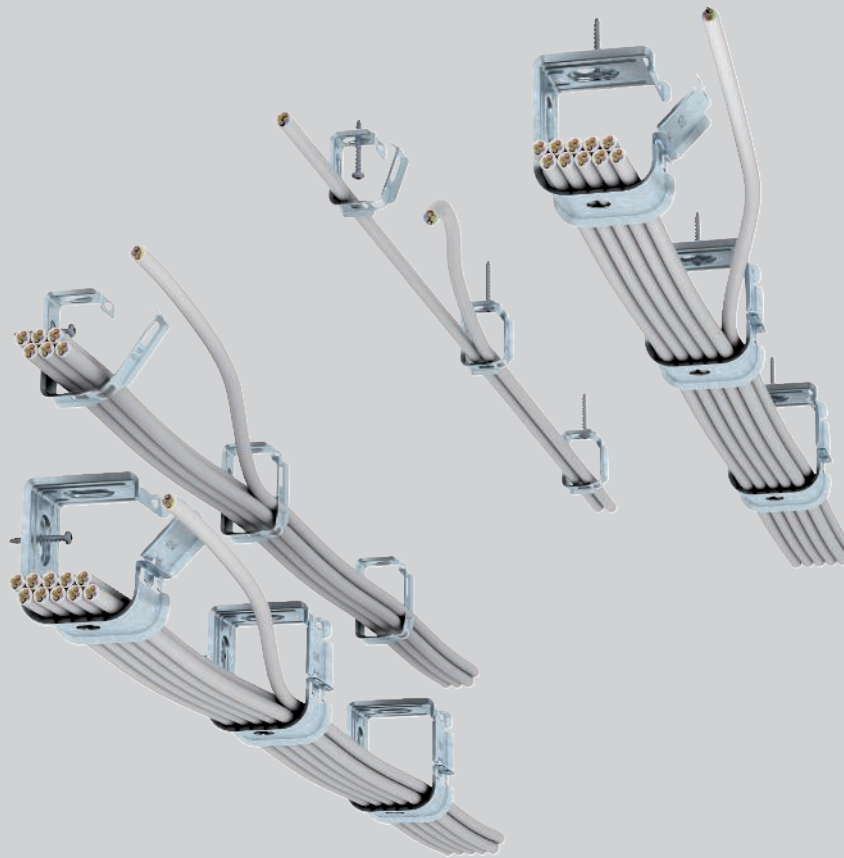
St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.

Grip M grouped support

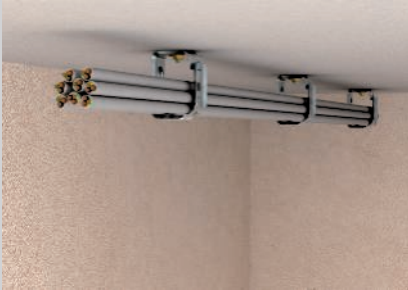
System description



The tested Grip M grouped supports are suitable for installation in the false ceiling area of escape and rescue routes. In the event of a fire, the grouped supports have a proven mechanical stability of 30 to 90 minutes. They can be mounted under the ceiling or on the wall. The grouped supports are made of sheet steel and can be opened and closed easily without

the use of tools. To allow simple cable insertion, the supports remain open during cable routing. Then, the grouped supports are closed through simple locking. The construction of the grouped support and weight of the installed cables prevent the lock from opening itself unintentionally.

Grip M grouped support Installation principle



Ceiling mounting of the grouped supports 2031 M15 and 2031 M 30.



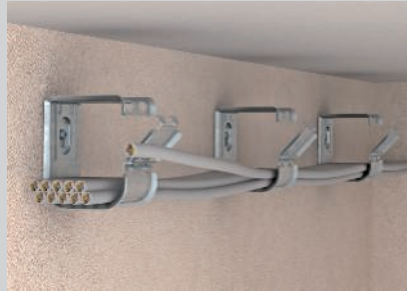
Wall-mounted grouped supports 2031 M15 and 2031 M 30.



Grouped support 2031 M 70 as wall and ceiling mounting for large cable volume.



Opening of the grouped support and insertion of the cables.



Simple insertion the cables in the opened grouped support.

Tested mounting options



Grip M grouped support

Proof

Fire-proof fastening above fire protection ceilings.

Fire load	30 and 90 minutes
Proof of testing	OBO Bettermann
Document no.	05/151214-01
Testing principles	In accordance with DIN 4102

Grouped support 2031 M 15, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment		
30 minutes	max. 0.6 m	max. 3.3 kg/m	80 mm	100 mm
30 minutes	max. 0.8 m	max. 2.5 kg/m	100 mm	120 mm
90 minutes	max. 0.6 m	max. 3.3 kg/m	100 mm	120 mm
90 minutes	max. 0.8 m	max. 2.5 kg/m	120 mm	140 mm

Grouped support 2031 M 30, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment		
30 minutes	max. 0.6 m	max. 5.8 kg/m	80 mm	110 mm
30 minutes	max. 0.8 m	max. 4.3 kg/m	100 mm	130 mm
90 minutes	max. 0.6 m	max. 5.8 kg/m	100 mm	130 mm
90 minutes	max. 0.8 m	max. 4.3 kg/m	120 mm	150 mm

Grouped support 2031 M 70, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment		
30 minutes	max. 0.6 m	max. 20.0 kg/m	80 mm	120 mm
30 minutes	max. 0.8 m	max. 15.0 kg/m	100 mm	140 mm
90 minutes	max. 0.6 m	max. 13.0 kg/m	100 mm	140 mm
90 minutes	max. 0.8 m	max. 10.0 kg/m	120 mm	160 mm

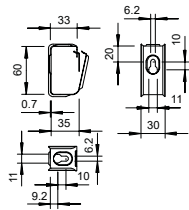
The minimum spacing "a" relates to the distance of the under side of the grouped support to the top side of the fire protection ceiling.





False ceiling, grouped support and pressure clip

GRIP "M" 15



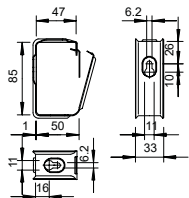
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 15 FS	15	50	50	3.700	2207028

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 30



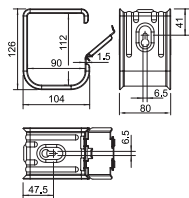
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 30 FS	30	25	25	6.200	2207036

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 70



Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 70 FS	70	10	10	34.500	2207060

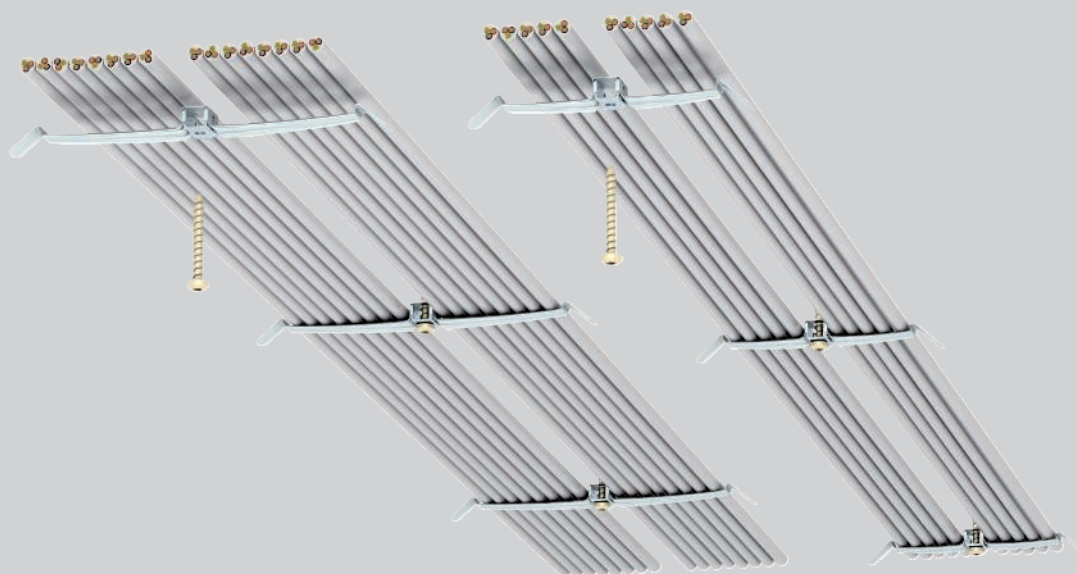
St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

Metal pressure clip

System description



The tested pressure clips are suitable for installation in the false ceiling area of escape and rescue routes. In the event of fire, the pressure clips have a proven mechanical stability of 30 minutes. They are mounted under the ceiling. The pressure clips are made of sprung, rustproof steel. For installation, the hips of the

pressure clips are simply bent downwards without tools and the cables pushed in from the side. The edges of the clip are sloping to exclude the possibility of damage to the cables.



Metal pressure clip Installation principle



Ceiling mounting with pressure clip 2034M.



Ceiling mounting with pressure clip 2033 M.



Ceiling mounting with pressure clip 2035 M.



Simple cable installation through side insertion of the cables.



Space-saving and fireproof mounting of cables above a fire protection ceiling.

Tested mounting options



Metal pressure clip

Proof

Fire-proof fastening above fire protection ceilings.

Fire load	30 minutes
Proof of testing	OBO Bettermann
Document no.	05/170329-01
Testing principles	In accordance with DIN 4102

Pressure clip 2033 M, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment	
30 minutes	max. 0.5 m	2x max. 1.84 kg/m	70 mm

Pressure clip 2034 M, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment	
30 minutes	max. 0.5 m	2x max. 1.15 kg/m	50 mm

Pressure clip 2035 M, mounting parameter and required minimum spacing "a"

Fire load	Fastening spacing	Cable assignment	
30 minutes	max. 0.5 m	1x max. 1.84 kg/m	70 mm



Fire protection ducts

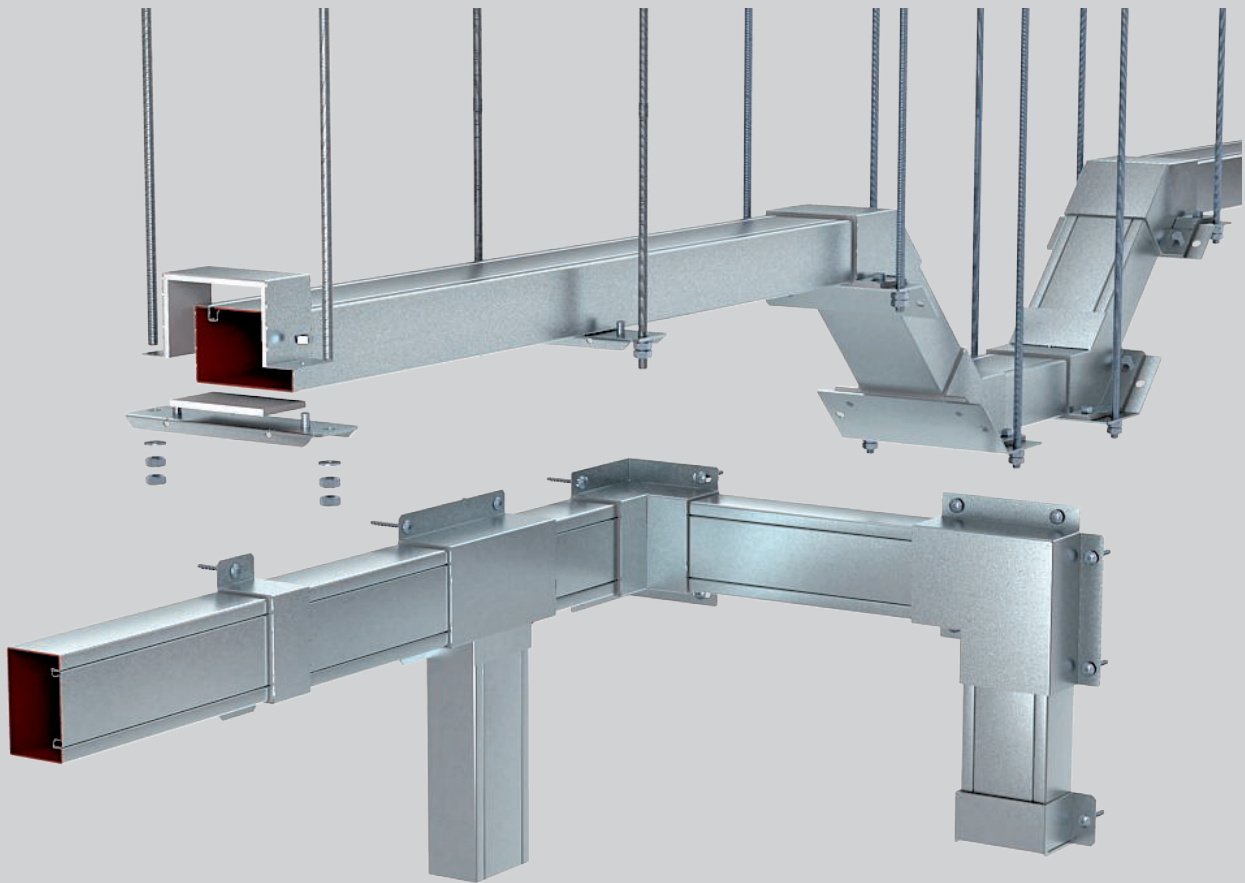
	System description, PYROLINE® Rapid	74
	Products	76
	System description, PYROLINE® Con D	106
	Products	108
	System description, PYROLINE® Fibre Optics	110
	Products	112
	System description, PYROLINE® Sun PV	114
	Products	116



PYROLINE® Rapid

Metal fire protection duct for direct and suspended mounting

System description



OBO's PYROLINE® Rapid fire protection duct is made from sheet steel with a profiled lid closing contour and an intumescent interior coating. If there is a fire, this provides active fire load encapsulation and safe prevention of the fire spread. This means that the escape and rescue routes remain free from fire and smoke. The PYROLINE® Rapid is tested and approved as an escape route duct for the classes I 30 to I 120. The shape matches the standard Rapid 80 cable routing duct. The fire protection duct can be installed directly on the wall or the ceiling. Mounting on

wall brackets or on a support system suspended from the ceiling is also possible. The lids can be engaged easily in the base, simultaneously creating the equipotential bonding. The connectors can also be used for suspension. Even overhead mounting is possible, as special brackets keep the cable load away from engaged lids. All the components are prefabricated. There are also no screw ends in the interior of the ducts, meaning that cables cannot be damaged.

Fire protection ducts

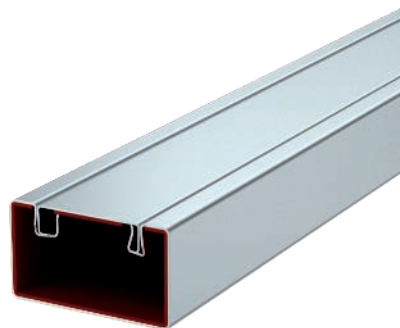


I30 I60 I90 I120

Fire resistance class	I30 to I120
Proof of application	General construction approval of DIBt, Berlin
Approval number	Z-19.30-2229
Testing standard	DIN 4102 Part 11

Note: For this metal installation duct with intumescent inner coating, only a general construction approval of the DIBt, Berlin, is available. In countries where a European Technical Assessment (ETA/ETB) is required, the possible use of these components must be agreed with the local fire protection authorities!

Metal fire protection duct, I30 to I120



Type	Dimension B mm	Dimension H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 0407 RW	70	40	30	2000	Pure white	2	254.650	7216501
St Steel								
L Painted								

Sheet steel duct with intumescent inner coating.

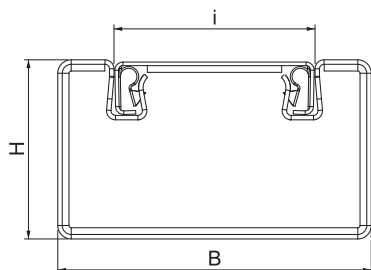
In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding.

Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

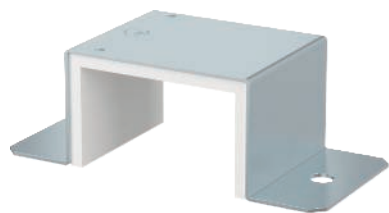
Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Included in the delivery: Cover and base as a unit, complete.

Dimensions



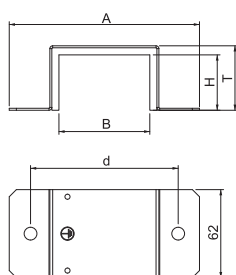
Connector



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VD 0407 RW	70	40	Pure white	1	24.000	7216511
St Steel						
L Painted						

Clamp with integrated seal for BSKM 0407, for connection and smoke-proof sealing of duct joints. Usable at min. 30 mm side distance of the duct to the ceiling or wall. Including loose seal for combination with support profile.

Dimensions



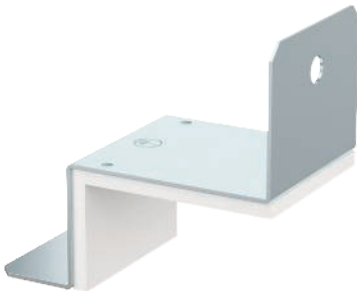
Type	Dimension A mm	Dimension T mm	Dimension d mm
BSKM-VD 0407 RW	134	45	104

Connector for corner mounting

Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VE 0407 RW	70	40	Pure white	5	17.000	7216513

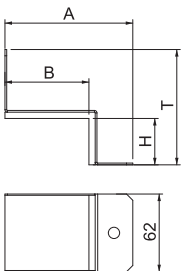
- St Steel
- L Painted

Clamp with integrated seal for BSKM 0407, for smoke-proof sealing of duct joints in the case of corner mounting without duct spacing to the ceiling or wall.



Type	Dimen- sion A mm	Dimen- sion T mm
BSKM-VE 0407 RW	102	92

Dimensions



Support

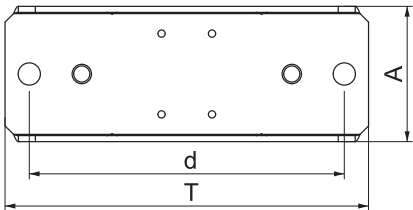
Type	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-AD 0407 RW	180	67	156	Pure white	1	35.700	7216516

- St Steel
- L Painted

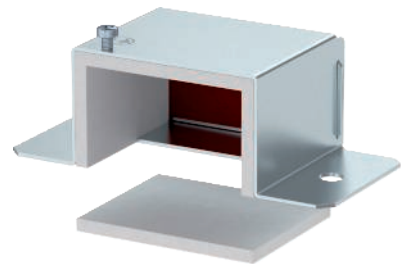
Support profile for suspended mounting of BSKM 0407, suitable as a suspension point to accept two M10 threaded rods and as the counter bearing to seal the joint, including nuts.



Dimensions



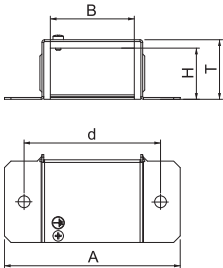
End piece



Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VK 0407 RW	70	40	Pure white	1	30.500	7216561
St Steel						
L Painted						

For smoke-tight end closure of the BSKM 0407 duct for direct wall and ceiling mounting, in connection with the support profile BSKM-AD 0407, even for suspended mounting. Including glued-in seals to close the joints and loose seal when combined with a support; screw for equipotential bonding also included.

Dimensions



Type	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion d mm
BSKM-VK 0407 RW	45	134	104

Metal fire protection duct, I30 to I120

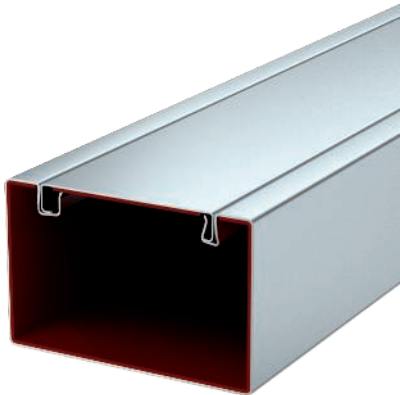
Type	Dimen- sion B mm	Dimen- sion H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 0711RW	110	70	60	2000	Pure white	2	387.000	7216600

- St Steel
- L Painted

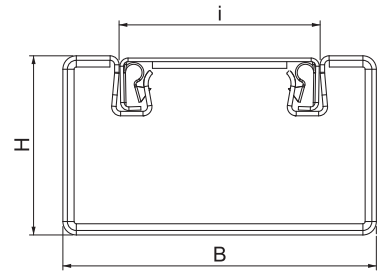
Sheet steel duct with intumescent inner coating.
In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding.
Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Included in the delivery: Cover and base as a unit, complete.



Dimensions

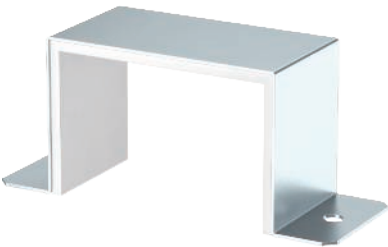


Connector

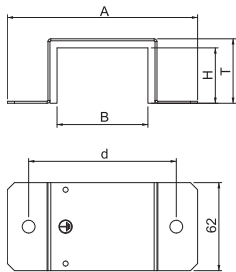
Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VD 0711RW	110	70	Pure white	1	37.800	7216601

- St Steel
- L Painted

Clamp with integrated seal for BSKM 0711, for connection and smoke-proof sealing of duct joints.
Usable at min. 30 mm side distance of the duct to the ceiling or wall. Including loose seal for combination with support profile.



Dimensions



Type	Dimen- sion A mm	Dimen- sion T mm	Dimen- sion d mm
BSKM-VD 0711RW	174	75	144

BSS_Typ_0A / en / 2019/03/11 10:48:19 10:48:19 (LLExpert_02374) / 2019/03/11 10:48:36 10:48:36

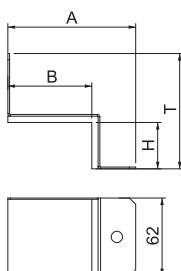
Connector for corner mounting



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VE 0711RW	110	70	Pure white	5	25.500	7216602
St Steel						
L Painted						

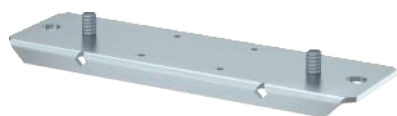
Clamp with integrated seal for BSKM 0711, for smoke-proof sealing of duct joints in the case of corner mounting without duct spacing to the ceiling or wall.

Dimensions



Type	Dimension A mm	Dimension T mm
BSKM-VE 0711RW	142	122

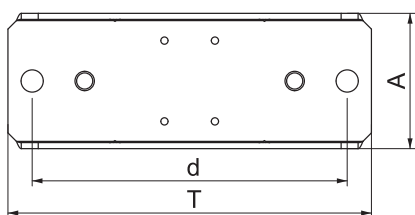
Support



Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-AD 0711RW	220	67	196	Pure white	1	43.500	7216603
St Steel							
L Painted							

Support profile for suspended mounting of BSKM 0711, suitable as a suspension point to accept two M10 threaded rods and as the counter bearing to seal the joint, including nuts.

Dimensions

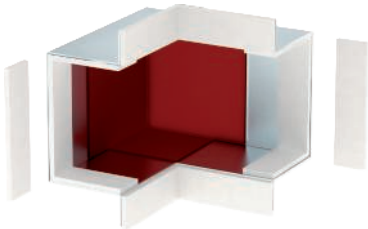


External corner

Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-AE 0711RW	110	70	Pure white	1	128.500	7216604

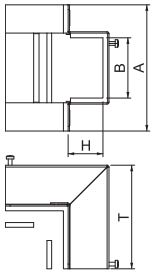
- St Steel
- L Painted

Fitting hood to cover two BSKM 0711 duct ends as external cover for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate.



Type	Dimension T mm	Dimension A mm
BSKM-AE 0711RW	170	174

Dimensions



Lock plate for external corner

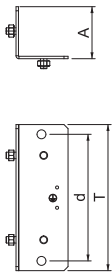
Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GA 0711RW	220	95	196	Pure white	1	99.600	7216605

- St Steel
- L Painted

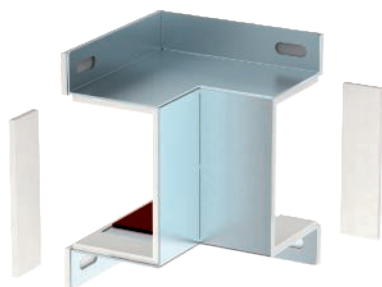
Adapter plate for suspended mounting of the external corner hood BSKM-AE 0711, with acceptance option for M10 threaded rods, including nuts.



Dimensions



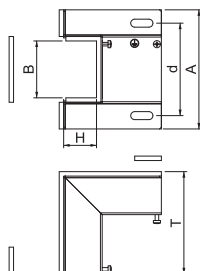
Internal corner



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-IE 0711RW	110	70	Pure white	1	94.000	7216608
St Steel						
L Painted						

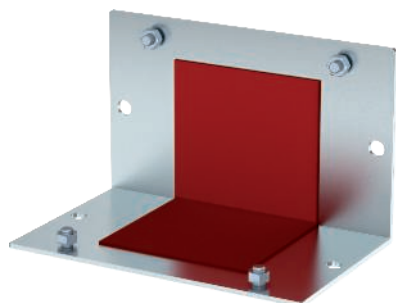
Fitting hood to cover two BSKM 0711 duct ends as internal cover for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-IE 0711RW	135	174	144

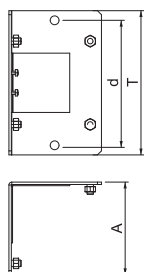
Lock plate for internal corner



Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GI 0711RW	220	135	196	Pure white	1	145.800	7216609
St Steel							
L Painted							

Adapter plate for suspended mounting of the internal corner hood BSKM-IE 0711, with acceptance option for M10 threaded rods, including nuts.

Dimensions

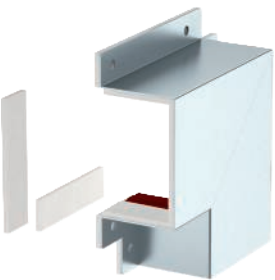


Flat angle

Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-FW 0711RW	110	70	Pure white	1	116.300	7216606

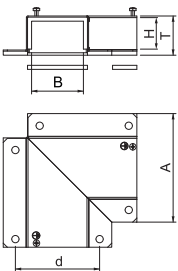
- St Steel
- L Painted

Fitting hood to cover two BSKM 0711 duct ends as flat angle for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-FW 0711RW	78	209	144

Dimensions

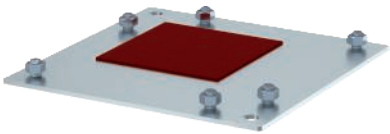


Lock plate for flat angle

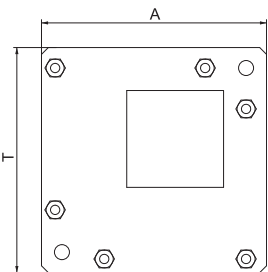
Type	Dimension T mm	Dimension A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GF 0711RW	210	210	Pure white	1	122.400	7216607

- St Steel
- L Painted

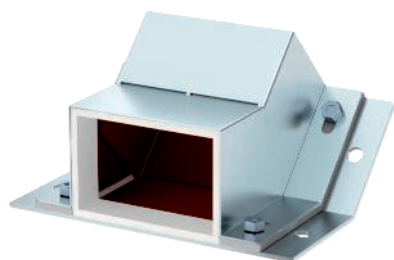
Adapter plate for suspended mounting of the flat angle hood BSKM-FW 0711, with acceptance option for M10 threaded rods, including nuts.



Dimensions



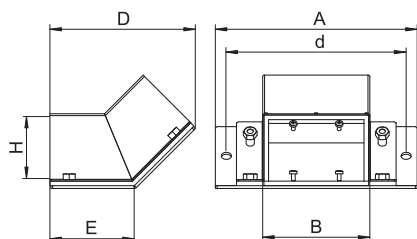
45° vertical bend, rising



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-ES 0711RW	110	70	Pure white	1	180.900	7216610
Sl Steel						
L Painted						

Rising vertical bend for creation of vertical jumps for suspended mounting of the BSKM 0711, with acceptance option for M10 threaded rods, including seals and nuts as well as screws for equipotential bonding.

Dimensions



Type	Dimension A mm	Dimension D mm	Dimension d mm	Dimension E mm
BSKM-ES 0711RW	220	159	144	92

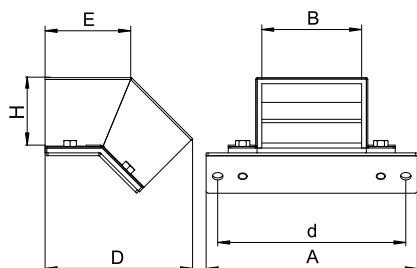
45° vertical bend, falling



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-EF 0711RW	110	70	Pure white	1	139.400	7216611
Sl Steel						
L Painted						

Falling vertical bend for creation of vertical jumps for suspended mounting of the BSKM 0711, with acceptance option for M10 threaded rods, including seals and nuts as well as screws for equipotential bonding.

Dimensions



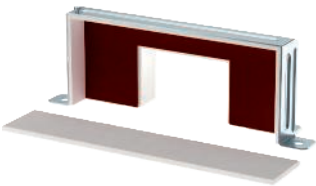
Type	Dimension A mm	Dimension D mm	Dimension d mm	Dimension E mm
BSKM-EF 0711RW	220	154	144	89

Reducing piece

Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-RE 1025RW	250	100	Pure white	1	73.200	7216631

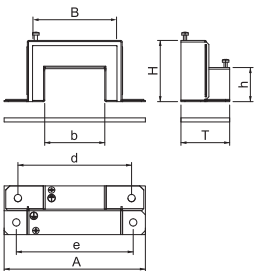
- St Steel
- L Painted

Fitting hood to cover a symmetrical reduction on a straight stretch of BSKM 1025 to BSKM 0711. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.



Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion d mm	Dimen- sion e mm
BSKM-RE 1025RW	70	110	61	314	220	284

Dimensions

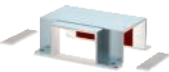
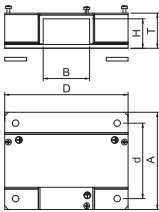


Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-TA 0711RW	110	70	Pure white	1	110.800	7216613

- St Steel
- L Painted

Fitting hood to cover three BSKM 0711 duct ends running towards each other in a T shape. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

T branch hood

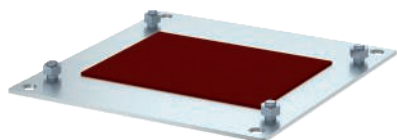


Type	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion D mm	Dimen- sion d mm
BSKM-TA 0711RW	78	174	210	144

Dimensions



Lock plate, T branch piece

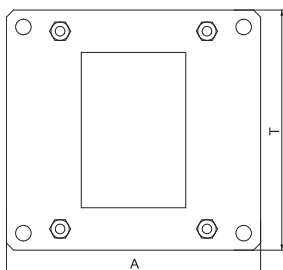


Type	Dimension T mm	Dimension A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GT 0711RW	220	170	Pure white	1	114.900	7216614

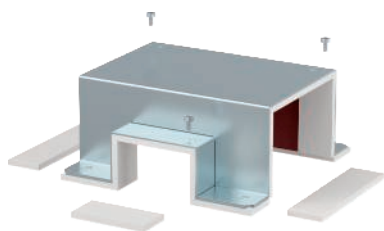
- St** Steel
- L** Painted

Adapter plate for suspended mounting of a BSKM-TA 0711 T branch, with acceptance option for M10 threaded rods, including nuts.

Dimensions



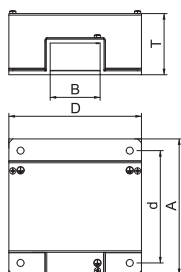
T reducing branch piece



Type	Dimension B mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-TR 0711RW	70	Pure white	1	118.000	7216616

Hood for the covering of three duct ends running towards each other in a T shape. Straight stretch, twice BSKM 0711, branch reduced to BSKM 0407. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension D mm	Dimension d mm
BSKM-TR 0711RW	78	174	170	144

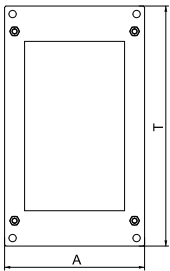
Lock plate, T reducing branch piece

Type	Dimen- sion T	Dimen- sion A	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
	mm	mm				
BSKM-GR 0711RW	220	170	Pure white	1	94.000	7216617
St Steel						
L Painted						

Adapter plate for suspended mounting of a BSKM-TR 0711 T reducing branch, with acceptance option for M10 threaded rods, including nuts.



Dimensions



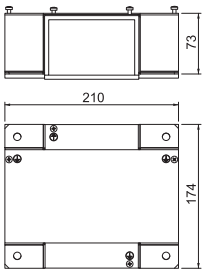
BSKM intersection, duct height 110

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-KR 0711RW	Pure white	1	116.000	7216615
St Steel				
L Painted				

Intersection as a cover of intersecting cable ends BSKM 0711. Wall and ceiling mounting is intended. Including seals for closing the joints.



Dimensions



BSS_Typ_0A / en / 2019/03/11 10:48:19 (LLExport_02374) / 2019/03/11 10:48:36 10:48:36

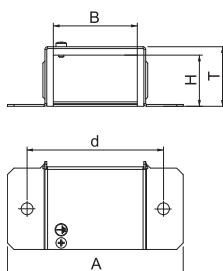
End piece



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VK 0711RW	110	70	Pure white	1	51.300	7216612
St Steel						
L Painted						

For smoke-tight end closure of the BSKM 0711 duct for direct wall and ceiling mounting, in connection with the support profile BSKM-AD 0711, even for suspended mounting. Including glued-in seals to close the joints and loose seal when combined with a support; screw for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-VK 0711RW	75	174	144

Wall connection I120

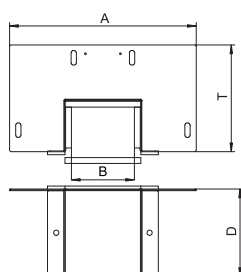


Type	Dimension B mm	Dimension T mm	Dimension A mm	Dimension D mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-WA 0711RW	110	183	320	150	Pure white	1	252.000	7216620
St Steel								
L Painted								

Frame as additional insulation in the area of the wall transition for direct wall and ceiling mounting of the BSKM 0711. Including screen and glued-in seals to close the joints, loose seal when combined with a support and with screw for equipotential bonding.

Only needed for I120 requirements.

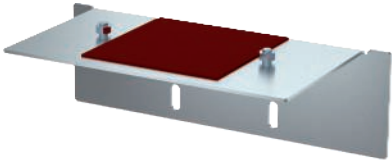
Dimensions



Lock plate for wall connection I120

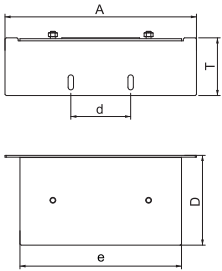
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GW 0711RW	Pure white	1	169.300	7216621
Steel				
Painted				

Adapter plate for suspended mounting of the wall connection BSKM-WA 0711, with acceptance option for M10 threaded rods, including nuts.

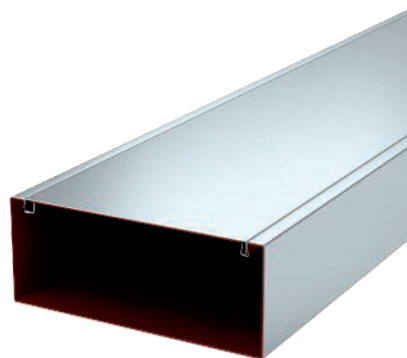


Type	Dimension A mm	Dimension D mm	Dimension T mm	Dimension e mm	Dimension d mm
BSKM-GW 0711RW	320	150	96	270	100

Dimensions



Metal fire protection duct, I30 to I120



Type	Dimension B mm	Dimension H mm	Dimension i mm	Length mm	Colour	Pack. m	Weight kg/100 m	Item No.
BSKM 1025RW	250	100	200	2000	Pure white	2	638.750	7216630
St Steel								
L Painted								

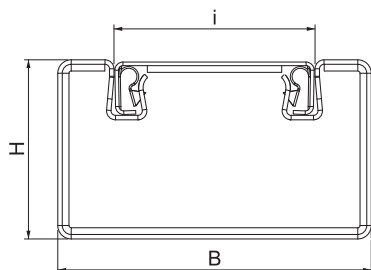
Sheet steel duct with intumescent inner coating.

In case of fire, actively prevents the spread of fire in the duct and protects emergency and escape routes against the impacts of a cable fire. The cover and base are securely interconnected using the self-contacting patented locking brackets. This also creates the equipotential bonding. Fire resistance classes I30 to I120 according to DIN 4102 Part 11.

Mounting options: directly on the wall or under the ceiling, beneath system floors on the raw floor, or suspended on support systems or using connector elements (support spacing, max. 1 m).

Included in the delivery: Cover and base as a unit, complete.

Dimensions



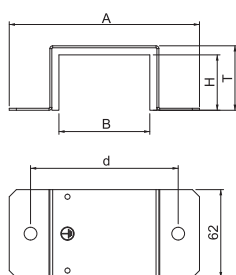
Connector



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VD 1025RW	250	100	Pure white	1	67.200	7216633
St Steel						
L Painted						

Clamp with integrated seal for BSKM 1025, for connection and smoke-proof sealing of duct joints. Usable at min. 30 mm side distance of the duct to the ceiling or wall. Including loose seal for combination with support profile.

Dimensions



Type	Dimension A mm	Dimension T mm	Dimension d mm
BSKM-VD 1025RW	314	105	284

Connector for corner mounting

Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VE 1025RW	250	100	Pure white	5	45.200	7216634

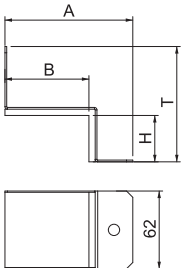
- St Steel
- L Painted

Clamp with integrated seal for BSKM 1025, for smoke-proof sealing of duct joints in the case of corner mounting without duct spacing to the ceiling or wall.



Type	Dimension A mm	Dimension T mm
BSKM-VE 1025RW	282	152

Dimensions



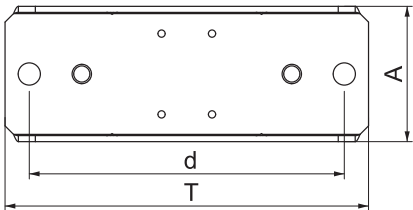
Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-AD 1025RW	360	67	336	Pure white	1	70.100	7216635

- St Steel
- L Painted

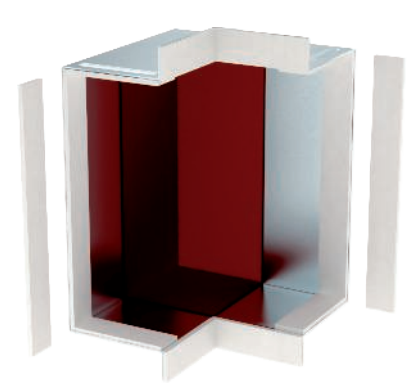
Support profile for suspended mounting of BSKM 1025, suitable as a suspension point to accept two M10 threaded rods and as the counter bearing to seal the joint, including nuts.



Dimensions



External corner

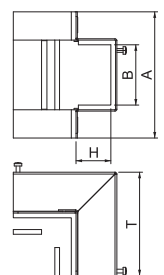


Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-AE 1025RW	250	100	Pure white	1	214.700	7216636

- St Steel
- L Painted

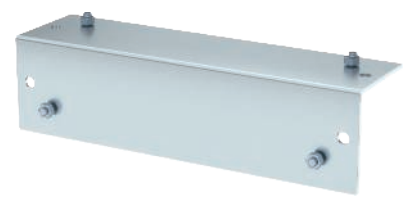
Fitting hood to cover two BSKM 1025 duct ends as external cover for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate.

Dimensions



Type	Dimension T mm	Dimension A mm
BSKM-AE 1025RW	200	314

Lock plate for external corner

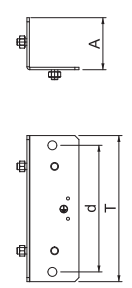


Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GA 1025RW	360	95	336	Pure white	1	160.800	7216637

- St Steel
- L Painted

Adapter plate for suspended mounting of the external corner hood BSKM-AE 1025, with acceptance option for M10 threaded rods, including nuts.

Dimensions



Internal corner

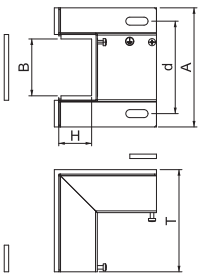
Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-IE 1025RW	250	100	Pure white	1	157.600	7216640
St Steel						
L Painted						

Fitting hood to cover two BSKM 1025 duct ends as internal cover for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-IE 1025RW	165	314	284

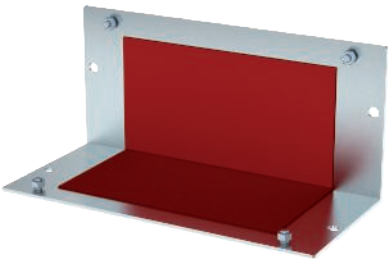
Dimensions



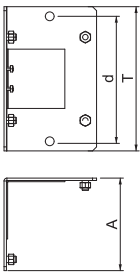
Lock plate for internal corner

Type	Dimension T mm	Dimension A mm	Dimension d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GI 1025RW	360	165	336	Pure white	1	275.800	7216641
St Steel							
L Painted							

Adapter plate for suspended mounting of the internal corner hood BSKM-IE 1025, with acceptance option for M10 threaded rods, including nuts.



Dimensions



Fire protection duct PYROLINE® Rapid - BSKM 1025

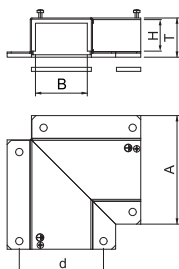
Flat angle



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-FW 1025RW	250	100	Pure white	1	289.800	7216638
St Steel						
L Painted						

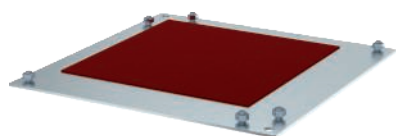
Fitting hood to cover two BSKM 1025 duct ends as flat angle for direct wall and ceiling mountings. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-FW 1025RW	108	349	284

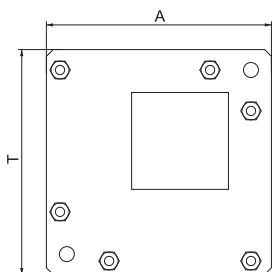
Lock plate for flat angle



Type	Dimension T mm	Dimension A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GF 1025RW	350	350	Pure white	1	307.700	7216639
St Steel						
L Painted						

Adapter plate for suspended mounting of the flat angle hood BSKM-FW 1025, with acceptance option for M10 threaded rods, including nuts.

Dimensions

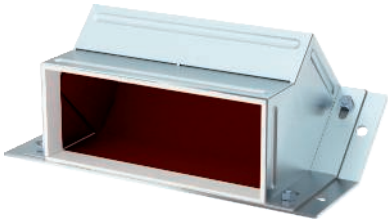


45° vertical bend, rising

Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-ES 1025RW	250	100	Pure white	1	282.900	7216642

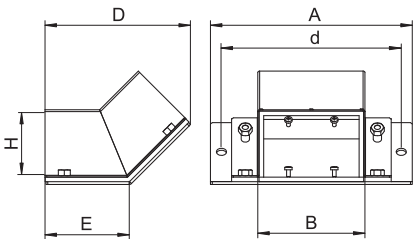
- Sl Steel
- L Painted

Rising vertical bend for creation of vertical jumps for suspended mounting of the BSKM 1025, with acceptance option for M10 threaded rods, including seals and nuts as well as screws for equipo-
tential bonding.



Type	Dimen- sion A mm	Dimen- sion D mm	Dimen- sion d mm	Dimen- sion E mm
BSKM-ES 1025RW	360	176	284	102

Dimensions



45° vertical bend, falling

Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-EF 1025RW	250	100	Pure white	1	242.400	7216643

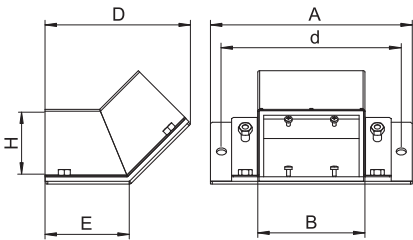
- Sl Steel
- L Painted

Falling vertical bend for creation of vertical jumps for suspended mounting of the BSKM 1025, with acceptance option for M10 threaded rods, including seals and nuts as well as screws for equipo-
tential bonding.

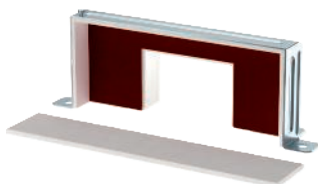


Type	Dimen- sion A mm	Dimen- sion D mm	Dimen- sion d mm	Dimen- sion E mm
BSKM-EF 1025RW	360	171	284	99

Dimensions



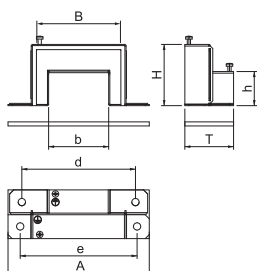
Reducing piece



Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-RE 1025RW	250	100	Pure white	1	73.200	7216631
St Steel						
L Painted						

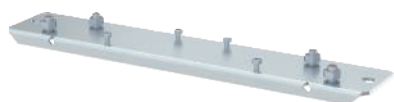
Fitting hood to cover a symmetrical reduction on a straight stretch of BSKM 1025 to BSKM 0711. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

Dimensions



Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion d mm	Dimen- sion e mm
BSKM-RE 1025RW	70	110	61	314	220	284

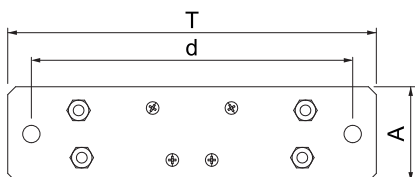
Lock plate reducing piece



Type	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion d mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-RG 1025RW	360	67	336	Pure white	1	73.200	7216632
St Steel							
L Painted							

Adapter plate for suspended mounting of a symmetrical BSKM-RE 1025 reducing piece, with acceptance option for M10 threaded rods, including nuts.

Dimensions



T branch hood

Type	Dimen- sion B mm	Dimen- sion H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-TA 1025RW	250	100	Pure white	1	263.100	7216645

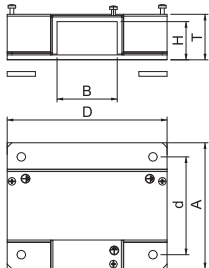
- St Steel
- L Painted

Hood for covering of three BSKM 1025 duct ends running towards each other in a T shape. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.



Type	Dimen- sion T mm	Dimen- sion A mm	Dimen- sion D mm	Dimen- sion d mm
BSKM-TA 1025RW	108	314	350	284

Dimensions

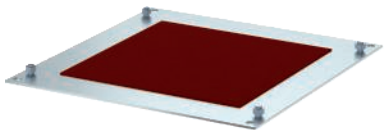


Lock plate, T branch piece

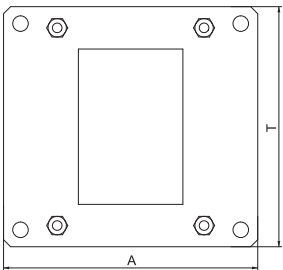
Type	Dimen- sion T mm	Dimen- sion A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GT 1025RW	360	350	Pure white	1	313.000	7216646

- St Steel
- L Painted

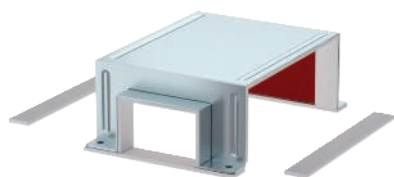
Adapter plate for suspended mounting of a BSKM-TA 1025 T branch, with acceptance option for M10 threaded rods, including nuts.



Dimensions



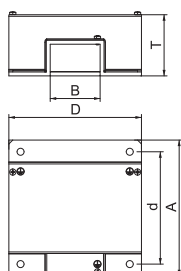
T reducing branch piece



Type	Dimension B mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-TR 1025RW	110	Pure white	1	153.200	7216647
St Steel					
L Painted					

Hood for the covering of three duct ends running towards each other in a T shape. Straight stretch, twice BSKM 1025, branch reduced to BSKM 0711. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension D mm	Dimension d mm
BSKM-TR 1025RW	108	314	210	284

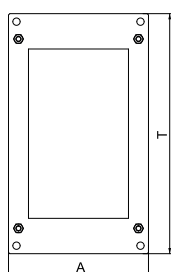
Lock plate, T reducing branch piece



Type	Dimension T mm	Dimension A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GR 1025RW	360	210	Pure white	1	189.000	7216649
St Steel						
L Painted						

Adapter plate for suspended mounting of a BSKM-TR 1025 T reducing branch, with acceptance option for M10 threaded rods, including nuts.

Dimensions



T reducing branch piece

Type	Dimension B mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-TRK 1025RW	70	Pure white	1	196.000	7216648

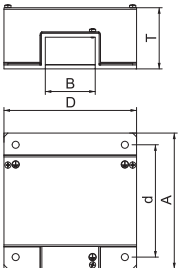
- St Steel
- L Painted

Hood for the covering of three duct ends running towards each other in a T shape. Straight stretch, twice BSKM 1025, branch reduced to BSKM 0407. Including glued-in seals for closing the joints and loose seals when combining with lock plate; screws for equipotential bonding also included.



Type	Dimension T mm	Dimension A mm	Dimension D mm	Dimension d mm
BSKM-TRK 1025RW	108	314	170	284

Dimensions



Lock plate, T reducing branch piece

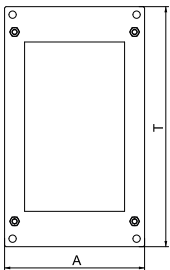
Type	Dimension T mm	Dimension A mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GRK 1025RW	360	170	Pure white	1	153.000	7216650

- St Steel
- L Painted

Adapter plate for suspended mounting of a BSKM-TRK 1025 T reducing branch, with acceptance option for M10 threaded rods, including nuts.

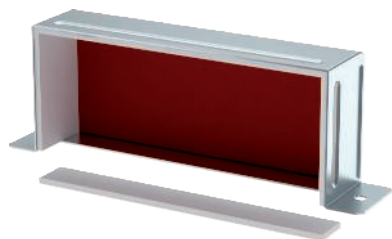


Dimensions



Fire protection duct PYROLINE® Rapid - BSKM 1025

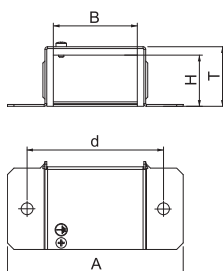
End piece



Type	Dimension B mm	Dimension H mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-VK 1025RW	250	100	Pure white	1	106.400	7216644
St Steel						
L Painted						

For smoke-tight end closure of the BSKM 1025 duct for direct wall and ceiling mounting, in connection with the support profile BSKM-AD 1025, even for suspended mounting. Including glued-in seals to close the joints and loose seal when combined with a support; screw for equipotential bonding also included.

Dimensions



Type	Dimension T mm	Dimension A mm	Dimension d mm
BSKM-VK 1025RW	105	314	284

Wall connection I120

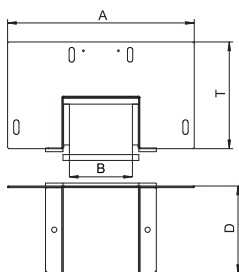


Type	Dimension B mm	Dimension T mm	Dimension A mm	Dimension D mm	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-WA 1025RW	250	213	460	150	Pure white	1	408.500	7216654
St Steel								
L Painted								

Frame as additional insulation in the area of the wall transition for direct wall and ceiling mounting of the BSKM 1025. Including screen and glued-in seals to close the joints and loose seal when combined with a support; with screw for equipotential bonding.

Only needed for I120 requirements.

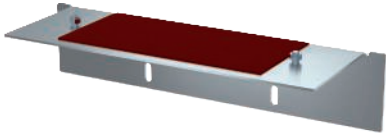
Dimensions



Lock plate for wall connection I120

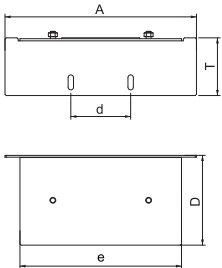
Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKM-GW 1025RW	Pure white	1	259.500	7216655
Sl	Steel			
L	Painted			

Adapter plate for suspended mounting of the wall connection BSKM-WA 1025, with acceptance option for M10 threaded rods, including nuts.



Type	Dimension A mm	Dimension D mm	Dimension T mm	Dimension e mm	Dimension d mm
BSKM-GW 1025RW	460	150	96	406	180

Dimensions



Cable gland, metric thread



Type	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM12 MS	M12 x 1,5	50	1.200	2086018
V-TEC VM16 MS	M16 x 1,5	50	1.640	2086024
V-TEC VM20 MS	M20 x 1,5	25	3.140	2086030
V-TEC VM25 MS	M25 x 1,5	25	4.260	2086036
V-TEC VM32 MS	M32 x 1,5	20	7.160	2086042
V-TEC VM40 MS	M40 x 1,5	5	12.240	2086048
V-TEC VM50 MS	M50 x 1,5	5	22.700	2086054

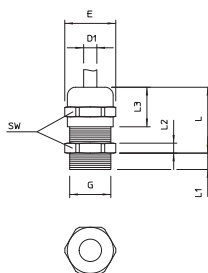
CuZn Brass

N Nickel-plated

With metric connecting thread to IEC 423, robust cap-nut cable gland with large sealing area. Strain relief, wringing protection and tightness over the whole clamping area. Neoprene sealing ring. Polyamide terminal insert. With pre-mounted O sealing ring on connection thread, VDE-tested to DIN EN 50262, protection rating IP68 at 5 bar for 1 hr, max. permitted ambient temperature - 20 - 100°C.

* Prices according to DEL notation.

Dimensions



G	D1	SW	E	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm
M12 x 1.5	3-6	14	15.5	20	5	11.5	3
M16 x 1.5	5-9	17	19	24	5	15	3
M20 x 1.5	9-13	22	24	27	6	16.5	3.5
M25 x 1.5	11-16	27	30	29.5	7		
M32 x 1.5	14-21	34	36	30	8	18.5	4.5
M40 x 1.5	19-27	43	46	33	8	21	4.5
M50 x 1.5	24-35	55	60	38.5	9	25	4.5

Locknut, metric thread



Type	Thread	SW mm	Dimen- sion E mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
169 MS M12	M12 x 1,5	15	16.6	3	100	0.220	2091607
169 MS M16	M16 x 1,5	20	22.1	2.8	100	0.310	2091615
169 MS M20	M20 x 1,5	24	25.6	3	100	0.580	2091623
169 MS M25	M25 x 1,5	30	33.2	3.5	100	0.880	2091631
169 MS M32	M32 x 1,5	35	38.7	4	100	1.120	2091658
169 MS M40	M40 x 1,5	45	49.8	4.5	50	1.920	2091666
169 MS M50	M50 x 1,5	55	60.4	5.5	50	3.070	2091674

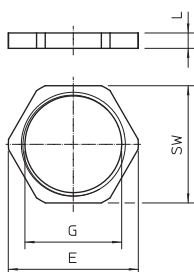
CuZn Brass

N Nickel-plated

Locknuts DIN 46319 with metric thread IEC 423.

* Prices according to DEL notation.

Dimensions

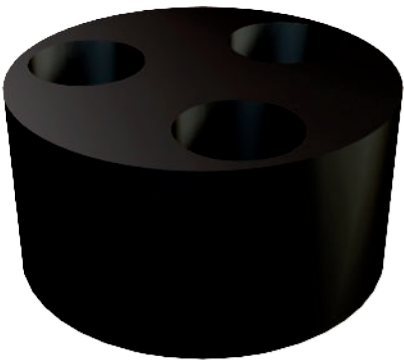


Multiple sealing insert, metric

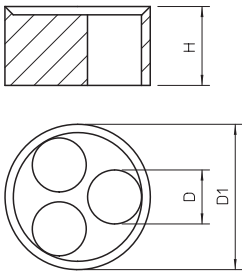
Type	Size mm	Dimen- sion D mm	Dimen- sion H mm	Dimen- sion D1 mm	Number of drill holes	Pack. pcs	Weight kg/100 pcs.	Item No.
107 C VM 20 2x4	M20	4	8.1	15.1	2	50	0.130	2029672
107 C VM 20 4x5	M20	5	8.1	15.1	4	50	0.080	2029675
107 C VM 20 2x6	M20	6	8.1	15.1	2	50	0.100	2029677
107 C VM 25 5x4	M25	4	10	19.8	5	50	0.180	2029679
107 C VM 25 3x6	M25	6	10	19.8	3	50	0.210	2029682
107 C VM 25 2x6	M25	6	10	19.8	2	50	0.260	2029685
107 C VM 25 3x7	M25	7	10	19.8	3	50	0.180	2029688
107 C VM 25 2x8	M25	8	10	19.8	2	50	0.200	2029690
107 C VM 32 2x8	M32	8	13.4	25.1	2	25	0.530	2029693
107 C VM 32 4x8	M32	8	13.4	25.1	4	25	0.400	2029696

NBR-SBR Rubber mixture

Use to insert multiple thin cables in the V-TEC VM cable glands, is replaced with the simple sealing ring of the cable gland.



Dimensions

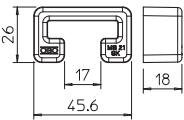


Protective cap MS4121

Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
MS4121 SK	Pastel orange	25	0.650	1122902

PE Polyethylene

Protective caps for profile rail, type MS4121.



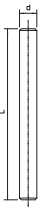
Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



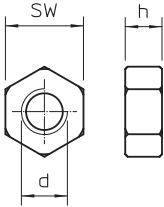
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



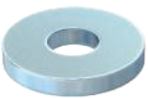
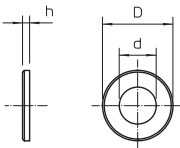
Washer ISO 7093

Type	Thread	Dimen- sion d mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D28 G	M10	11	28	2.5	100	1.020	3402223

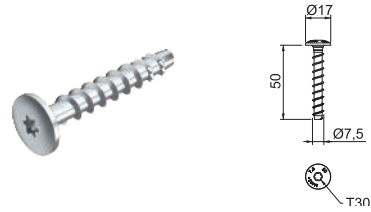
St Steel

G Electrogalvanised

Washer of large outer diameter for universal use.



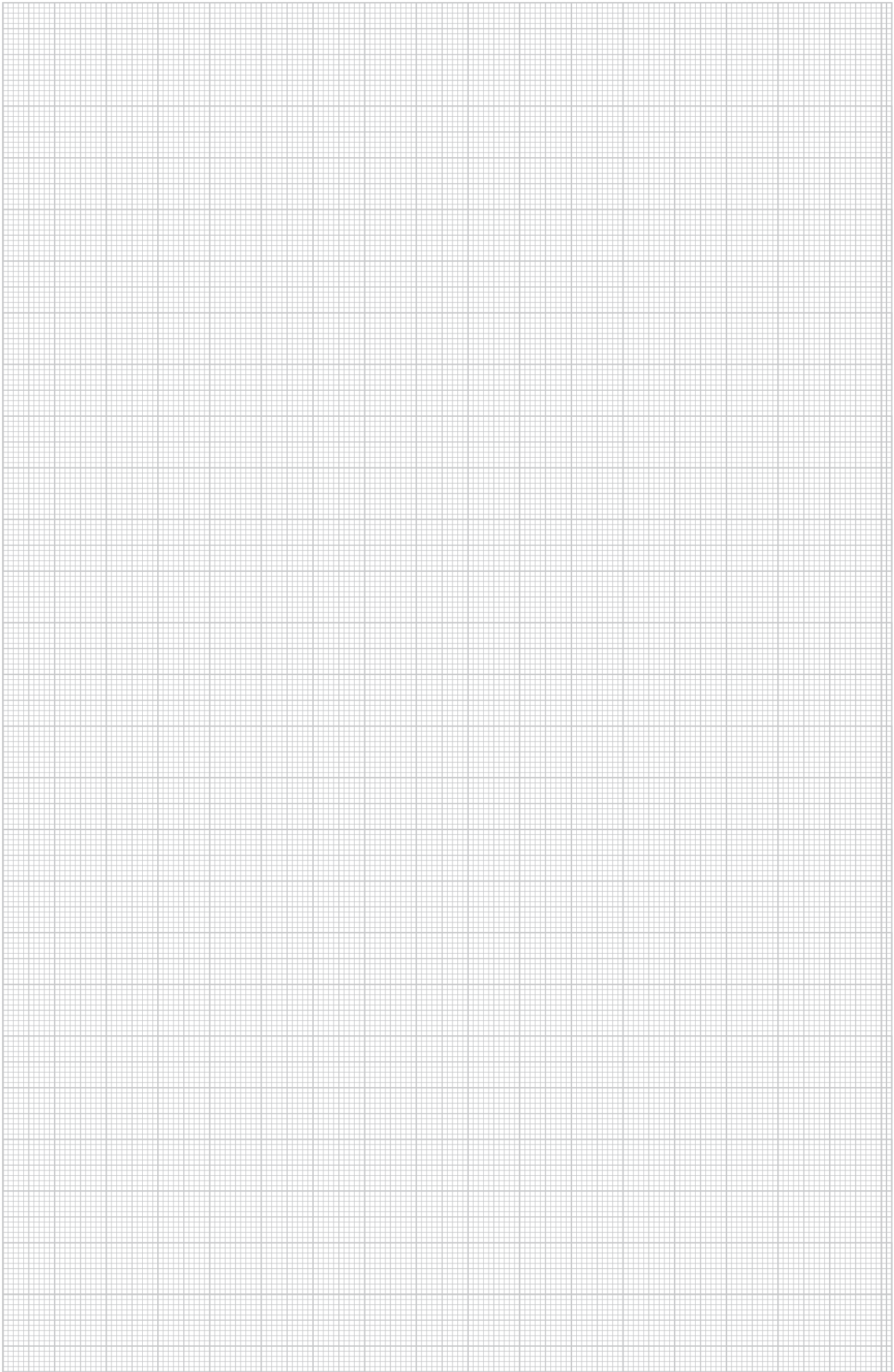
Fire protection screw tie



Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	50	6	17	Torx	100	1.500	3498261

- St Steel
- G Electrogalvanised

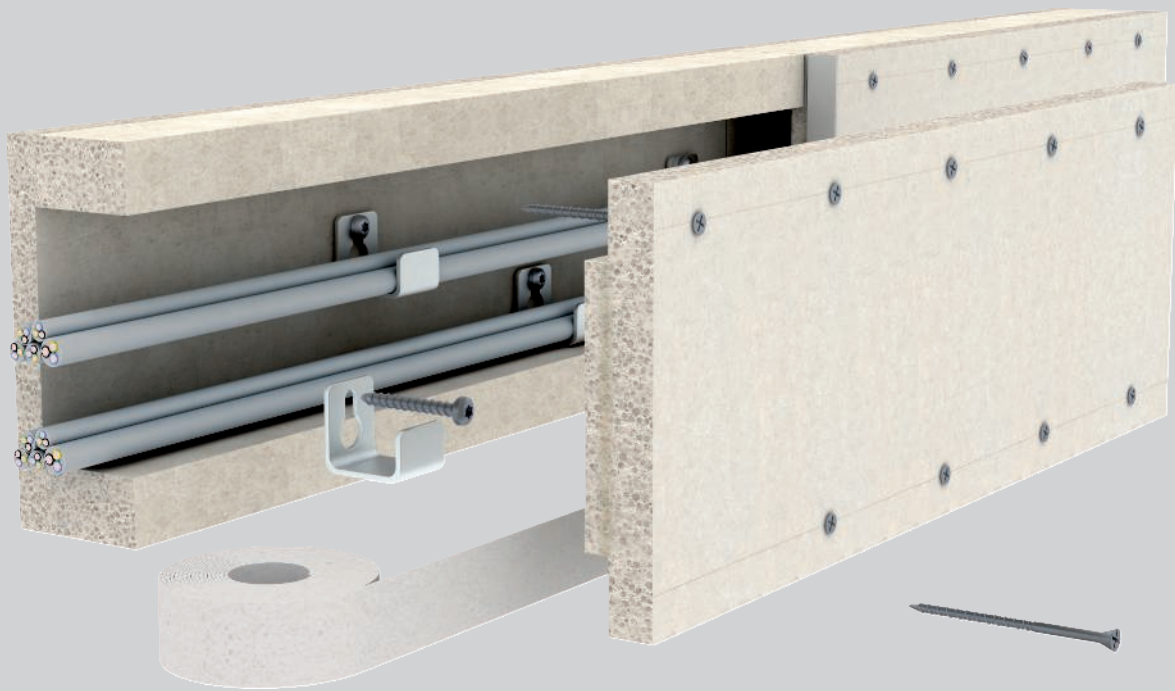
Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.



PYROLINE® Con D

Fire protection duct for direct wall and ceiling mounting

System description



The PYROLINE® Con D fire protection duct consists of fibreglass light concrete fire protection plates which are resistant to water and frost. The fire protection plates, which are classed as non-combustible (material class A1), have a compacted surface, which is hard, smooth and wear-resistant. The OBO PYROLINE® Con D is used as an I duct to protect escape and rescue routes against the effects of a possible cable fire. This means that the escape and rescue

routes remain free from fire, smoke and heat. As an E duct, PYROLINE® Con D allows the maintenance of electrical functionality of the safety-relevant circuits. The fire protection duct is mounted directly on solid walls and ceilings. Possibly necessary fittings can be created simply and flexibly on-site according to requirements. The fire protection ducts can be painted or papered over, as required.

PYROLINE® Con D

Fire protection duct for direct wall and ceiling mounting

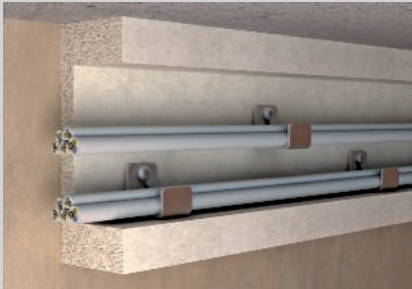
Installation principle



Mounted fire protection duct on wall and ceiling as I and E duct.



Flexible duct routing through individually creatable fittings.



Retaining profile and retaining clamp as mounting aid for cable insertion.



Cable fastening for vertical duct mounting with clips.



Closing surface treatment through painting or papering.



Minor damage can be eliminated at any time.

Classification according to DIN 4102 part 11 and part 12

I90

I120

E30

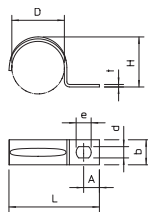
E90

Installation duct made of fibreglass reinforced lightweight concrete

Fire resistance class	I90 and I120 Installation in escape routes	E30 and E90 Maintenance of electrical functionality
Proof of application	General construction test certificate of the materials testing institute iBMB MPA Braunschweig	General construction test certificate of the materials testing institute iBMB MPA Braunschweig
Approval number	P-3109/0998-MPA BS	P-3320/381/14-MPA BS
Testing standard	DIN 4102 Part 11	DIN 4102 Part 12

The data in the named proofs of applicability applies.

Fastening clip 604, light-duty



Type	For Ø mm	Hole size mm	Material thickness mm	Pack. pcs	Weight kg/100 pcs.	Item No.
604 3 G	3	4,5 x 6	0.7	100	0.052	1003038
604 4 G	4	4,5 x 6	0.7	100	0.067	1003046
604 5 G	5	4,5 x 6	0.7	100	0.084	1003054
604 6 G	6	4,5 x 6	0.7	100	0.099	1003062
604 7 G	7	4,5 x 6	0.7	100	0.120	1003070
604 8 G	8	4,5 x 6	0.7	100	0.123	1003089
604 9 G	9	4,5 x 6	0.7	100	0.139	1003097
604 10 G	10	4,5 x 6	0.7	100	0.150	1003100
604 11 G	11	4,5 x 6	1	100	0.270	1003119
604 12 G	12	4,5 x 6	0.7	100	0.240	1003127
604 13 G	13	4,5 x 6	1	100	0.280	1003135
604 16 G	16	4,5 x 6	1	100	0.348	1003178
604 19 G	19	4,5 x 6	1	100	0.411	1003194
604 20 G	20	4,5 x 6	1	100	0.431	1003208
604 21 G	21	4,5 x 6	1	100	0.447	1003216
604 23 G	23	4,5 x 6	1	100	0.490	1003232
604 25 G	25	4,5 x 6	1	100	0.900	1003259
604 28 G	28	4,5 x 6	1	100	0.874	1003283
604 32 G	32	4,5 x 6	1	100	1.462	1003321
604 35 G	35	5,5 x 7	1.5	100	1.355	1003356
604 37 G	37	5,5 x 7	1.5	100	1.567	1003372
604 40 G	40	5,5 x 7	1.5	100	1.860	1003402
604 47 G	47	5,5 x 7	1.5	50	2.484	1003461

St Steel

G Electrogalvanised

Single-lobe fastening clip for cables and pipes.

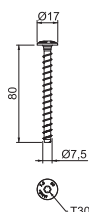
* Sizes 3 and 4 are not suitable for nail device

* Sizes 3 to 21 are not suitable for bolt-firing tool

Dimensions

D mm	L mm	H mm	b mm	t mm	d mm	e mm	A mm
3	12	2.4	7	0.7	4.5	6	4
4	14	3.3	7	0.7	4.5	6	4
5	16.5	4.5	7	0.7	4.5	6	5
6	17.5	5.2	8	0.7	4.5	6	5
7	19.5	6.5	8	0.7	4.5	6	5
8	21	7	8	0.7	4.5	6	5.5
9	21.5	8	8	0.7	4.5	6	5.75
10	22	9	8	0.7	4.5	6	5
11	24	10	10	1	4.5	6	5.5
12	27	11	10	0.7	4.5	6	6.5
13	27	11.5	10	1	4.5	6	6
16	31	14.5	10	1	4.5	6	6.5
19	33	17	10	1	4.5	6	6.5
20	35	18	10	1	4.5	6	6.3
21	36	19	10	1	4.5	6	6.3
23	39	21.5	10	1	4.5	6	7
25	41.3	23	15	1	4.5	6	7
28	45	24.8	15	1	4.5	6	7
32	48.8	30	15	1.5	5.5	7	8
35	54	30	14	1.5	5.5	7	8.75
37	56	34	14	1.5	5.5	7	7.5
40	63	38	14	1.5	5.5	7	10.5
47	69	43.8	14	1.5	5.5	7	10

Bolt tie



Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	80	6	13.2	Torx	50	1.600	3498272

St Steel

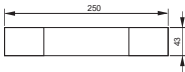
G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Identification plate for function maintenance

Type	Language	Pack.		Weight		Item No.
		pcs	kg/100 pcs.	pcs	kg/100 pcs.	
KS-E EN	English	10	0.600			7205432
PVC	Polyvinylchloride					

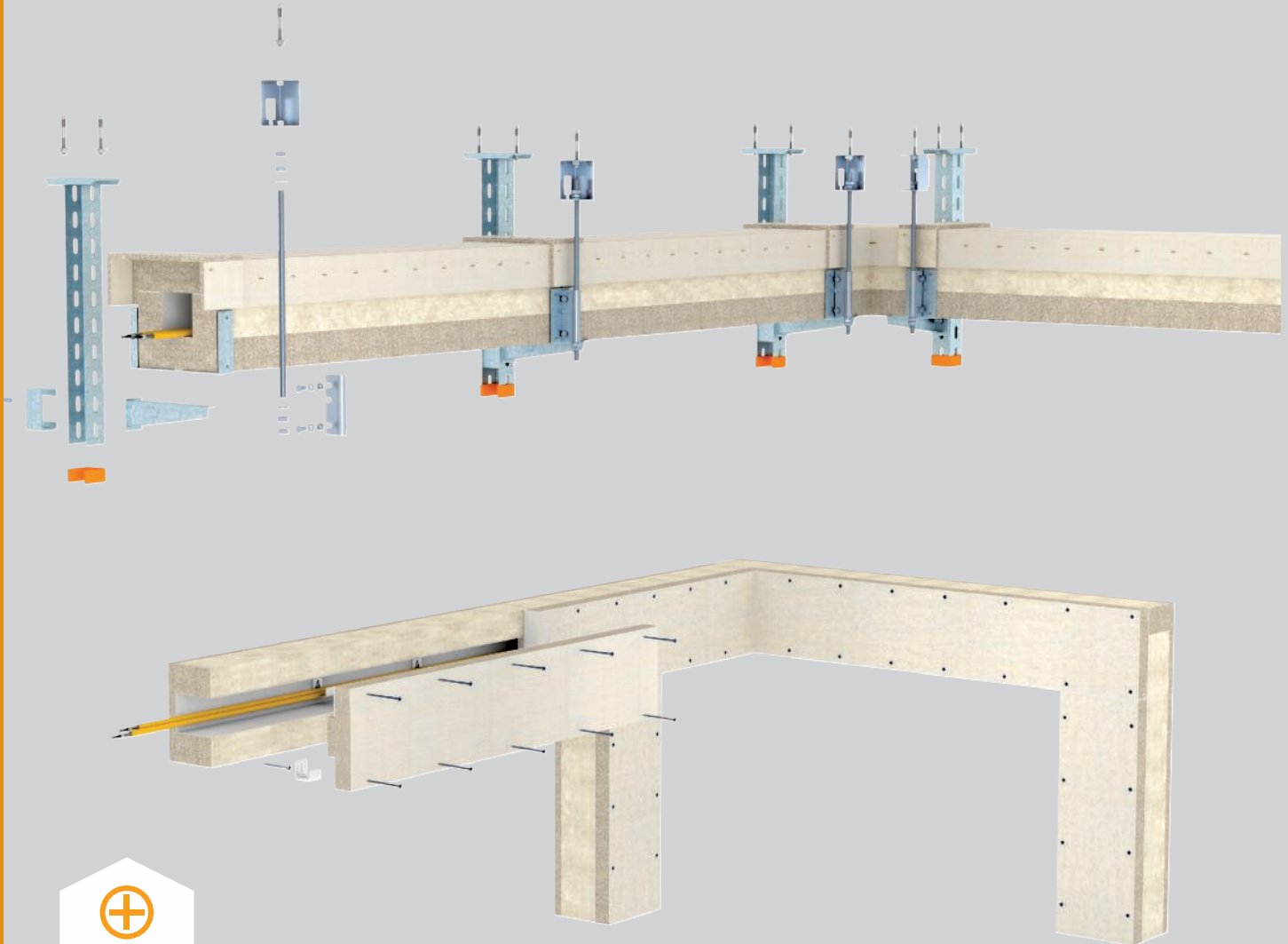
Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



PYROLINE® Fibre Optics

Fire protection duct for suspended mounting

System description



Communication systems must continue to function even if there is a fire. Increasingly often, they are equipped with fibre optic cables, in order to process large data volumes securely. In industrial systems too, optical data transmission systems are used for process control. In the case of a fire, the processes must be ended in a controlled fashion, in order to prevent damage to people and the environment. For this reason, the fibre optic cables must be routed with

special protection in the event of fire.

Fibre optic cables cannot be evaluated according to the testing standard DIN 4102 Part 12, as the basic criteria only relate to copper conductors. The PYROLINE® Fibre Optics fire protection duct protects the fibre optic cables against an external fire for a period of 90 minutes. The achieved maintenance of electrical functionality class is "E 90".

PYROLINE® Fibre Optics

Fire protection duct for suspended mounting

Installation principle



Direct wall and ceiling mounting.



Wall mounting on brackets and additional threaded rod lock.



Suspended ceiling mounting with additional threaded rod lock.



Retaining profile as mounting aid for insertion of the fibre optic cables.



With direct mounting, flexible duct routing through individually creatable fittings.



Prefabricated fittings for direction changes with suspended mounting.

Classification according to DIN 4102 Part 12

E30

E60

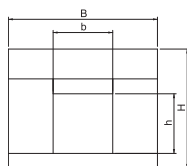
E90

Fire protection duct made of fibreglass reinforced lightweight concrete

Maintenance of electrical functionality class	E30 to E90
Proof of application	General construction test certificate of the materials testing institute iBMB MPA Braunschweig
Approval number	P-3320/381/14-MPA BS
Testing standard	DIN 4102 Part 12
Application with fibre optic cables	Surveyor's report no. GA-2017/012-Nau of Ingenieurbüro für Brandschutz von Bauarten, IBB
Mounting variants	Direct wall and ceiling mounting Suspended mounting

The data in the named proofs of applicability applies

Fire protection duct E90, internal height 80 mm

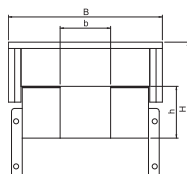


Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. m	Weight kg/100 m	Item No.
BSKF-0808	80	80	160	200	1000	1	2,050.000	7214800

Glass-fibre lightweight concrete

Fire protection duct for direct wall and ceiling mounting, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 in accordance with EN 13501 Part 1 for fireproof routing of fibre optic cables according to the maintenance of electrical function to DIN 4102 Part 12, classified for E30 and E90. Including 10 counter-sunk head screws and 3 x 1 m of sealing strips.

Fire-proofing duct E90, internal height 80 mm

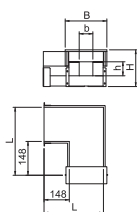


Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion H mm	Dimen- sion B mm	Length mm	Pack. m	Weight kg/100 m	Item No.
BSKHF-0808	80	80	200	200	1000	1	2,920.000	7214840

Glass-fibre lightweight concrete

Fire protection duct for suspended ceiling mounting consists of fibreglass light concrete according to EN 13501 part 1 (material class A1) which is resistant to water and frost. The fireproof duct serves to install fibre optic cables, classified for electrical the maintenance of electrical function according to DIN 4102 part 12 class E30 and E90. Including 12 x countersunk head screws and 3 x 1 m sealing strips.

90° bend, E90, internal height 80 mm

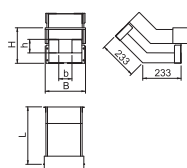


Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-FB0808	80	80	200	248	352	1	1,520.000	7214852

Glass-fibre lightweight concrete

90° bend in horizontal direction for fire protection duct BSKHF-0808, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501 Part 1, for installation on OBO mounting systems. Including mounted connector on both duct ends, connecting bolts and sealing strip. Fittings must be supported by additional brackets.

45° vertical bend, rising, E90, internal height 80 mm

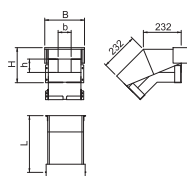


Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-ES0808	80	80	200	248	398	1	1,200.000	7214858

Glass-fibre lightweight concrete

Vertical bend, 45° rising, for fire protection duct BSKHF-0808, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501 Part 1, for installation on OBO mounting systems. Including mounted connector on both duct ends, connecting bolts and sealing strip. Fittings must be supported by additional brackets.

45° vertical bend, falling, E90, internal height 80 mm



Type	Dimen- sion h mm	Dimen- sion b mm	Dimen- sion H mm	Dimen- sion B mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-EF0808	80	80	200	248	276	1	1,250.000	7214858

Glass-fibre lightweight concrete

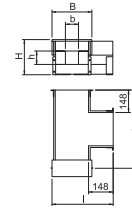
Vertical bend, 45° falling, for fire protection duct BSKHF-0808, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501 Part 1, for installation on OBO mounting systems. Including mounted connector on both duct ends, connecting bolts and sealing strip. Fittings must be supported by additional brackets.

T piece E90, internal height 80 mm

Type	Dimension h mm	Dimension b mm	Dimension H mm	Dimension B mm	Dimension L mm	Dimension I mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-FT0808	80	80	200	248	500	352	1	1,930.000	7214854

Glass-fibre lightweight concrete

T piece for fire protection duct BSKHF-0808, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501 Part 1, for installation on OBO mounting systems. Including mounted connector on all duct ends, connecting bolts and sealing strip. Fittings must be supplied by additional brackets.



Wall connection collar BSKHF, E90, internal height 80 mm

Type	Length mm	Width mm	Height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-WA0808	1250	70	60	1	400.000	7214862

Glass-fibre lightweight concrete

Wall connection collar for fire protection duct BSKHF-0808, consisting of water and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501 Part 1, for doubling insulation on wall connections. Including counter-sunk head screws and sealing strip.

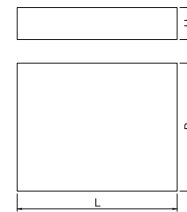


End piece BSKF, E90, internal height 80 mm

Type	Dimension L mm	Dimension H mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKF-E0808	200	60	160	1	150.000	7214810

Glass-fibre lightweight concrete

End piece for fire protection duct BSKF-0808 consists of fibreglass light concrete according to EN 13501 part 1 (material class A1). Including countersunk head screws and sealing strips.

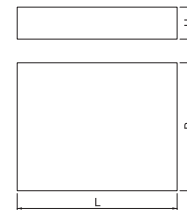


End piece BSKHF, E90, internal height 80 mm

Type	Dimension L mm	Dimension H mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BSKHF-E0808	200	60	200	1	180.000	7214860

Glass-fibre lightweight concrete

End piece for fire protection duct BSKHF-0808 consists of fibreglass light concrete according to EN 13501 part 1 (material class A1). Including countersunk head screws and sealing strips.



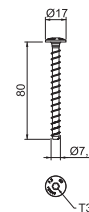
Bolt tie

Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	80	6	13.2	Torx	50	1.600	3498272

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

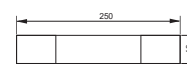


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



PYROLINE® Sun PV

Concrete photovoltaic duct for direct and suspended mounting

System description



The PYROLINE® Sun PV fire protection duct is the ideal fire protection duct for fireproof routing of photovoltaic DC cables. If there is a fire, its non-conductive surface ensures protection against dangerous contact voltages. In addition, the duct fulfils the requirements as an I duct according to DIN 4102 Part 11 for cable installations in emergency and escape routes. In addition, it meets the requirements of the VDE application

rule AR 2100-712. The fire protection duct can be installed directly on the wall or the ceiling. The appropriate connection armatures mean that suspended mounting is also possible. The duct is made of water and frost-resistant glass fibre lightweight concrete fire protection plates (non-combustible, material class A1), meaning that it is suitable for external areas.



PYROLINE® Sun PV
Concrete photovoltaic duct for direct and suspended mounting
Installation principle



Direct wall and ceiling mounting.



Flexible duct routing through individually creatable fittings.



Can be painted or papered over, to permit discreet integration in the building.



Suspended mounting on the connector elements.



Contact protection begins directly with the converter.



Labelling according to the VDE application rule.

Classification according to DIN 4102 Part 11

I30

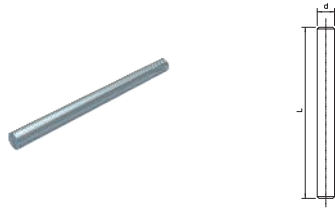
Installation duct made of fibreglass reinforced lightweight concrete

Fire resistance class	I30 Installation in escape routes
Proof of application	General construction test certificate of the materials testing institute iBMB MPA Braunschweig
Approval number	P-3109/0998-MPA BS
Testing standard	DIN 4102 Part 11
Photovoltaic application	According to VDE application rule for fireproof routing of PV-DC cables

The data in the named proofs of applicability applies.

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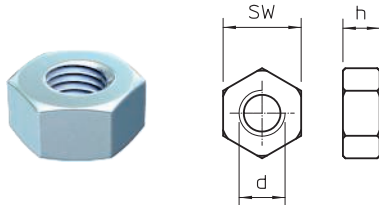
Threaded rod



Type	Thread	Dimension d mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209
St Steel						
G Electrogalvanised						

Threaded rod to DIN 976.

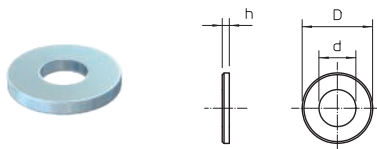
Hexagonal nut DIN 934



Type	Thread	SW mm	Dimension h mm	Dimension d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107
St Steel							
G Electrogalvanised							

Hexagonal nut to DIN 934 with metric thread.

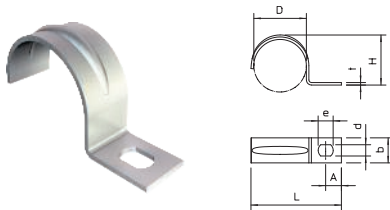
Washer



Type	Thread	Dimension d mm	Dimension D mm	Dimension h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
St Steel							
G Electrogalvanised							

Washer according to DIN 125, shape A, for universal use.

Fastening clip 604, light-duty



Type	For Ø mm	Hole size mm	Material thickness mm	Pack. pcs	Weight kg/100 pcs.	Item No.
604 4 G	4	4,5 x 6	0.7	100	0.067	1003046
604 5 G	5	4,5 x 6	0.7	100	0.084	1003054
604 6 G	6	4,5 x 6	0.7	100	0.099	1003062
604 7 G	7	4,5 x 6	0.7	100	0.120	1003070
604 8 G	8	4,5 x 6	0.7	100	0.123	1003089
604 9 G	9	4,5 x 6	0.7	100	0.139	1003097
604 10 G	10	4,5 x 6	0.7	100	0.150	1003100
St Steel						
G Electrogalvanised						

Single-lobe fastening clip for cables and pipes.

* Sizes 3 and 4 are not suitable for nail device

* Sizes 3 to 21 are not suitable for bolt-firing tool

Dimensions

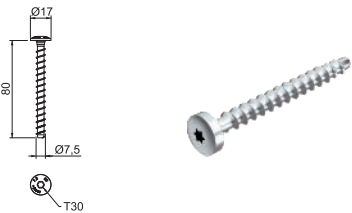
D mm	L mm	H mm	b mm	t mm	d mm	e mm	A mm
4	14	3.3	7	0.7	4.5	6	4
5	16.5	4.5	7	0.7	4.5	6	5
6	17.5	5.2	8	0.7	4.5	6	5
7	19.5	6.5	8	0.7	4.5	6	5
8	21	7	8	0.7	4.5	6	5.5
9	21.5	8	8	0.7	4.5	6	5.75
10	22	9	8	0.7	4.5	6	5

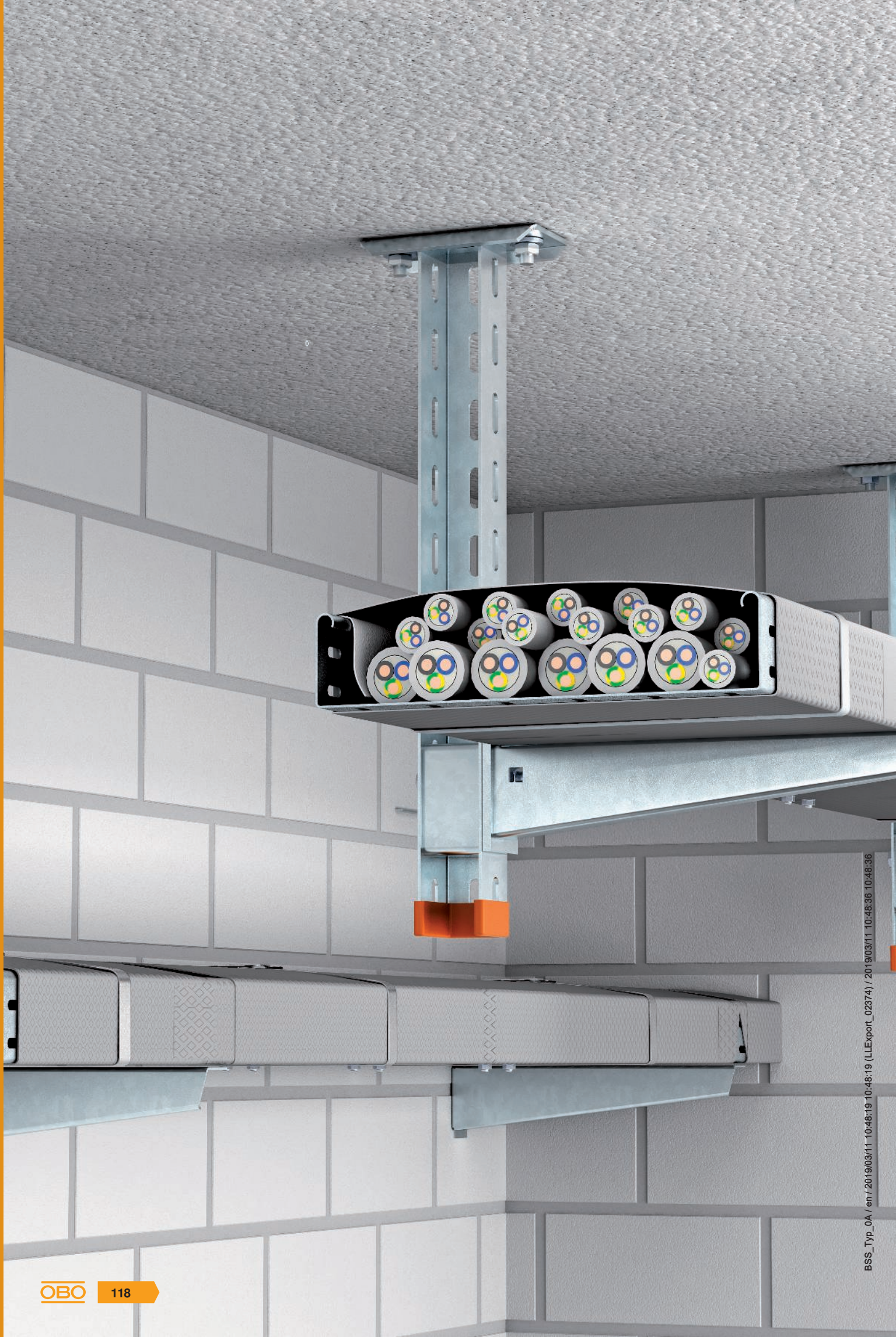
Bolt tie

Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	80	6	13.2	Torx	50	1.600	3498272

- St Steel
- G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.







Cable bandages

	System description, PYROWRAP® Wet FSB-WLS	120
	System description, PYROWRAP® Wet FSB-WB	122
	Products	124

PYROWRAP® Wet FSB-WLS

Application in interior areas and wet rooms

System description



The PYROWRAP® Wet FSB-WLS system can be used to wrap large cable bundles or cable support systems within the fire sections, in order to prevent the spread of a fire. The mesh possesses a fire protection coating, which stops a fire in its tracks at an early stage, e.g. in the case of a short circuit. If there is fire coming in from the outside, the material is not involved in the course of the fire, effectively preventing the spread of the fire, both in vertical and horizontal directions.

In the escape and rescue routes of small buildings, the mounting of a cable bandage is permitted, as only low smoke development is to be expected and only a small number of people must be evacuated. In larger buildings, the residual risk of smoke development is accepted, even if considerably more people must be evacuated. Here, the fire protection bandage frequently presents the only economic solution compared to fire protection ceilings or panelling with plate materials.

Installation principle



Bandage fastening with metallic rails in a single-clip installation.



Bandaging of the cable bundles on support systems.

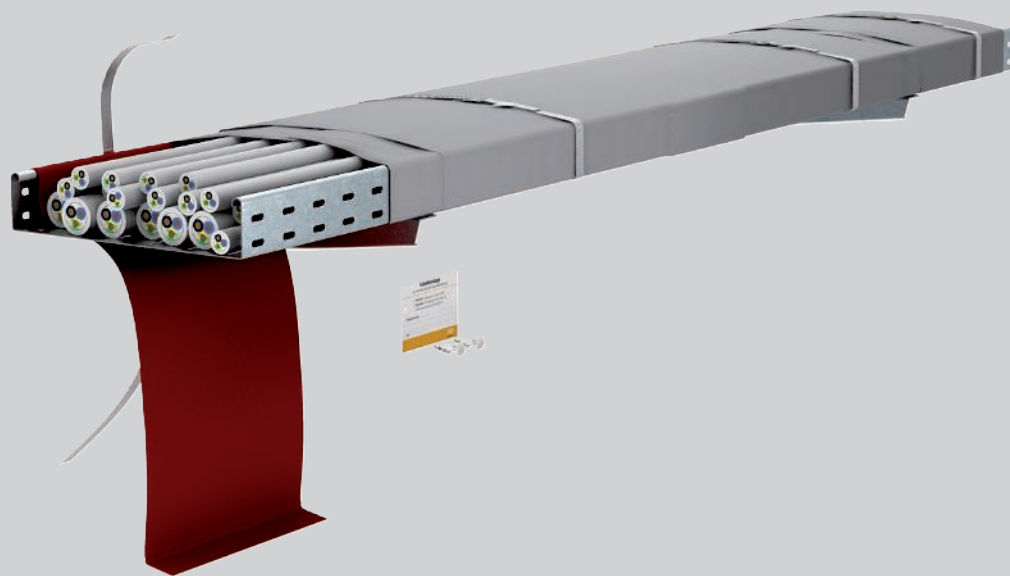
Proof of application	Application approval of DIBt Berlin Material approval of DIBt Berlin
Documents	Z-56.217-3600 Z-19.11-2183
Prevention of fire spread	min. 90 minutes
Material properties	Exterior grey glass fibre mesh, interior light grey materials class C-s2,d0 according to EN 13501-1 – hardly flammable
Max. fastening spacing	0.5 m
Cable types and cross-sections	No restriction

Use in emergency and escape routes of building classes 4 and 5 may require the approval of the construction supervision, e.g. through a fire protection concept.

PYROWRAP® Wet FSB-WB

Application in industrial areas / outdoors

System description



The PYROWRAP® Wet FSB-WB system comprises a fire protection bandage, which is used in areas with special environmental conditions. The fire protection bandage can be used to wrap large cable bundles or cable support systems, in order to prevent the spread of fire. The bandage is made of a weatherproof material, which is insensitive to various chemicals and oils.

It has construction approval from the DIBt as a highly flame-resistant material according to DIN EN 13501-1. When the fire protection coating foams up in the event of fire, this safely prevents the spread of fire via the cables.

PYROWRAP® Wet FSB-WB
Application in industrial areas / outdoors
Installation principle



Use of the bandage in aggressive environments, e.g. offshore.



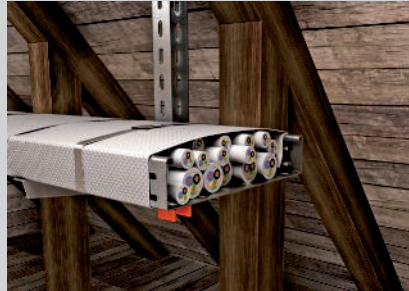
Bandaged rising section in the tower of a wind power plant.



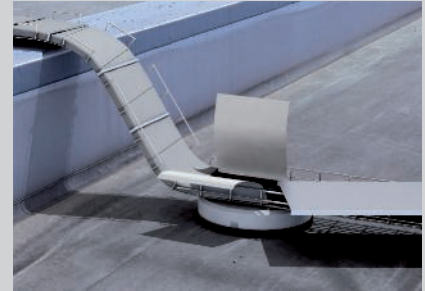
Use on support systems in supply rooms or production halls.



Cable tunnel with bandages in power stations.



Bandaged cable support systems in areas with many combustible materials.



Use for photovoltaic cables run over a fire wall.

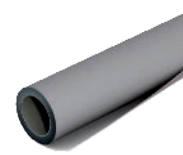
Cable jacketing to prevent fire spread

Proof of application	IEC test report of the iBMB MPA materials testing institute, Braunschweig National and European material approval of DIBt Berlin
Document no.	IEC-3630/081/10-AR Z-19.11-1971 ETA-13/0158
Prevention of fire spread	min. 120 minutes
Material properties	Exterior grey glass fibre mesh, interior red Materials class EN 13501-1: B1,d0,s1 – hardly flammable Weather-resistant, resistant to various chemicals and oils
Max. fastening spacing	0.5 m
Cable types and cross-sections	No restriction

Caution!

The use of photovoltaic cables over fire walls may require the approval of the local construction authorities. A positive special report is available.

Cable bandage for dry areas

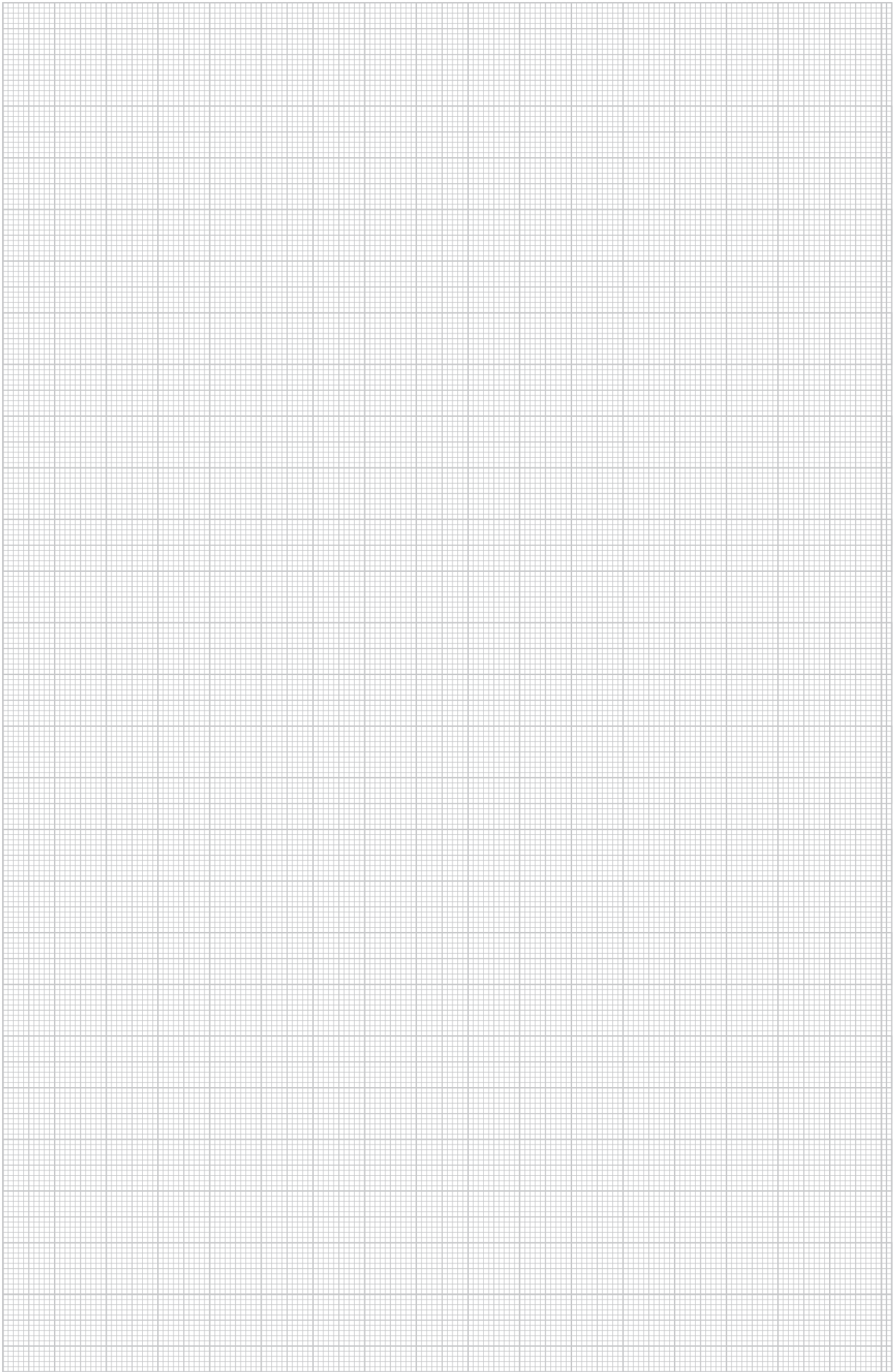


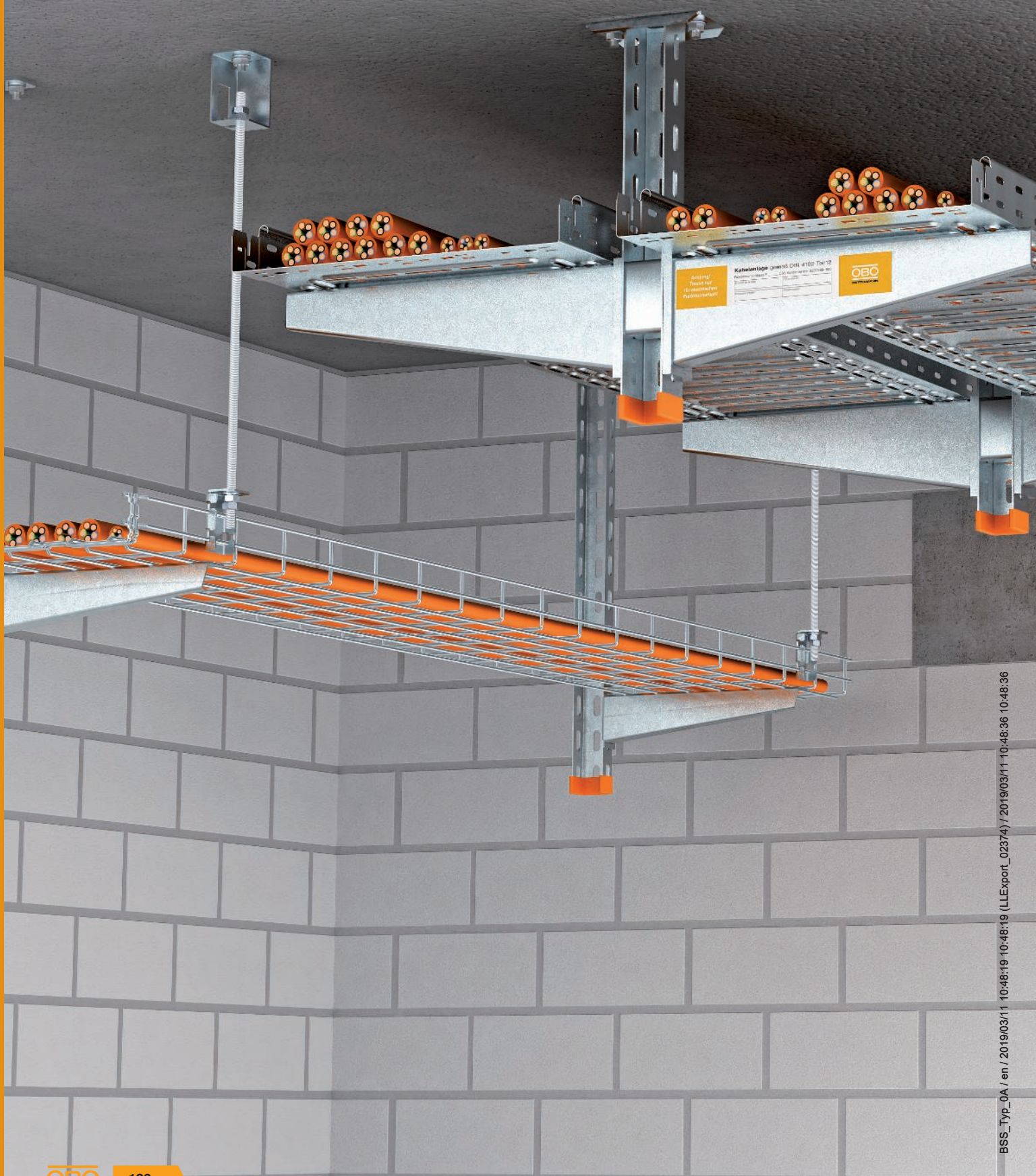
Type	Width	Length	Pack.		Weight	Item No.
	mm	mm	pcs	kg/100 pcs.		
FSB-WLS	1100	10000	1	1,000.000		7203170

Intumescent material

Fire protection jacketing made of flexible mesh with fire protection coating to prevent fire spreading via cables and cable support systems. If there is a fire, the bandage only creates very little smoke, and is thus approved by the MBO building regulations as a measure for improved behaviour in case of fire in building classes 1 to 3. Hardly-flammable substance, according to EN 13501-1 - Class C-s2, d0). External side grey, internal side light grey. Can be moist wiped, use in interiors and wet rooms. One roll contains 11 m², nominal thickness 0.7 mm.





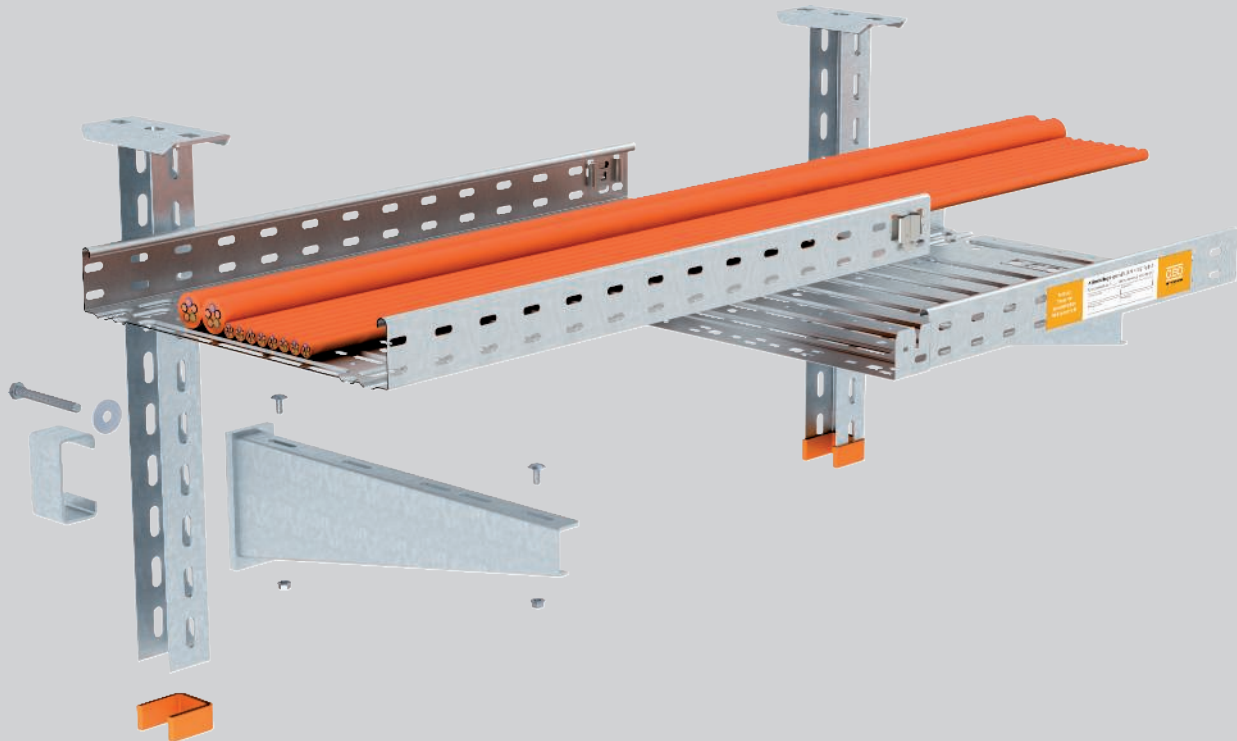


Maintaining electrical function– cable-specific support structures

	System description, RKS-Magic® cable tray	128
	System description, mesh cable tray GR-Magic®	132
	Products cable trays, mesh cable trays and mounting components	136
	System description, cable tray RKS-Magic® VA	146
	System description, mesh cable tray GR-Magic® VA	150
	Products cable trays, mesh cable trays and mounting components VA	154

Cable tray systems RKS-Magic®

System description



The RKS-Magic® cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. Threaded rod locking is not required at the tip of the bracket. This saves not just material but also considerably simplifies and speeds up the installation of cables. The screwless connection system allows interconnection of the RKS-Magic® cable trays without tools and in a particularly

quick and economic manner. To ensure the maintenance of electrical functionality, only the locking lugs in the base need to be bent after the trays have been connected. The double material thickness in the joint area and the beading in the base mean that the cable tray has a very high load capacity. The installation of fittings in the section route is permitted, as is the mounting of separating retainers.

Cable tray systems RKS-Magic®

Installation principle



Ceiling mounting on both sides with max. three layers (2+1).



One-sided arrangement with max. two layers.



Wall mounting.



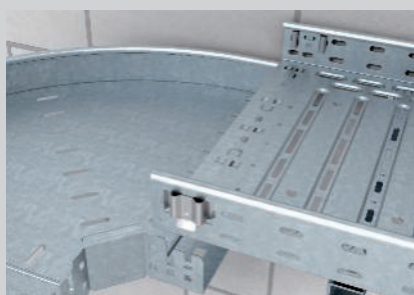
Creation of a straight connector through interconnection of the cable trays.



Bending the locking straps in the base.



Complete screwless joint connection.



Quick and simple fitting mounting with screwless Magic connection.



Separating retainer mounting with truss-head bolts.

Classification according to DIN 4102 Part 12

E30

E60

E90



Cable tray systems RKS-Magic®

Proof

Maintenance of electrical functionality system according to DIN 4102 Part 12

Routing type	Cable-specific support construction
Test certificate no.	P-MPA-E-13-002
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12
Mounting variant	Ceiling mounting with suspended support and bracket without threaded rod lock Wall mounting with bracket without threaded rod lock
Material version	Galvanised steel

Support spacing for ceiling mounting with suspended support/bracket

Cable tray width	Cable load per cable tray				
100 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
200 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m

Support spacing for wall mounting with bracket

Cable tray width	Cable load per cable tray	
100 mm	max. 20 kg/m	max. 1.50 m
200 mm	max. 20 kg/m	max. 1.50 m
300 mm	max. 20 kg/m	max. 1.50 m
400 mm	max. 20 kg/m	max. 1.50 m

Cable tray systems RKS-Magic®

Components used

Ceiling mounting with suspended support/bracket

Component	Type				
Cable tray	RKSM 6... FS	1	2	2	3
Support	US 5 K ... FT	1	1	1	1
Protective cap	US 5 KS OR	1	1	1	1
Wall and support brackets	AW 30 11 FT, AW 55 21 FT, ... 31 FT, ... 41 FT	1	2	2	3
Spacer	DSK 45	1	2	1	2
Hexagonal bolt	SKS 10x 90 F	1	2	1	2
Large washer	DIN440 11 F	1	2	0	1
Truss-head bolt	FRSB 6x 15 F	2	4	4	6

Choose the fastening anchors according to the substrate

Wall mounting with bracket

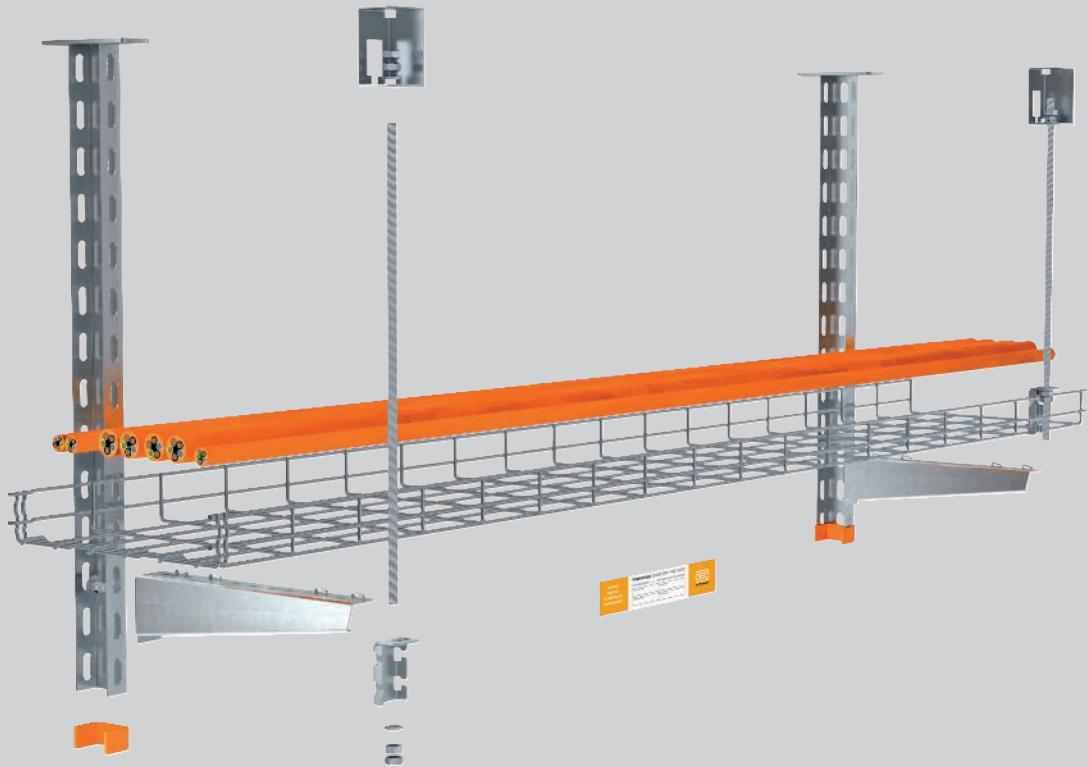
Component	Type	
Cable tray	RKSM 6... FS	1
Wall and support brackets	AW 30 11 FT, AW 55 21 FT, ... 31 FT, ... 41 FT	1
Truss-head bolt	FRSB 6x 15 F	2

Choose the fastening anchors according to the substrate



GR-Magic® mesh cable trays

System description

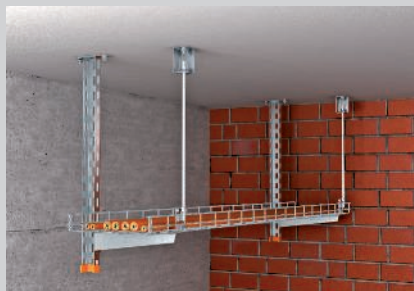


The GR-Magic® mesh cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. The threaded rod lock is mounted directly on the tray rail, using the ABG connection component. This is just at-

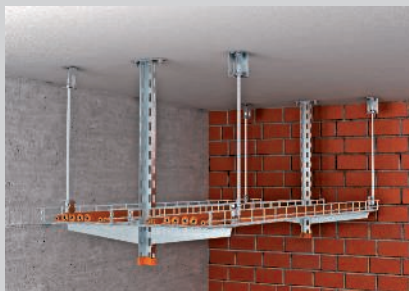
tached to the side lengthwise wires of the mesh cable tray. When the threaded rod has been mounted, the component is secured against unintentional release. The screwless connection system of the GR-Magic® mesh cable trays ensures toolless, and thus particularly rapid and economic, mounting.

GR-Magic® mesh cable trays

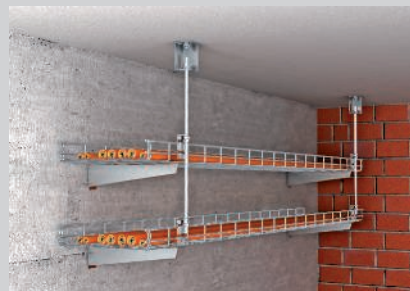
Installation principle



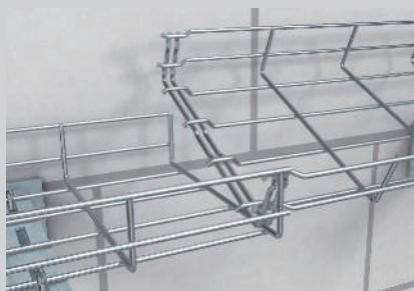
Ceiling mounting with brackets mounted on one side.



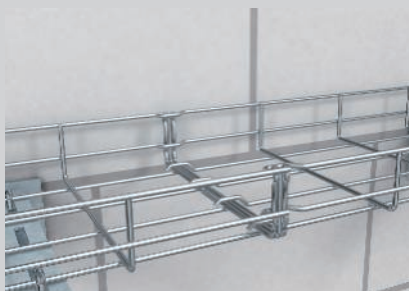
Ceiling mounting with brackets arranged on both sides.



Multi-layer wall mounting.



Interconnecting of two stock lengths of the mesh cable tray.



Finished screwless joint connection



Screwless mesh cable tray fastening on the bracket.



Screwless fastening of the connection component to the side wires.

Classification according to DIN 4102 Part 12

E30

E60

E90

GR-Magic® mesh cable trays

Proof

Maintenance of electrical functionality system according to DIN 4102 Part 12

Routing type	Cable-specific support construction
Test certificate no.	P-MPA-E-12-011
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12
Mounting variant	Ceiling mounting with suspended support and bracket with threaded rod lock Wall mounting with bracket and threaded rod lock
Material version	Galvanised steel

Support spacing for ceiling mounting with suspended support/bracket

Cable tray width	Cable load per cable tray					
100 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
200 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m	max. 1.50 m

Support spacing for wall mounting with bracket

Cable tray width	Cable load per cable tray			
100 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m
200 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m
300 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m
400 mm	max. 15 kg/m	max. 1.50 m	max. 1.50 m	max. 1.50 m

GR-Magic® mesh cable trays

Components used

Ceiling mounting with suspended support/bracket

Component	Type					
Mesh cable tray	GRM 55 ... G	1	2	3	2	3
Support	US 3 K ... FT	1	1	1	1	1
Protective cap	US 3 KS OR	1	1	1	1	1
Wall and support brackets	AWG 15 ... FT	1	2	3	2	3
Truss-head bolt	FRS 10x 25 F	1	2	3	2	3
Connection component	ABG FT	1	2	3	2	3
Threaded rod	2078 M10 G	1	2	0	2	3
Threaded rod	2078 M12 G	0	0	3	0	0
Hexagonal nut	DIN 934 M10 G	4	5	0	8	9
Hexagonal nut	DIN 934 M12 G	0	0	6	0	0
Washer	966 M10 G	2	3	0	4	5
Washer	966 M12 G	0	0	4	0	0
Connection sleeve	12005 M10 G	0	1	0	0	1
Connection sleeve	12005 M12 G	0	0	2	0	0
Fire protection clamp	BSB	1	1	1	2	2

Choose the fastening anchors according to the substrate

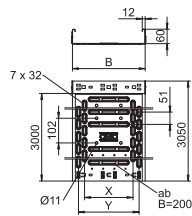
Wall mounting with bracket

Component	Type			
Mesh cable tray	GRM 55 ... G	1	2	3
Wall and support brackets	AWG 15 ... FT	1	2	3
Connection component	ABG FT	1	2	3
Threaded rod	2078 M10 G	1	2	0
Threaded rod	2078 M12 G	0	0	3
Hexagonal nut	DIN 934 M10 G	4	5	0
Hexagonal nut	DIN 934 M12 G	0	0	6
Washer	966 M10 G	2	3	0
Washer	966 M12 G	0	0	4
Connection sleeve	12005 M10 G	0	1	0
Connection sleeve	12005 M12 G	0	0	2
Fire protection clamp	BSB	1	1	1

Choose the fastening anchors according to the substrate



Cable tray RKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 FS	100	0.75	100	—	50	3	132.131	6047611
RKSM 620 FS	200	0.75	200	100	150	3	183.000	6047638
RKSM 630 FS	300	0.75	300	200	250	3	235.080	6047654
RKSM 640 FS	400	0.90	400	300	350	3	331.340	6047689
RKSM 610 FT	100	1.00	100	—	50	3	197.409	6047612
RKSM 620 FT	200	1.00	200	100	150	3	251.111	6047639
RKSM 630 FT	300	1.00	300	200	250	3	356.295	6047655
RKSM 640 FT	400	1.00	400	300	350	3	419.350	6047690

SI Steel

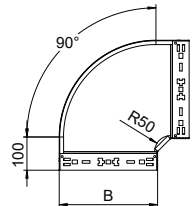
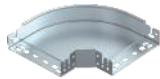
FS Strip-galvanised **FT** Hot-dip galvanised

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

90° Magic bend



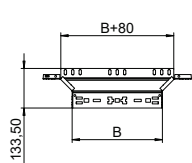
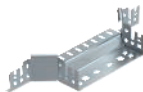
Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 FS	100	100	1	65.700	6041130
RBM 90 620 FS	200	200	1	122.100	6041134
RBM 90 630 FS	300	300	1	192.800	6041136
RBM 90 640 FS	400	400	1	275.400	6041138
RBM 90 610 FT	100	100	1	70.700	6041150
RBM 90 620 FT	200	200	1	130.900	6041154
RBM 90 630 FT	300	300	1	206.800	6041156
RBM 90 640 FT	400	400	1	295.300	6041158

SI Steel

FS Strip-galvanised **FT** Hot-dip galvanised

90° bend with quick connector system. For all cable tray types of 60 mm side height.

Magic add-on tee



Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 FS	100	100	1	37.700	6041230
RAAM 620 FS	200	200	1	50.100	6041234
RAAM 630 FS	300	300	1	63.500	6041236
RAAM 640 FS	400	400	1	75.700	6041238
RAAM 610 FT	100	100	1	40.800	6041250
RAAM 620 FT	200	200	1	54.200	6041254
RAAM 630 FT	300	300	1	68.100	6041257
RAAM 640 FT	400	400	1	81.800	6041259

SI Steel

FS Strip-galvanised **FT** Hot-dip galvanised

Magic add-on tee with quick connector system. For all cable tray types of 60 mm side height.

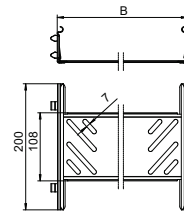
Magic straight connector set FS

Type	Side height mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
KTSMV 610 FS	60	100	1	30.500	6068914
KTSMV 620 FS	60	200	1	37.200	6068918
KTSMV 630 FS	60	300	1	44.000	6068920
KTSMV 640 FS	60	400	1	50.700	6068922
KTSMV 610 DD	60	100	1	30.500	6068936
KTSMV 620 DD	60	200	1	37.200	6068940
KTSMV 630 DD	60	300	1	44.000	6068942
KTSMV 640 DD	60	400	1	50.700	6068944

Sl Steel

FS Strip-galvanised **DD** Strip galvanised zinc/aluminium, Double Dip

Cable tray connector with quick fastening for the screwless connection of perforated cable trays with a side height of 60 mm.



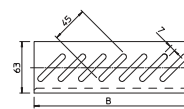
Bottom end plate

Type	Width mm	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BEB 100 FS	100	100	100	5.400	7083106
BEB 200 FS	200	200	100	11.400	7083203
BEB 300 FS	300	300	100	17.200	7083300
BEB 400 FS	400	400	100	23.100	7083408
BEB 100 DD	100	100	100	5.400	7083618
BEB 200 DD	200	200	100	11.400	7083626
BEB 300 DD	300	300	100	17.200	7083630
BEB 400 DD	400	400	100	23.100	7083634

Sl Steel

FS Strip-galvanised **DD** Strip galvanised zinc/aluminium, Double Dip

Bottom end plate for floor reinforcement at the ends of the cable tray and as cable protection.

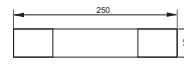


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

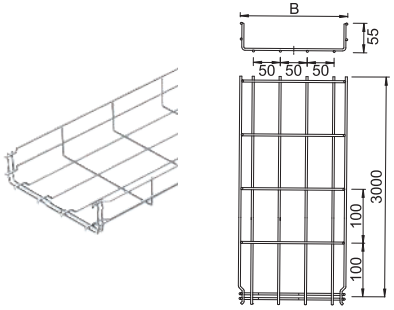
PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Mesh cable tray GR-Magic®

Mesh cable tray GRM 55

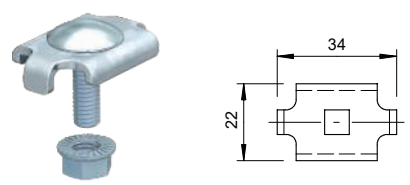


Type	Width mm	Wire Ø mm	Dimen- sion B mm	Pack.		Weight kg/100 m	Item No.
				m			
GRM 55 300 G	300	4.8	300	3		194.900	6001448
GRM 55 400 G	400	4.8	400	3		236.700	6001450

- Sl Steel
- G Electrogalvanised

Mesh cable tray with shaped connector of side height 55 mm.

Clamping piece

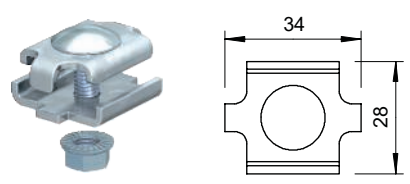


Type	Pack.		Weight kg/100 pcs.	Item No.
	pcs			
GKS 34 G	20		2.000	6016855

- Sl Steel
- G Electrogalvanised

Clamp for fixing mesh cable trays to wall or support brackets.

Connector

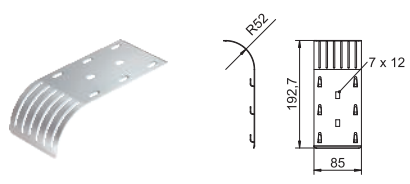


Type	Pack.		Weight kg/100 pcs.	Item No.
	pcs			
GSV 34 G	20		3.000	6016596

- Sl Steel
- G Electrogalvanised

Screwed version of joint connector for mesh cable trays.

Drop-out plate

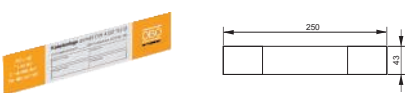


Type	Pack.		Weight kg/100 pcs.	Item No.
	pcs			
KAB GR FS	10		14.100	6220139

- Sl Steel
- FS Strip-galvanised

Drop-out plate for mesh cable trays.

Identification plate for function maintenance



Type	Language	Pack.		Weight kg/100 pcs.	Item No.
		pcs			
KS-E EN	English	10		0.600	7205432

- PVC Polyvinylchloride

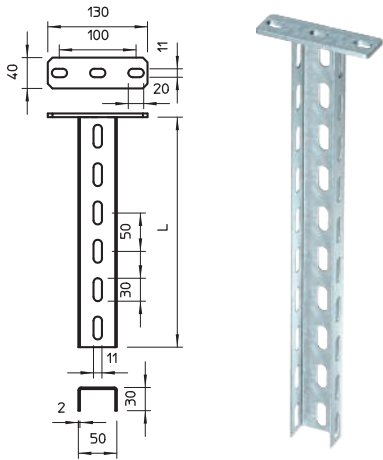
Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 K 20 FT	200	2	200	1	50.500	6342351
US 3 K 30 FT	300	2	300	1	64.400	6342353
US 3 K 40 FT	400	2	400	1	78.300	6342355
US 3 K 50 FT	500	2	500	1	92.300	6342357
US 3 K 60 FT	600	2	600	1	106.200	6342359
US 3 K 70 FT	700	2	700	1	120.200	6342362
US 3 K 80 FT	800	2	800	1	134.100	6342364
US 3 K 90 FT	900	2	900	1	147.800	6342366
US 3 K 100 FT	1000	2	1000	1	162.000	6342368
US 3 K 110 FT	1100	2	1100	1	175.900	6342370
US 3 K 120 FT	1200	2	1200	1	189.900	6342372

Sl Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 50 x 30 mm with welded head plate.

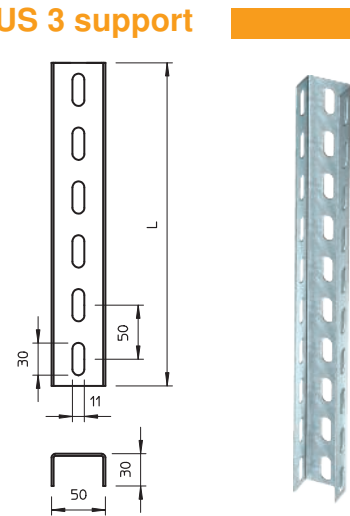


Type	Dimen- sion L mm	Material thickness mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 20 FS	200	2	1	27.000	6342302
US 3 30 FS	300	2	1	40.000	6342304
US 3 40 FS	400	2	1	53.000	6342306
US 3 50 FS	500	2	1	67.000	6342308
US 3 60 FS	600	2	1	80.000	6342310
US 3 70 FS	700	2	1	93.000	6342312
US 3 80 FS	800	2	1	107.000	6342314
US 3 90 FS	900	2	1	120.000	6342316
US 3 100 FS	1000	2	1	133.000	6342318

Sl Steel

FS Strip-galvanised

U support in fixed lengths. Dimensions 30 x 50 mm.

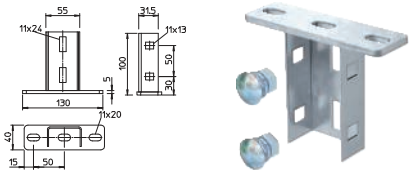


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KU 3 FT	10	46.800	6348874

Sl Steel

FT Hot-dip galvanised

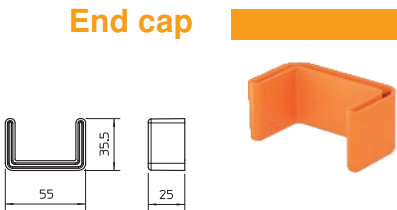
Head plate for mounting on US 3 supports.



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 3 KS OR	Pastel orange	20	1.068	6338458

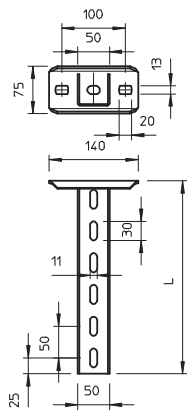
PE Polyethylene

End cap to cover the ends of US 3 supports.



Mounting systems

US 5 support



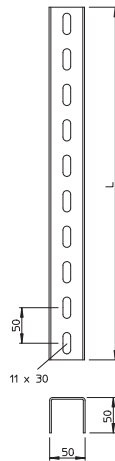
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 K 20 FT	200	2.5	200	1	85.000	6341527
US 5 K 30 FT	300	2.5	300	1	110.000	6341535
US 5 K 40 FT	400	2.5	400	1	136.000	6341543
US 5 K 50 FT	500	2.5	500	1	161.000	6341551
US 5 K 60 FT	600	2.5	600	1	185.000	6341578
US 5 K 70 FT	700	2.5	700	1	210.000	6341586
US 5 K 80 FT	800	2.5	800	1	236.000	6341594
US 5 K 90 FT	900	2.5	900	1	261.000	6341608
US 5 K 100 FT	1000	2.5	1000	1	286.000	6341616
US 5 K 110 FT	1100	2.5	1100	1	311.000	6341624
US 5 K 120 FT	1200	2.5	1200	1	337.000	6341632

SI Steel

FT Hot-dip galvanised

U support of dimensions 50 x 50 mm with welded head plate.

US 5 support



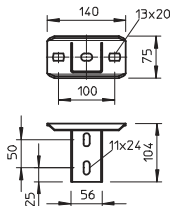
Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 20 FT	200	2.5	200	1	51.000	6340881
US 5 30 FT	300	2.5	300	1	79.000	6340903
US 5 40 FT	400	2.5	400	1	106.000	6340911
US 5 50 FT	500	2.5	500	1	133.000	6340938
US 5 60 FT	600	2.5	600	1	160.000	6340946
US 5 70 FT	700	2.5	700	1	175.000	6340950
US 5 80 FT	800	2.5	800	1	200.000	6340954
US 5 90 FT	900	2.5	900	1	227.000	6340958
US 5 100 FT	1000	2.5	1000	1	265.000	6340962
US 5 150 FT	1500	2.5	1500	1	395.000	6340966
US 5 200 FT	2000	2.5	2000	1	506.000	6340970

SI Steel

FT Hot-dip galvanised

U support in fixed lengths. Dimensions 50 x 50 mm.

Head plate US 5



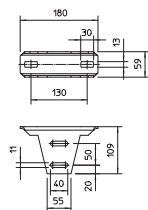
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KUS 5 FT	10	61.000	6348904

SI Steel

FT Hot-dip galvanised

Head plate for installation in US 5 support.

Head plate, variable FT



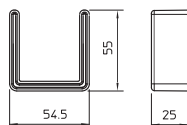
Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KU 5 V FT	4	82.000	6348920

SI Steel

FT Hot-dip galvanised

Variable head plate for installation on US 5 support.

End cap



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 5 KS OR	Pastel orange	20	1.300	6338462

PE Polyethylene

End cap to cover the ends of US 5 supports.

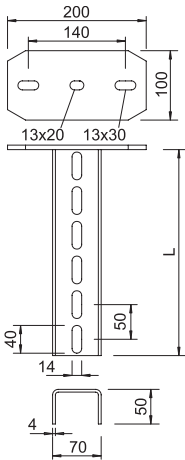
US 7 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 7 K 20 FT	200	4	200	1	177.000	6339018
US 7 K 30 FT	300	4	300	1	218.000	6339034
US 7 K 40 FT	400	4	400	1	261.000	6339050
US 7 K 50 FT	500	4	500	1	302.000	6339077
US 7 K 60 FT	600	4	600	1	344.000	6339093
US 7 K 70 FT	700	4	700	1	387.000	6339115
US 7 K 80 FT	800	4	800	1	418.000	6339131
US 7 K 90 FT	900	4	900	1	470.000	6339166
US 7 K 100 FT	1000	4	1000	1	499.000	6339182
US 7 K 110 FT	1100	4	1100	1	550.000	6339190
US 7 K 120 FT	1200	4	1200	1	591.000	6339204
US 7 K 130 FT	1300	4	1300	1	636.000	6339212
US 7 K 140 FT	1400	4	1400	1	675.000	6339220
US 7 K 150 FT	1500	4	1500	1	718.000	6339239
US 7 K 160 FT	1600	4	1600	1	760.000	6339247
US 7 K 170 FT	1700	4	1700	1	802.000	6339255
US 7 K 180 FT	1800	4	1800	1	843.000	6339263
US 7 K 190 FT	1900	4	1900	1	884.000	6339271
US 7 K 200 FT	2000	4	2000	1	927.000	6339298

St Steel

FT Hot-dip galvanised

Suspended support (U profile) of dimensions 70 x 50 mm with welded head plate.



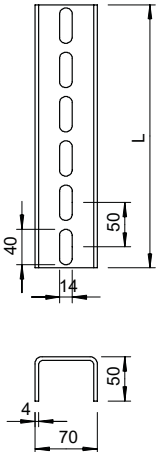
US 7 support

Type	Length mm	Material thickness mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
US 7 20 FT	200	4	200	1	81.000	6340016
US 7 30 FT	300	4	300	1	121.000	6340032
US 7 40 FT	400	4	400	1	166.000	6340059
US 7 50 FT	500	4	500	1	208.000	6340075
US 7 60 FT	600	4	600	1	249.000	6340091
US 7 70 FT	700	4	700	1	290.000	6340113
US 7 80 FT	800	4	800	1	323.000	6340148
US 7 90 FT	900	4	900	1	370.000	6340164
US 7 100 FT	1000	4	1000	1	416.000	6340180
US 7 110 FT	1100	4	1100	1	457.000	6340199
US 7 120 FT	1200	4	1200	1	484.000	6340202
US 7 130 FT	1300	4	1300	1	540.000	6340210
US 7 140 FT	1400	4	1400	1	580.000	6340229
US 7 150 FT	1500	4	1500	1	620.000	6340237
US 7 160 FT	1600	4	1600	1	660.000	6340245
US 7 180 FT	1800	4	1800	1	750.000	6340261
US 7 190 FT	1900	4	1900	1	790.000	6340288
US 7 200 FT	2000	4	2000	1	803.700	6340296

St Steel

FT Hot-dip galvanised

U support in fixed lengths. Dimensions 70 x 50 mm.



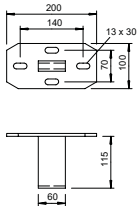
Head plate for US 7 support

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KU 7 FT	10	148.000	6349102

St Steel

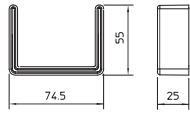
FT Hot-dip galvanised

Light-duty head plate for mounting on US 7 support.



Mounting systems

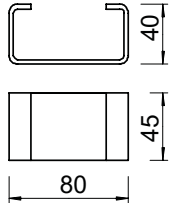
End cap



Type	Colour	Pack. pcs	Weight kg/100 pcs.	Item No.
US 7 KS OR	Pastel orange	20	1.806	6338497
PE Polyethylene				

End cap to cover the ends of US 7 supports.

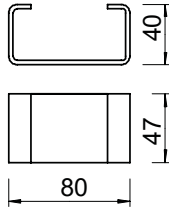
Spacer



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 45 FT	20	18.000	6416500
St Steel			
FT Hot-dip galvanised			

Spacer for use in U 5 support and in the head plate, type KU 7 VQP.

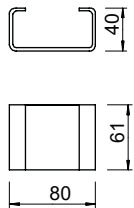
Spacer



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 47 FT	20	19.000	6416504
St Steel			
FT Hot-dip galvanised			

Spacer for use in head plate, type KU 5 V.

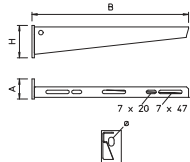
Spacer



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
DSK 61 FT	20	25.000	6416519
St Steel			
FT Hot-dip galvanised			

Spacer for use in U 7 supports.

Wall and support bracket AW 15

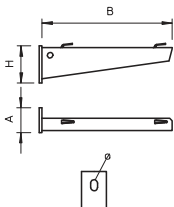


Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 15 21 FT	210	60	40	210	11	30	24.000	6420680
AW 15 31 FT	310	65	40	310	11	30	39.900	6420710
AW 15 41 FT	410	70	40	410	11	30	54.000	6420745

St Steel
FT Hot-dip galvanised

Light-duty wall and support bracket with welded head plate.

Wall and support bracket AWG 15



Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW G 15 21 FT	210	60	40	210	11	30	26.000	6420608
AW G 15 31 FT	310	65	40	310	11	30	35.000	6420610
AW G 15 41 FT	410	70	40	410	11	30	56.000	6420612

St Steel
FT Hot-dip galvanised

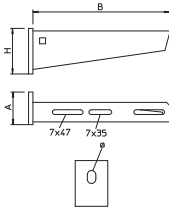
Light-duty wall and support bracket with welded head plate for screwless mesh cable tray fastening.

Wall and support bracket AW 30

Type	Width mm	Dimen- sion H mm	Dimen- sion A mm	Dimen- sion B mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 30 11 FT	110	60	50	110	11	1	22.000	6419704

- St Steel
- FT Hot-dip galvanised

Medium-duty wall and support bracket with welded head plate.

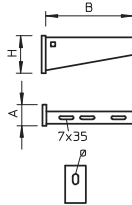


Wall and support bracket AW 55

Type	Width mm	Dimen- sion B mm	Dimen- sion H mm	Dimen- sion A mm	Hole Ø mm	Pack. pcs	Weight kg/100 pcs.	Item No.
AW 55 21 FT	210	90	50	13.5		1	77.000	6418554
AW 55 31 FT	310	110	50	13.5		1	123.000	6418570
AW 55 41 FT	410	130	50	13.5		1	167.000	6418597

- St Steel
- FT Hot-dip galvanised

Heavy-duty wall and support bracket with welded head plate.

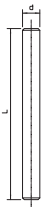


Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M10 1M G	M10	10	1000	10	49.000	3141209
TR M12 1M G	M12	12	1000	10	62.000	3141306

- St Steel
- G Electrogalvanised

Threaded rod to DIN 976.

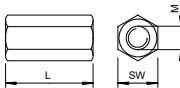


Connection sleeve

Type	Thread	Dimen- sion L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M10 G	M10	30	17	50	4.150	6410103
CSTR M12 G	M12	40	19	25	7.000	6410111

- St Steel
- G Electrogalvanised

Connection sleeve with continuous internal thread.

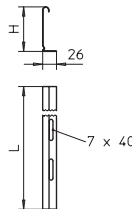


Barrier strip 45

Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

- St Steel
- FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.

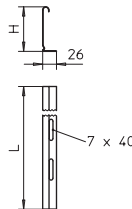


Barrier strip 60

Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

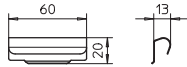
- St Steel
- FS Strip-galvanised

Separating retainer for separation of cables of different voltages or functions.



Mounting systems

Separating retainer connector



Type

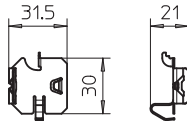
TSGV A2

V2A Stainless steel, A2

Separating retainer connector for screwless connection of the TSG separating retainer in all side heights.

Pack.	Weight	
pcs	kg/100 pcs.	Item No.
10	0.923	6067970

Hold-down clamp for separating retainer fastening in RKSM



Type

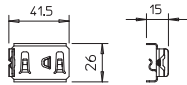
KS KR A2

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

Pack.	Weight	
pcs	kg/100 pcs.	Item No.
30	0.537	6062280

Hold-down clamp for separating retainer fastening



Type

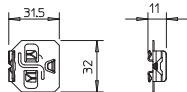
KS GR A2

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.

Pack.	Weight	
pcs	kg/100 pcs.	Item No.
30	0.830	6062282

Hold-down clamp for separating retainer fastening VA



Type

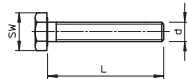
KS KL A2

V2A Stainless steel, A2

Hold-down clamp for screwless fastening of separating retainer in cable ladders.

Pack.	Weight	
pcs	kg/100 pcs.	Item No.
30	0.512	6062284

Hexagonal bolt with nut and washer



Type

SKS 10x80 F

M10 x 80

SKS 10x90 F

M10 x 90

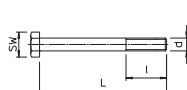
St Steel

F Hot-dip galvanised

Hexagonal bolt for universal fixing of structure components.

Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 10x80 F	M10 x 80	80	10	17	20	7.700	6418250
SKS 10x90 F	M10 x 90	90	10	17	20	7.800	6418252

Hexagonal bolt with hexagonal nut, washer and tooth lock washer



Type

SKS 12x80 F

M12 x 80

SKS 12x100 F

M12 x 100

SKS 12x110 F

M12 x 110

St Steel

F Hot-dip galvanised

Hexagonal bolt with hexagonal nut, washer and tooth lock washer.

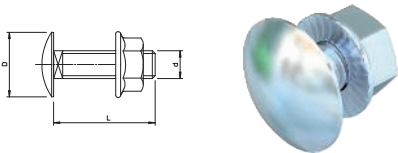
Type	Dimension mm	Dimension L mm	Dimension d mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SKS 12x80 F	M12 x 80	80	30	12	20	11.800	6418287
SKS 12x100 F	M12 x 100	100	30	12	20	12.600	6418295
SKS 12x110 F	M12 x 110	110	30	12	20	14.500	6418317

Truss-head bolt with flange nut

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 6x12 F	M 6 x 12	12	13.5	6	100	0.990	6406122
FRSB 6x20 F	M 6 x 20	20	13.5	6	100	1.000	6406203

- Sl Steel
- F Hot-dip galvanised

Truss-head bolt with square neck including flange nut.

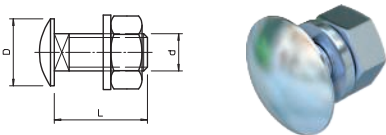


Truss-head bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRSB 10x25 F	M 10 x 25	25	24	10	50	4.500	6407528

- Sl Steel
- F Hot-dip galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.

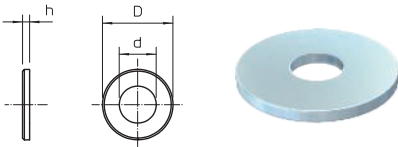


Large washer

Type	Dimension mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 11 F	34	11	3	100	1.985	6408729
DIN440 14 F	44	13.5	4	50	4.736	6408737

- Sl Steel
- F Hot-dip galvanised

Washer of particularly large outer diameter.

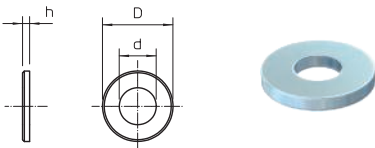


Washer

Type	Thread	Dimen- sion d mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

- Sl Steel
- G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.

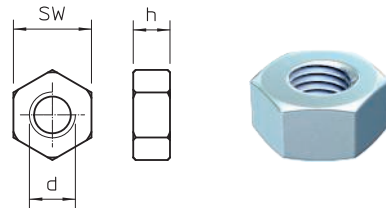


Hexagonal nut DIN 934

Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M10 G	M10	17	8.4	10	100	1.084	3400107
HN M12 G	M12	19	10.8	12	100	1.730	3400123

- Sl Steel
- G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



Cable trays, RKS-Magic® VA

System description



The RKS-Magic® cable tray has been tested as a cable-specific support construction for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. Threaded rod locking is not required at the tip of the bracket. This saves not just material but also considerably simplifies and speeds up the installation of cables. The screwless connection system allows interconnection of the RKS-Magic® cable trays without tools and in a particularly

quick and economic manner. To ensure the maintenance of electrical functionality, only the locking lugs in the base need to be bent after the trays have been connected. The double material thickness in the joint area and the beading in the base mean that the cable tray has a very high load capacity. The installation of fittings in the section route is permitted, as is the mounting of separating retainers.

Cable trays, RKS-Magic® VA

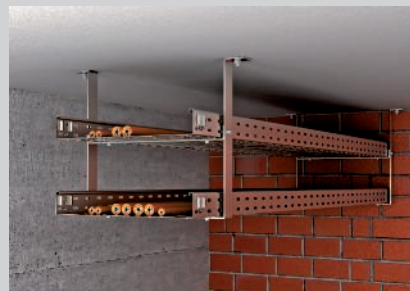
Installation principle



Single-layer ceiling mounting with suspension clamp.



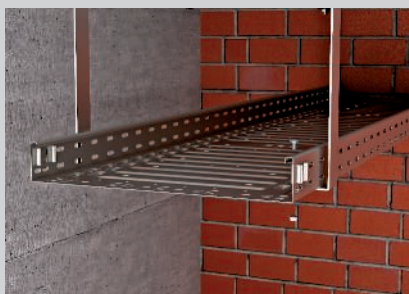
Mounting under sloping ceiling with individually adapted suspension clamp.



Two-layer ceiling mounting with suspension clamp and intermediate clamp.



Two-layer ceiling mounting with suspension clamp and extension.



Fastening of the cable tray with truss-head bolts.



Joint connection without additional gland.



Classification according to DIN 4102 Part 12

E30

E60

E90

Cable trays, RKS-Magic® VA

Proof

Maintenance of electrical functionality system according to DIN 4102 Part 12

Routing type	Cable-specific support construction
Test certificate no.	P-MPA-E-12-003
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12
Mounting variant	Ceiling mounting with suspension clamp
Material version	Rustproof steel

Support spacing for ceiling mounting with suspension clamp

Cable tray width	Cable load per cable tray		
100 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 30 kg/m	max. 1.50 m	max. 1.50 m

Cable trays, RKS-Magic® VA

Components used

Ceiling mounting with suspension clamp

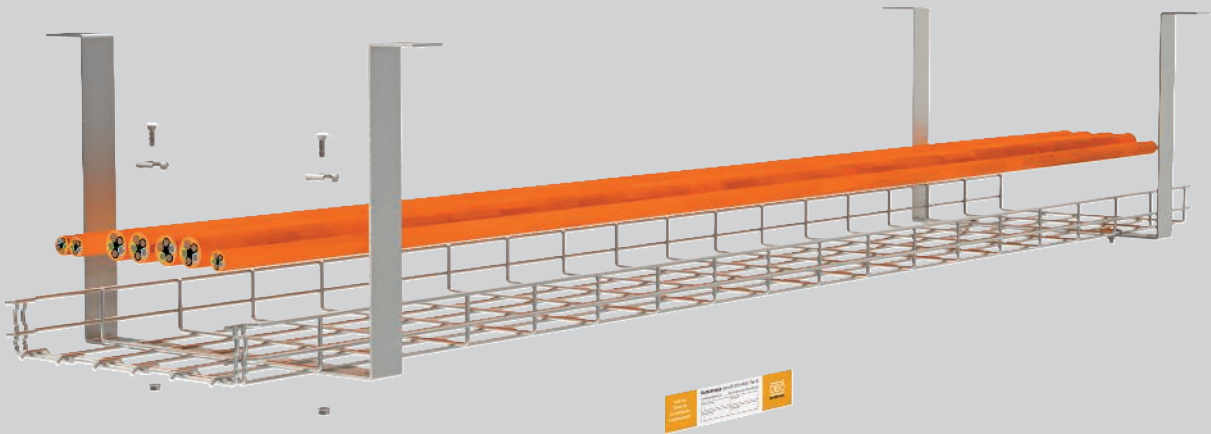
Component	Type		
Cable tray	RKSM 6... VA4571	1	2
Suspension clamp	AHB-T	1	1
Truss-head bolt	FRSB 6x12 A4	2	4
Intermediate clamp	AHB-TZ	0	1
Truss-head bolt	FRSB 6x16 A4	0	2

Choose the fastening anchors according to the substrate
Intermediate clamp AHB-TZ on request



GR-Magic® mesh cable trays VA

System description

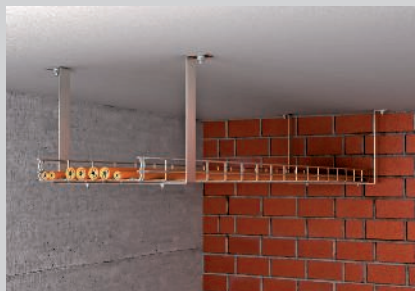


The GR-Magic® mesh cable tray, made from rustproof steel, has been tested as a cable-specific support structure for the maintenance of electrical functionality according to DIN 4102 Part 12 and approved for the maintenance of electrical functionality classes E 30 to E 90. The rustproof steel version permits mounting in areas with more aggressive ambient conditions. The design of the AHB-T suspension clamp means that it can be mounted on straight, slanting or curved ceilings, thus allowing simple, space-saving in-

stallation of the mesh cable tray. The benefits of the screwless connection systems of the GR-Magic® mesh cable trays also apply to this routing type. This makes mounting of mesh cable trays, for example in the installation of long sections in increased corrosion protection requirements, an economically viable routing variant. With this system, the mounting of separating retainers and lids is permitted.

GR-Magic® mesh cable trays VA

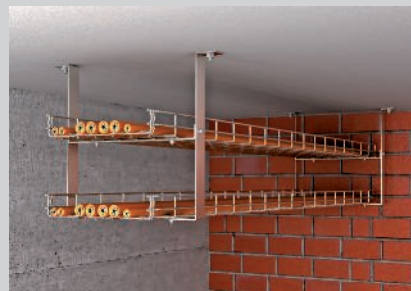
Installation principle



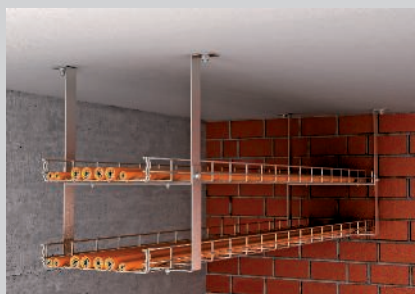
Single-layer ceiling mounting with suspension clamp.



Mounting under sloping ceiling with individually adapted suspension clamp.



Two-layer ceiling mounting with suspension clamp and intermediate clamp.



Two-layer ceiling mounting with suspension clamp and extension.



Fastening of the mesh cable tray with clamping piece and truss-head bolts.



Joint connection without additional gland.



Classification according to DIN 4102 Part 12

E30

E60

E90

GR-Magic® mesh cable trays VA

Proof

Maintenance of electrical functionality system according to DIN 4102 Part 12

Routing type	Cable-specific support construction
Test certificate no.	P-MPA-E-12-003
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12
Mounting variant	Ceiling mounting with suspension clamp
Material version	Rustproof steel

Support spacing for ceiling mounting with suspension clamp

Cable tray width	Cable load per cable tray		
100 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m
200 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m
300 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m
400 mm	max. 20 kg/m	max. 1.50 m	max. 1.50 m

GR-Magic® mesh cable trays VA

Components used

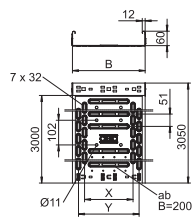
Ceiling mounting with suspension clamp

Component	Type		
Mesh cable tray	GRM 55 ... VA4401	1	2
Suspension clamp	AHB-T	1	1
Clamping piece	GKS 34 VA4401	2	4
Intermediate clamp	AHB-TZ	0	1
Truss-head bolt	FRSB 6x16 A4	0	2

Choose the fastening anchors according to the substrate
Intermediate clamp AHB-TZ on request



Cable tray RKS-Magic® 60



Type	Width mm	Plate thickness mm	Dimen- sion B mm	Dimen- sion x mm	Dimen- sion y mm	Pack. m	Weight kg/100 m	Item No.
RKSM 610 A2	100	0.75	100	—	50	3	132.130	6047613
RKSM 620 A2	200	0.75	200	100	150	3	180.000	6047640
RKSM 630 A2	300	0.75	300	200	250	3	237.700	6047656
RKSM 610 A4	100	0.75	100	—	50	3	132.130	6047614
RKSM 620 A4	200	0.75	200	100	150	3	180.000	6047641
RKSM 630 A4	300	0.75	300	200	250	3	237.700	6047657

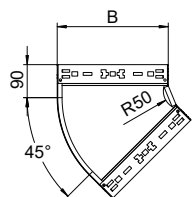
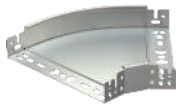
V2A Stainless steel, A2 V4A Stainless steel, A4

Cable tray with integrated quick fastening system. The usable length of the cable tray is 3,000 mm.

The cable tray possesses continuous side perforations of 7 x 20 mm for the installation of additional connection and mounting components.

The perforation for direct threaded rod suspension has a diameter of 11 mm.

45° Magic bend

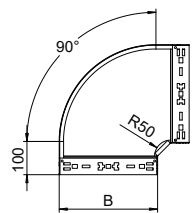
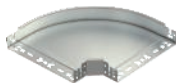


Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 45 610 A2	100	100	1	50.400	6041080
RBM 45 620 A2	200	200	1	86.000	6041084
RBM 45 630 A2	300	300	1	128.300	6041086

V2A Stainless steel, A2

45° bend with quick connector system. For all cable tray types of 60 mm side height.

90° Magic bend

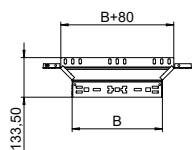


Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RBM 90 610 A2	100	100	1	65.700	6041180
RBM 90 620 A2	200	200	1	122.100	6041184
RBM 90 630 A2	300	300	1	192.800	6041186

V2A Stainless steel, A2

90° bend with quick connector system. For all cable tray types of 60 mm side height.

Magic add-on tee

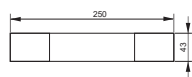


Type	Width mm	Dimen- sion B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
RAAM 610 A2	100	100	1	37.700	6041270
RAAM 620 A2	200	200	1	50.100	6041275
RAAM 630 A2	300	300	1	63.500	6041277

V2A Stainless steel, A2

Add-on tee with quick connector system. For all cable tray types of 60 mm side height.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

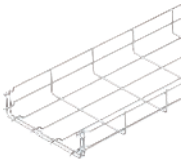
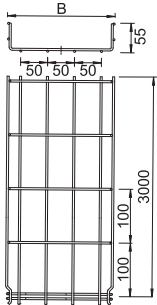
Mesh cable tray GR-Magic® 55

Type	Wire			Pack.	Weight		Item No.
	Width	Ø	Dimension B		m	kg/100 m	
GRM 55 300 A2	300	4.8	300	3		191.100	6001078

V2A Stainless steel, A2

GB Stained

Mesh cable tray with shaped connector of side height 55 mm.

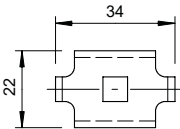


Clamping piece

Type	Pack. Weight		Item No.
	pcs	kg/100 pcs.	
GKS 34 A2	20	2.000	6016839

V2A Stainless steel, A2

Hold-down clamp for fixing mesh cable trays to wall or support brackets.

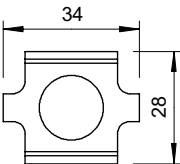


Joint connector

Type	Pack.	Weight	Item No.
	pcs	kg/100 pcs.	
GSV 34 A2	20	3.000	6016642

V2A Stainless steel, A2

Screwed version of joint connector for mesh cable trays.

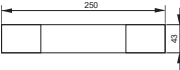


Identification plate for function maintenance

Type	Language	Pack.	Weight	Item No.
		pcs	kg/100 pcs.	
KS-E EN	English	10	0.600	7205432

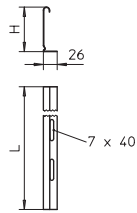
PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Mounting systems, VA

Barrier strip 45

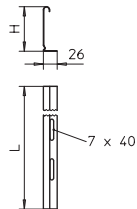


Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 45 A2	45	0.75	3000	3	47.000	6062025

V2A Stainless steel, A2

Separating retainer for separation of cables of different voltages or functions.

Barrier strip 60



Type	Dimen- sion H mm	Plate thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
TSG 60 A2	60	0.75	3000	3	55.000	6062084

V2A Stainless steel, A2

Separating retainer for separation of cables of different voltages or functions.

Separating retainer connector

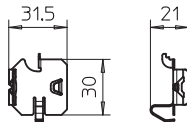


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
TSGV A2	10	0.923	6067970

V2A Stainless steel, A2

Separating retainer connector for screwless connection of the TSG separating retainer in all side heights.

Hold-down clamp for separating retainer fastening in RKSM

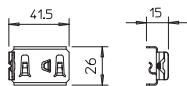


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS KR A2	30	0.537	6062280

V2A Stainless steel, A2

Clamping piece for screwless fastening of separating retainer in the cable tray types RKSM, MKS and SKS.

Hold-down clamp for separating retainer fastening

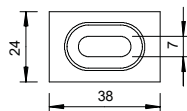


Type	Pack. pcs	Weight kg/100 pcs.	Item No.
KS GR A2	30	0.830	6062282

V2A Stainless steel, A2

Hold-down clamp for fastening separating retainer in mesh cable trays.

Hold-down clamp



Type	Pack. pcs	Weight kg/100 pcs.	Item No.
GKT 38 A2	20	2.200	6017045

V2A Stainless steel, A2

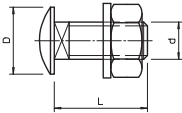
Clamp for fastening barrier strip in mesh cable trays.

Truss-head bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 6x12 A2	M 6 x 12	12	13.5	6	100	0.760	6406521

V2A Stainless steel, A2

Truss-head bolt with square neck including washer and hexagonal nut.







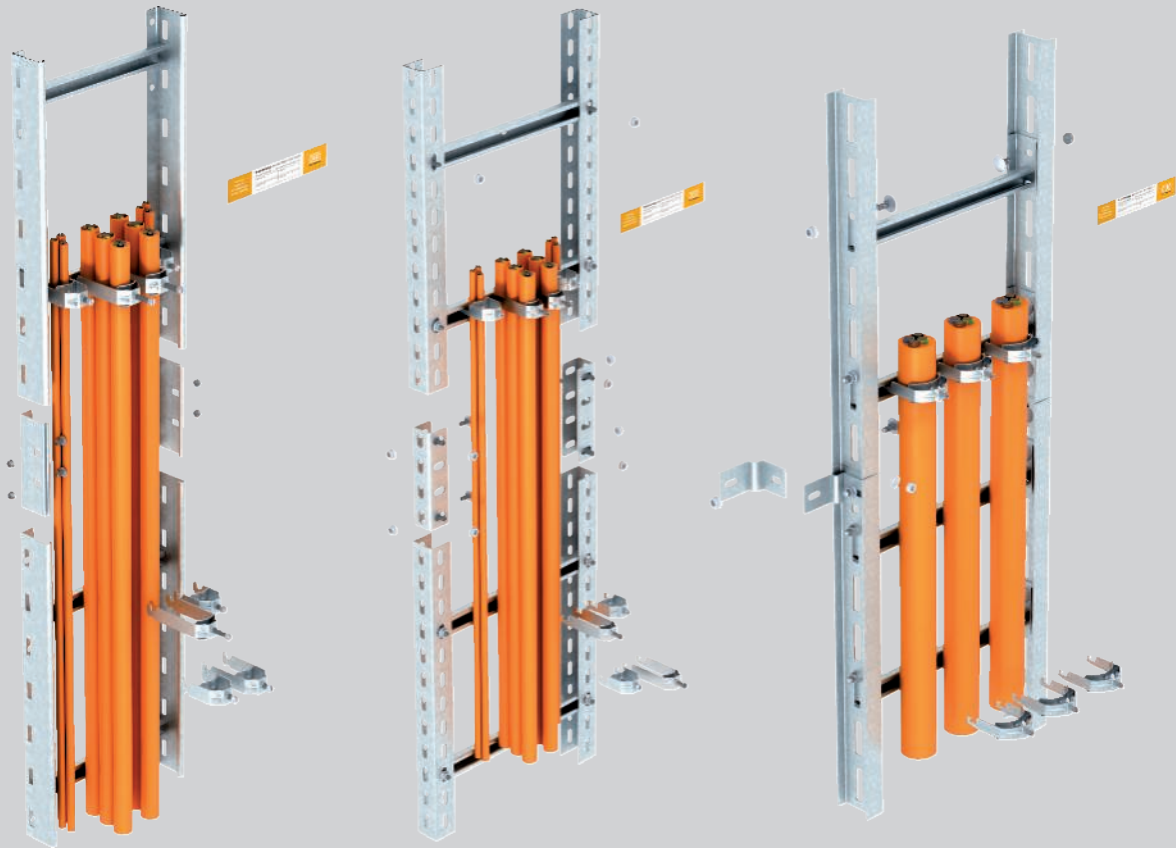
Maintaining electrical function – standard support structures, vertical ladders – strain relief

	System description, vertical ladders	160
	Products	163



Vertical ladders

System description



Vertical ladders of type LM, type SLM and type SLS fulfil all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E30, E60 and E90. They are available in the widths 200 to 400 mm (type LG) and in the widths 400 to 600 mm (type SLM and type SLS). The vertical ladders are made up of straight profiles with riveted or screwed rungs. The rung spacing is 30 mm.

The vertical ladders are fastened directly to the wall through the ladder rails (type LG and type SLM) or

with fastening brackets (type SLS) at a spacing of maximum 1.2 m. Mounting of screwed-on connectors is approved and they can be positioned freely. The cables must be fastened on each rung with clamp clips with a riveted metal pressure sleeve. Mounting of the strain relief, type ZSE90..., is approved for storey heights of more than 3.5 m. The vertical ladder need not be interrupted as the strain relief is mounted via the continuous vertical ladder.



Vertical ladders

Installation principle



Direct mounting of the vertical ladder on solid walls.



Joint connection with screwed-on connector.



Fastening of the cables, either individually or as a bundle with clamp clips.



Direct mounting of the rising section on solid walls.



Joint design with screwed-on connector.



Installation of the cables with clamp clips, also possible in the case of multiple assignment.



Direct mounting of the vertical ladder on solid walls.



Mounting with screwed-on fastening brackets.



Cable installation with clamp clips on the rungs of the vertical ladder.

Classification according to DIN 4102 Part 12

E30

E60

E90



Vertical ladders

Proof

Maintenance of electrical functionality system according to DIN 4102 Part 12

Routing type	Standard support system
Proof	Surveyor's report no. GS 3.2/17-436-3
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12
Material version	Galvanised steel

Note:

The surveyor's report is only valid in conjunction with valid general construction test certificates of a testing office for the appropriate installed cable type.

Mounting parameters, light-duty vertical ladder (type LG)

Fastening spacing	max. 1.2 m
Cable load	max. 20 kg/m
Rung distance	30 cm
Width	max. 400 mm
Suitable clamp clip	Type 2056 M ...
Individual cable diameter	Unlimited
Quantity of cables on bundling	max. 3
Cable diameter on bundling	max. 25 mm

Mounting parameters, heavy-duty vertical ladder (type SLM)

Fastening spacing	max. 1.2 m
Cable load	max. 20 kg/m
Rung distance	30 cm
Width	max. 600 mm
Suitable clamp clip	Type 2056 UM ...
Individual cable diameter	Unlimited
Quantity of cables on bundling	max. 3
Cable diameter on bundling	max. 25 mm

Mounting parameters, industrial vertical ladder (type SLS)

Fastening spacing	max. 1.2 m
Cable load	max. 20 kg/m
Rung distance	30 cm
Width	max. 600 mm
Suitable clamp clip	Type 2056 UM ...
Individual cable diameter	Unlimited
Quantity of cables on bundling	max. 3
Cable diameter on bundling	max. 25 mm

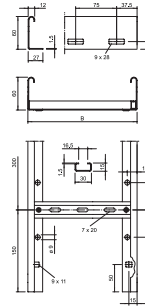
Cable ladder LG 60, 3 m VS

Type	Width mm	Rail thickness mm	Length mm	Rung spacing mm	Dimen- sion B mm	Pack. m	Weight kg/100 m	Item No.
LG 620 VS 3 FS	200	1.5	3000	300	200	3	281.700	6208538
LG 630 VS 3 FS	300	1.5	3000	300	300	3	306.000	6208541
LG 640 VS 3 FS	400	1.5	3000	300	400	3	330.000	6208544
LG 620 VS 6 FS	200	1.5	6000	300	200	6	269.750	6208627
LG 630 VS 6 FS	300	1.5	6000	300	300	6	293.380	6208630
LG 640 VS 6 FS	400	1.5	6000	300	400	6	317.083	6208633

Sl Steel

FS Strip-galvanised

Cable ladder with perforated side rail of side height 60 mm with riveted C profile frames, open in an upwards direction (VS version).



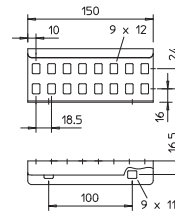
Straight connector

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
LVG 60 FS	10	22.000	6208840

Sl Steel

FS Strip-galvanised

Straight connector as external connector to connect cable ladders and fittings with a side height of 60 mm and continuous rail perforation.



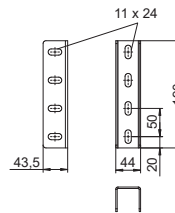
U support connector

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
VUS 5 FT	10	44.000	6018505

Sl Steel

FT Hot-dip galvanised

U support connector to connect US 5 supports.



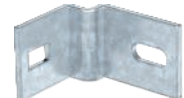
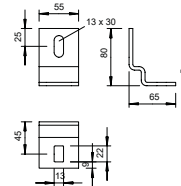
Mounting angle BW 80

Type	Pack. pcs	Weight kg/100 pcs.	Item No.
BW 80 55 FT	10	32.900	6019528

Sl Steel

FT Hot-dip galvanised

Mounting angle for mounting IS 8 supports on the wall.



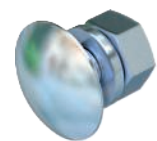
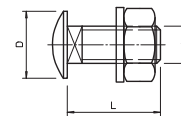
Truss-head bolt with nut and washer

Type	Dimension mm	Dimen- sion L mm	Dimen- sion D mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
FRS 8x25 F	M 8 x 25	25	20	8	50	2.300	6406998
FRS 12x25 F	M12 x 25	25	30	12	10	6.400	6406254

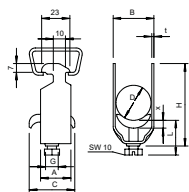
Sl Steel

F Hot-dip galvanised

Truss-head bolt with square neck. With washer and hexagonal nut.



Clamp clip, single, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M 12 FT	8 - 12	100	3.200	1156004
2056 M 16 FT	12 - 16	100	3.500	1156012
2056 M 22 FT	16 - 22	100	4.400	1156020
2056 M 28 FT	22 - 28	100	6.100	1156039
2056 M 34 FT	28 - 34	100	7.700	1156047
2056 M 40 FT	34 - 40	100	8.600	1156055
2056 M 46 FT	40 - 46	100	9.600	1156063
2056 M 52 FT	46 - 52	100	10.400	1156071
2056 M 58 FT	52 - 58	100	13.100	1156098
2056 M 64 FT	58 - 64	100	14.500	1156101
2056 M 70 FT	64 - 70	50	16.100	1156128
2056 M 76 FT	70 - 76	25	18.300	1156136
2056 M 82 FT	76 - 82	25	19.100	1156144
2056 M 90 FT	82 - 90	25	23.300	1156152
2056 M 100 FT	90 - 100	25	24.500	1156160

SI Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8-12	23	16	30	M6	1.5	3.5	40	32.5
12-16	23	20	30	M6	1.5	3.5	44	32.5
16-22	23	27	30	M6	1.5	4.5	50	46.5
22-28	23	33	30	M6	2	4.5	58	46.5
28-34	23	39	35	M8	2	5	66	44
34-40	23	45	35	M8	2	5	72	44
40-46	23	51	35	M8	2	5	79	44
46-52	23	57	35	M8	2	5	86	44
52-58	23	64	35	M8	2.5	5	93	44
58-64	23	70	35	M8	2.5	5	99	56
64-70	25	76	35	M8	2.5	5	106	56
70-76	25	82	40	M8	2.5	5	114	56
76-82	25	88	40	M8	2.5	5	121	56
82-90	25	97	40	M8	3	5	130	56
90-100	25	107	40	M8	3	5	140	56



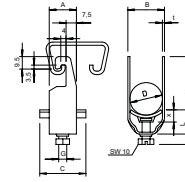
Clamp clip, single, metal pressure trough

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056U M 12 FT	8 - 12	100	3.300	1158007
2056U M 16 FT	12 - 16	100	3.520	1158015
2056U M 22 FT	16 - 22	100	3.960	1158023
2056U M 28 FT	22 - 28	100	5.890	1158031
2056U M 34 FT	28 - 34	100	7.650	1158058
2056U M 40 FT	34 - 40	100	8.360	1158066
2056U M 46 FT	40 - 46	100	10.890	1158074
2056U M 52 FT	46 - 52	100	11.660	1158082
2056U M 58 FT	52 - 58	100	14.740	1158090
2056U M 64 FT	58 - 64	100	15.730	1158104
2056U M 70 FT	64 - 70	50	18.200	1158112
2056U M 76 FT	70 - 76	25	20.600	1158120

St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 18 mm and 22 mm.



Dimensions

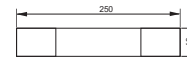
D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8-12	20	16	34	M6	1.5	5	42	34
12-16	20	20	34	M6	1.5	5	46	34
16-22	20	27	34	M6	1.5	5	53	34
22-28	20	33	34	M6	2	5	59	34
28-34	20	39	34	M8	2	5.5	67	37.5
34-40	20	45	34	M8	2	5.5	73	37.5
40-46	20	51	40	M8	2	5.5	79	37.5
46-52	20	57	40	M8	2	6.5	85	38.5
52-58	23	64	40	M8	2.5	6.5	91	38.5
58-64	23	70	40	M8	2.5	6.5	97	38.5
64-70	23	76	40	M8	2.5	6.5	103	38.5
70-76	25	82	40	M8	2.5	6.5	110	45.5

Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.

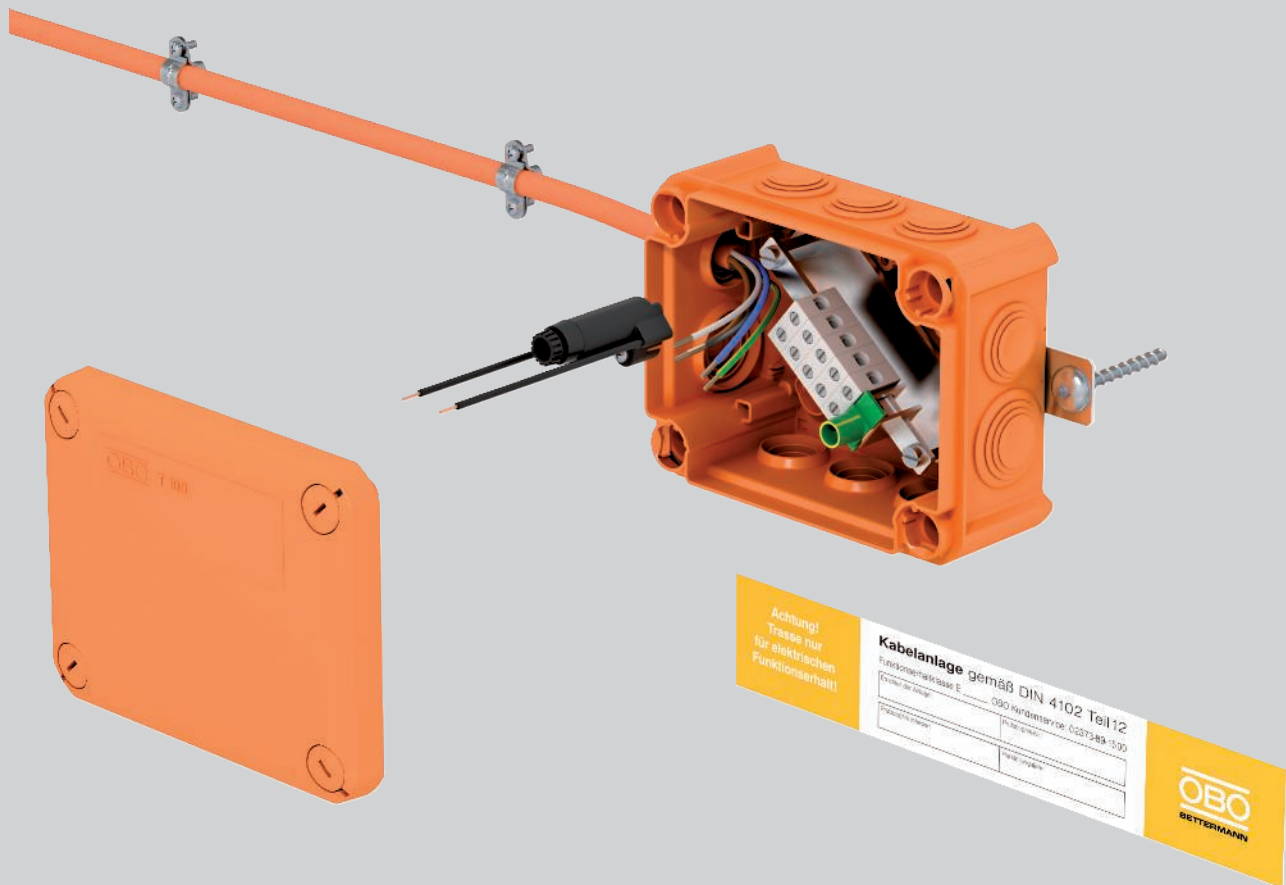




Maintaining electrical function - Junction boxes, individual routing, pipes and metal duct

	System description, junction boxes of the Firebox T series	168
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Junction box, FireBox System description



Junction boxes of the FireBox series are available for connecting and branching safety cables. These are equipped with a high-temperature-resistant connection unit with ceramic terminals and offer terminal areas of 0.5 mm² to 16 mm² of copper cross-section. The T series FireBoxes possesses all the benefits of thermoplastic cable junction boxes. These include the high IP protection rating of up to IP66 and the maximum impact resistance of up to IK10 and a high resistance to breakage. Boxes with soft plug-in seals or closed variants are available. Here, the cable glands can be located freely. Fastening either takes place on the out-

er straps or through the box base with fire protection bolt ties. The high-temperature-resistant terminals are pre-mounted on the connection unit. The protective conductor terminal is connected to the support clamp, meaning that covers of the metal parts are not required. The FireBox is tested and approved as a connection socket for maintenance of electrical functionality to DIN 4102 Part 12 with the classes E30, E60 and E90. A separate fuse holder allows protection of a branch.

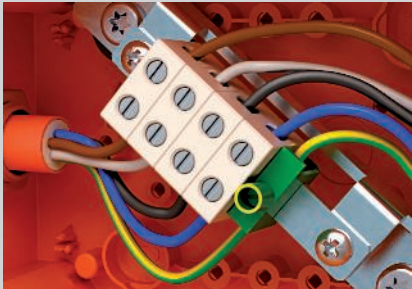
Junction box, FireBox
Installation principle



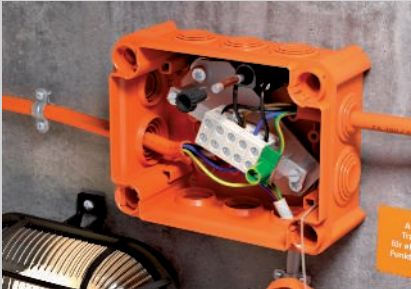
Fully installed FireBox with identification plate.



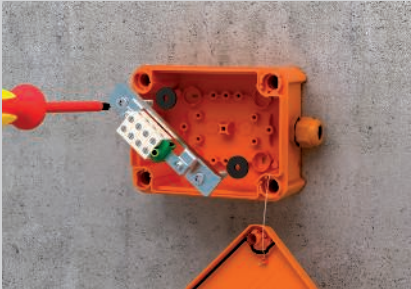
FireBox mounting with mounting plate on cable tray.



Version with 4 terminals and protective conductor terminal for power cables.



Cable entry with plug-in seals.



Mounting with fire protection bolt tie through the clamp and base of the FireBox.



Quick lid mounting through 90° rotation of the corner screws.

Classification according to DIN 4102 Part 12

E30 E60 E90

System description

Table with 2 columns: Property (Routing type, Test certificate no., Maintenance of electrical functionality classes, Testing standard) and Value (Thermoplastic junction box with high-temperature-resistant connection unit, P-MPA-E-08-016 in conjunction with the surveyor's report 210005956-6 and GS 3-2/13-370-1, E30 to E90, DIN 4102 Part 12).

Approved data

Clamping capacity of the ceramic terminals

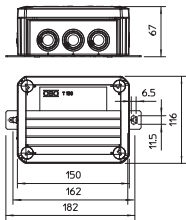
Table with 8 columns: Wire cross-section (0.5 mm², 1.5 mm², 2.5 mm², 4 mm², 6 mm², 10 mm², 16 mm²) and 4 rows: Terminal types (4 mm², 6 mm², 10 mm², 16 mm²) showing clamping capacity counts.

The data in the general construction test certificates of the materials testing office of North Rhine-Westphalia, Erwitte, applies.



FireBox with plug-in seal and external fastening

FireBox T100ED with external fastening



Type	Nominal cross-section mm²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 ED 6-5 A	6	5	8x M25 2x M32	1	38.500	7205540

PP Polypropylene

Halogen-free junction box with pre-mounted, soft plug-in seals, approved for maintaining electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with 2 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.

Power cable nominal cross-sections: 1.5 to 10 mm² depending on the type, data cables with 0.8 mm wire Ø. Several rigid copper wires with smaller cross-sections per terminal possible.

High protection rating IP66, impact resistance class IK08.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T350ED for data technology with external fastening

Type	Nominal cross-section mm²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 350 ED 4-28 AD	4	28	16x M32 8x M40	1	163.000	7205590

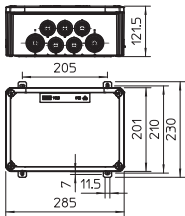
PP Polypropylene

Halogen-free junction box as small data distributor with pre-mounted, soft plug-in seals, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

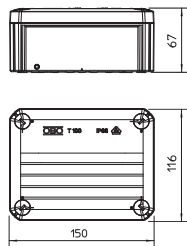
Colour: Pastel orange.

Fully mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminals. Supplied with 4 MMS 6x50 fire protection screw ties for anchorless fastening on the external straps.
For data cables with wire Ø 0.8 mm. Up to 6 rigid copper wires (0.5 mm²) possible on each terminal. High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.



FireBox T100E with internal fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 100 E 4-5	4	5	—	1	27.400	7205510

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

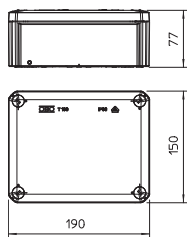
Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fire protection screw ties for anchorless fastening.

Power cable nominal cross-sections: 1.5 to 4 mm², data cables with 0.8 mm wire Ø. Maximum of two 1.5 mm² rigid copper cables per terminal (remove wire protection).

High protection rating IP66, impact resistance class IK07.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T160E with internal fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 E 10-5	10	5	—	1	48.700	7205524

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic and labelled protective conductor terminal. Supplied with fire protection screw ties for anchorless fastening.

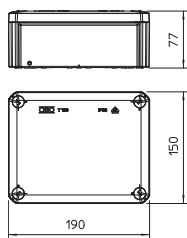
Nominal cross-sections of the power cable: 10 or 16 mm²

A maximum of 2 rigid copper cables of 2.5 mm² or 4 mm² per terminal (remove wire protection).

High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

FireBox T160E for data technology with internal fastening



Type	Nominal cross-section mm ²	Number of terminals	Entries	Pack. pcs	Weight kg/100 pcs.	Item No.
T 160 E 4-8D	4	8	—	1	46.500	7205520

PP Polypropylene

Halogen-free junction box, approved for the maintenance of electrical functionality according to DIN 4102 Part 12. Maintenance of electrical functionality to classes E30 to E90.

Colour: Pastel orange.

Including pre-mounted connection unit made of high temperature-resistant special ceramic with fire protection screw ties for anchorless fastening.

Nominal cross-section: data cables with 0.8 mm wire Ø.

High protection rating IP66, impact resistance class IK06.

Details on the cable types and manufacturers can be found in the general construction test certificate of the material testing institute NRW, Erwitte.

Cable gland with locknut as a set

Type	Thread	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
V-TEC VM20+ OR	M20 x 1,5	100	10	1.106	7205660
PA Polyamide					

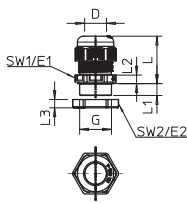
Robust cap nut cable gland with metric connecting thread to IEC 423, including pre-mounted locknut.

For high tightness requirements. Strain relief, wringing protection and tightness over the whole clamping area. Sealing ring made of polychloroprene/acrylonitrile butadiene rubber. Moulded shaped sealing lip on intermediate support, no connection thread sealing ring required.

VDE-tested according to DIN EN 50262, protection rating IP68 at 5 bar for 1 hr.

For maintenance of electrical function according to DIN 4102 Part 12 in connection with the junction boxes of the FireBox T series.

Colour: Pastel orange.



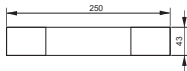
G	D	SW1	E1	SW2	E2	L min.	L max.	L1	L2	L3
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M20 x 1.5	6-13	24	27	24	27	23.5	30.5	9	5	6

Dimensions

Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432
PVC Polyvinylchloride				

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.





Grip M grouped support

System description



Cable routing with metal grouped supports is approved as a cable-specific routing type for the maintenance of electrical functionality classes E 30, E 60 and E 90 according to DIN 4102 Part 12. The collecting clamps used are made of sheet steel and can be opened and closed easily without the use of tools. To allow simple cable insertion, the supports can remain open during cable routing. Grouped supports for wall

and ceiling mounting are suitable. Depending on the tested cables and the grouped supports used for the tests, fastening spacings of maximum 0.8 m and a cable assignment of up to 6 kg/m are permitted. The instructions of the various cable manufacturers should be complied with.

Grip M grouped support
Installation principle



Horizontal wall and ceiling mounting.



Mounted grouped support 2031 M 15.



Easy insertion of the cables in the opened grouped support.

Classification according to DIN 4102 Part 12

E30

E60

E90

System description

Routing type	Cable-specific support construction
Test certificate no. M15/M30/M70	P-MPA-E-09-007
Test certificate no. M15/M30	P-3846/9913-MPA BS
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12

Approved data

Type	Fastening spacing	Cable assignment, max.
2031 M15	0.5 m	1.1 kg
2031 M30	0.5 m	2.5 kg
2031 M70	0.8 m	6.0 kg

With regard to the fastening distance and cable assignment, deviating values are possible, depending on the test certificates of the cable manufacturers.

During mounting, ensure that the closure of the grouped support is located at the side.

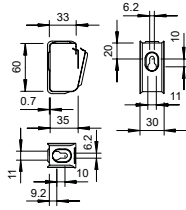
Always indicate the item number when ordering.





Grouped supports and pressure clips

GRIP "M" 15



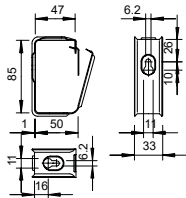
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 15 FS	15	50	50	3.700	2207028

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 30



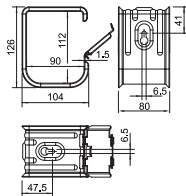
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 30 FS	30	25	25	6.200	2207036

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

GRIP "M" 70



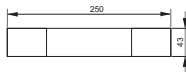
Type	No. of conductors NYM 3 x 1.5	Shipping box pcs	Pack. pcs	Weight kg/100 pcs.	Item No.
2031 M 70 FS	70	10	10	34.500	2207060

St Steel

FS Strip-galvanised

Metal cable tidy for high mechanical stability, even in case of fire. Suitable for safe mounting above fire protection ceilings. Also approved as a cable-specific variant for the maintenance of electrical function to DIN 4102 part 12. For wall and ceiling mounting. Lock can be opened without tools. Detailed information on the approved routing variants can be found in the appropriate testing documentation.

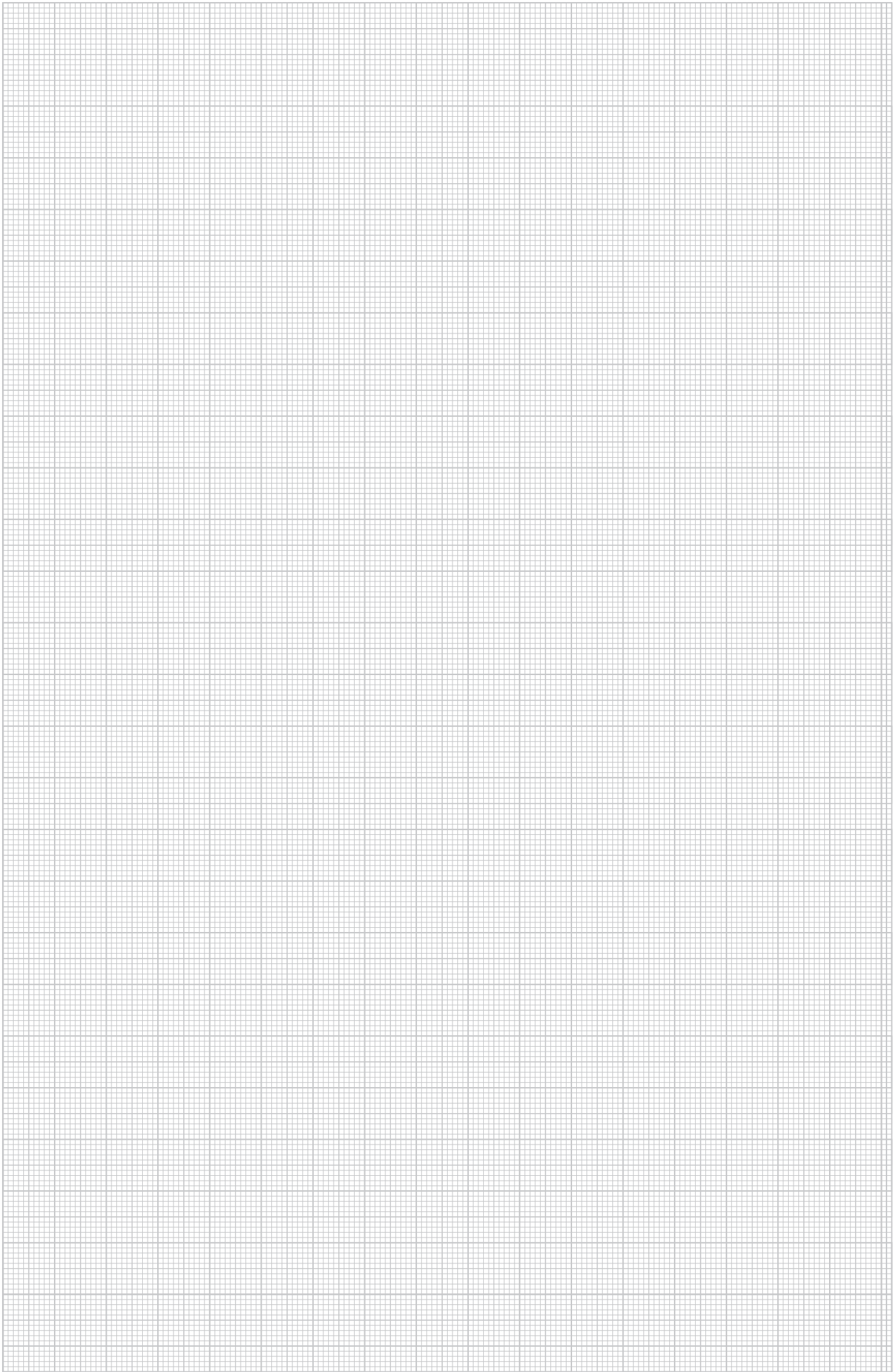
Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

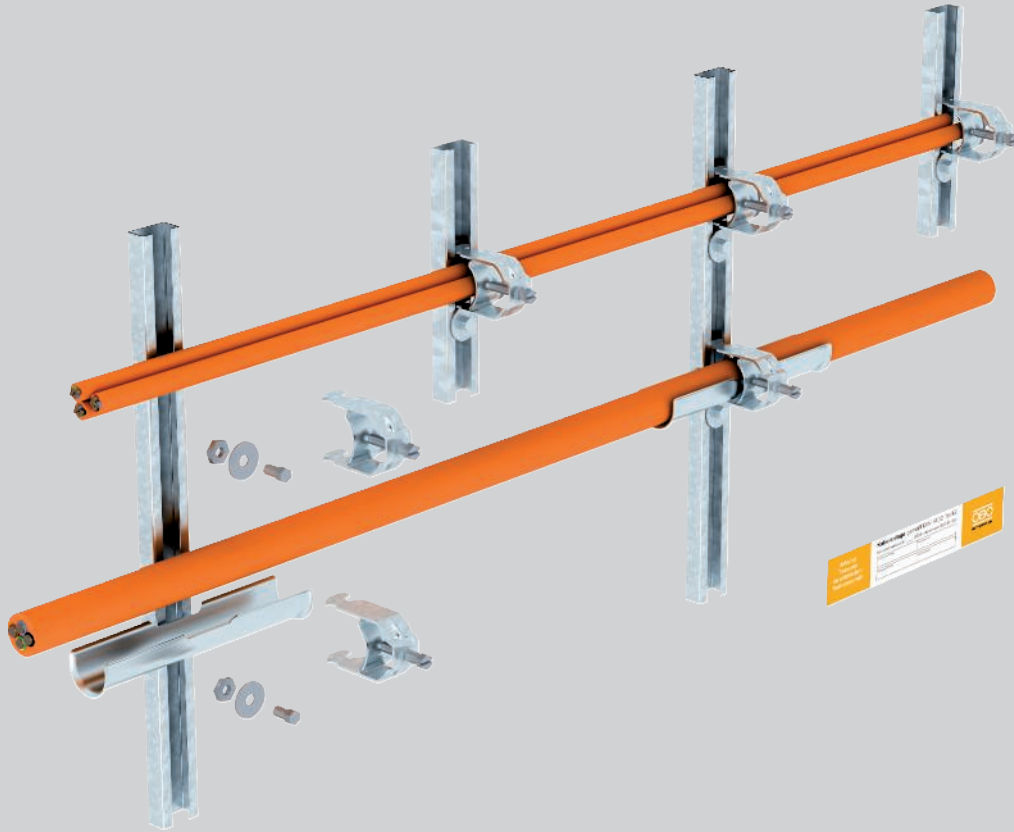
PVC Polyvinylchloride

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.



Clamp clips with profile rails

System description



The routing types with clamp clips fulfil all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E30 and E90. Mounting as a cable-specific routing type is possible, depending on the specifications of the cable manufacturer. The clamp clips can be used for horizontal cable routing on walls and ceilings and vertical routing on walls. The clamp clips are made of sheet steel with a riveted metal pressure

trough. Long troughs made of galvanised sheet steel can be used to increase the support area for the cables. These are inserted loosely between the cables and the metal pressure troughs of the clamp clips. Bundling of up to three cables in a clamp clip is possible. The individual diameter of the bundled cables may not exceed 25 mm. If only individual cables are installed, then there is no limit to the cable diameter.

Clamp clips with profile rails
Installation principle



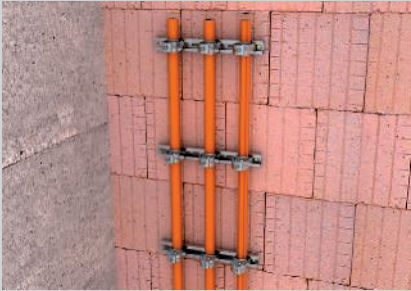
Horizontal mounting with clamp clips and long troughs on the wall and under the ceiling.



Horizontal cable mounting with clamp clips on the wall.



Horizontal cable mounting with clamp clips under the ceiling.



Vertical cable mounting with clamp clips on the wall.



Installation of the cables, either individually or as a bundle.



Effective support measure with ZSE90 strain relief.

Classification according to DIN 4102 Part 12

E30 E60 E90

System description

Table with 2 columns: Property and Value. Rows include Routing type, Surveyor's report no., Maintenance of electrical functionality classes, and Testing standard.

Approved data

Table with 2 columns: Parameter and Value. Rows include Rail fastening distance, Max. anchor spacing in rail, Max. individual cable diameter, Max. cable bundle, and Cable-specific.

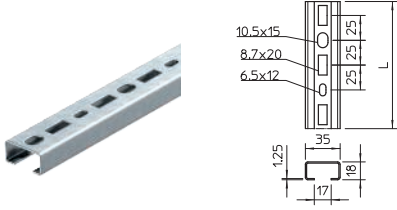
Standard routing type: The data of the surveyor's report applies, together with a valid, general construction test certificate of a materials testing institute for the cable type to be used.
Cable-specific routing type: A general construction test certificate of a materials testing institute for the cable type to be used is sufficient as proof.
With regard to the fastening distance and cable assignment, the details from the appropriate test certificate must be taken into account.

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Profile rails and clamp clips

CM3518 profile rail, slot 17 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
CML3518P1000FS	1000	35 x 18	1.25	1000	1	71.000	1104497
CML3518P2000FS	2000	35 x 18	1.25	2000	2	71.000	1104500

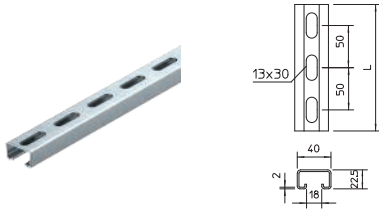
Sl Steel

FS Strip-galvanised

Light-duty profile rail, perforated, slot width 17 mm.

Dimensions

MS4022 mounting rail, heavy-duty, slot 18 mm, perforated



Type	Length mm	Dimension W x H mm	Material thickness mm	Dimen- sion L mm	Pack. m	Weight kg/100 m	Item No.
MS4022P2000FT	2000	40 x 22,5	2	2000	10	152.500	1121979

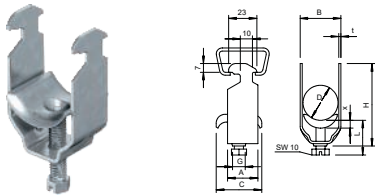
Sl Steel

FT Hot-dip galvanised

Heavy-duty C profile rail for individual installation of support constructions, e.g. for cable trays or as a panel for switchgear cabinets. Can also be used for cable routing, in conjunction with clamp clips with a U foot.

Dimensions

Clamp clip, single, metal pressure trough



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056 M 12 FT	8 - 12	100	3.200	1156004
2056 M 16 FT	12 - 16	100	3.500	1156012
2056 M 22 FT	16 - 22	100	4.400	1156020
2056 M 28 FT	22 - 28	100	6.100	1156039
2056 M 34 FT	28 - 34	100	7.700	1156047
2056 M 40 FT	34 - 40	100	8.600	1156055
2056 M 46 FT	40 - 46	100	9.600	1156063
2056 M 52 FT	46 - 52	100	10.400	1156071
2056 M 58 FT	52 - 58	100	13.100	1156098
2056 M 64 FT	58 - 64	100	14.500	1156101
2056 M 70 FT	64 - 70	50	16.100	1156128
2056 M 76 FT	70 - 76	25	18.300	1156136
2056 M 82 FT	76 - 82	25	19.100	1156144
2056 M 90 FT	82 - 90	25	23.300	1156152
2056 M 100 FT	90 - 100	25	24.500	1156160

Sl Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 16–17 mm.

Clip, bolt and pressure trough made of hot-dip galvanised steel.

Dimensions

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8–12	23	16	30	M6	1.5	3.5	40	32.5
12–16	23	20	30	M6	1.5	3.5	44	32.5
16–22	23	27	30	M6	1.5	4.5	50	46.5
22–28	23	33	30	M6	2	4.5	58	46.5
28–34	23	39	35	M8	2	5	66	44
34–40	23	45	35	M8	2	5	72	44
40–46	23	51	35	M8	2	5	79	44
46–52	23	57	35	M8	2	5	86	44
52–58	23	64	35	M8	2.5	5	93	44
58–64	23	70	35	M8	2.5	5	99	56
64–70	25	76	35	M8	2.5	5	106	56
70–76	25	82	40	M8	2.5	5	114	56
76–82	25	88	40	M8	2.5	5	121	56
82–90	25	97	40	M8	3	5	130	56
90–100	25	107	40	M8	3	5	140	56

Clamp clip, single, metal pressure trough

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
2056U M 12 FT	8 - 12	100	3.300	1158007
2056U M 16 FT	12 - 16	100	3.520	1158015
2056U M 22 FT	16 - 22	100	3.960	1158023
2056U M 28 FT	22 - 28	100	5.890	1158031
2056U M 34 FT	28 - 34	100	7.650	1158058
2056U M 40 FT	34 - 40	100	8.360	1158066
2056U M 46 FT	40 - 46	100	10.890	1158074
2056U M 52 FT	46 - 52	100	11.660	1158082
2056U M 58 FT	52 - 58	100	14.740	1158090
2056U M 64 FT	58 - 64	100	15.730	1158104
2056U M 70 FT	64 - 70	50	18.200	1158112
2056U M 76 FT	70 - 76	25	20.600	1158120

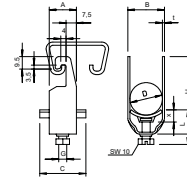
St Steel

FT Hot-dip galvanised

Suitable for all C profile rails with slot width 18 mm and 22 mm.

D mm	A mm	B mm	C mm	G	t mm	x mm	H mm	L mm
8-12	20	16	34	M6	1.5	5	42	34
12-16	20	20	34	M6	1.5	5	46	34
16-22	20	27	34	M6	1.5	5	53	34
22-28	20	33	34	M6	2	5	59	34
28-34	20	39	34	M8	2	5.5	67	37.5
34-40	20	45	34	M8	2	5.5	73	37.5
40-46	20	51	40	M8	2	5.5	79	37.5
46-52	20	57	40	M8	2	6.5	85	38.5
52-58	23	64	40	M8	2.5	6.5	91	38.5
58-64	23	70	40	M8	2.5	6.5	97	38.5
64-70	23	76	40	M8	2.5	6.5	103	38.5
70-76	25	82	40	M8	2.5	6.5	110	45.5

Dimensions



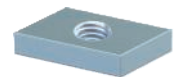
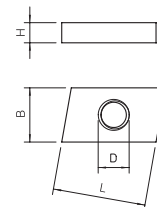
Slide nut

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
ACMSN M6 ZL	26	16.5	4	100	1.740	1147056

St Steel

ZL Zinc scale

Slide nut for use with CM3015, CM3518 and AM3518 profile rails



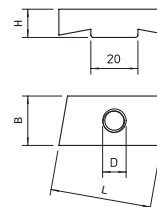
Slide nut

Type	Dimen- sion L mm	Dimen- sion B mm	Dimen- sion H mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MS40SN M6 ZL	35	17	10	50	3.750	1147106

St Steel

ZL Zinc scale

Slide nut for use with MS4022 profile rail



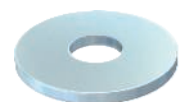
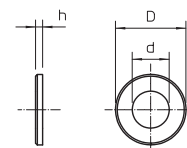
Large washer

Type	Dimen- sion D mm	Dimen- sion d mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
DIN440 7 F	22	6.6	2	100	0.550	6408702

St Steel

F Hot-dip galvanised

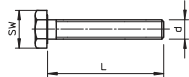
Washer of particularly large outer diameter.





Profile rails and clamp clips

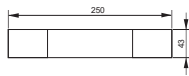
Hexagonal bolt ISO 4017



Type	Thread	Dimension mm	Dimen- sion L mm	Dimen- sion d mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HHS M6x16 G	M6	M6 x 16	16	6	10	100	0.494	3156141
St	Steel							
G	Electrogalvanised							

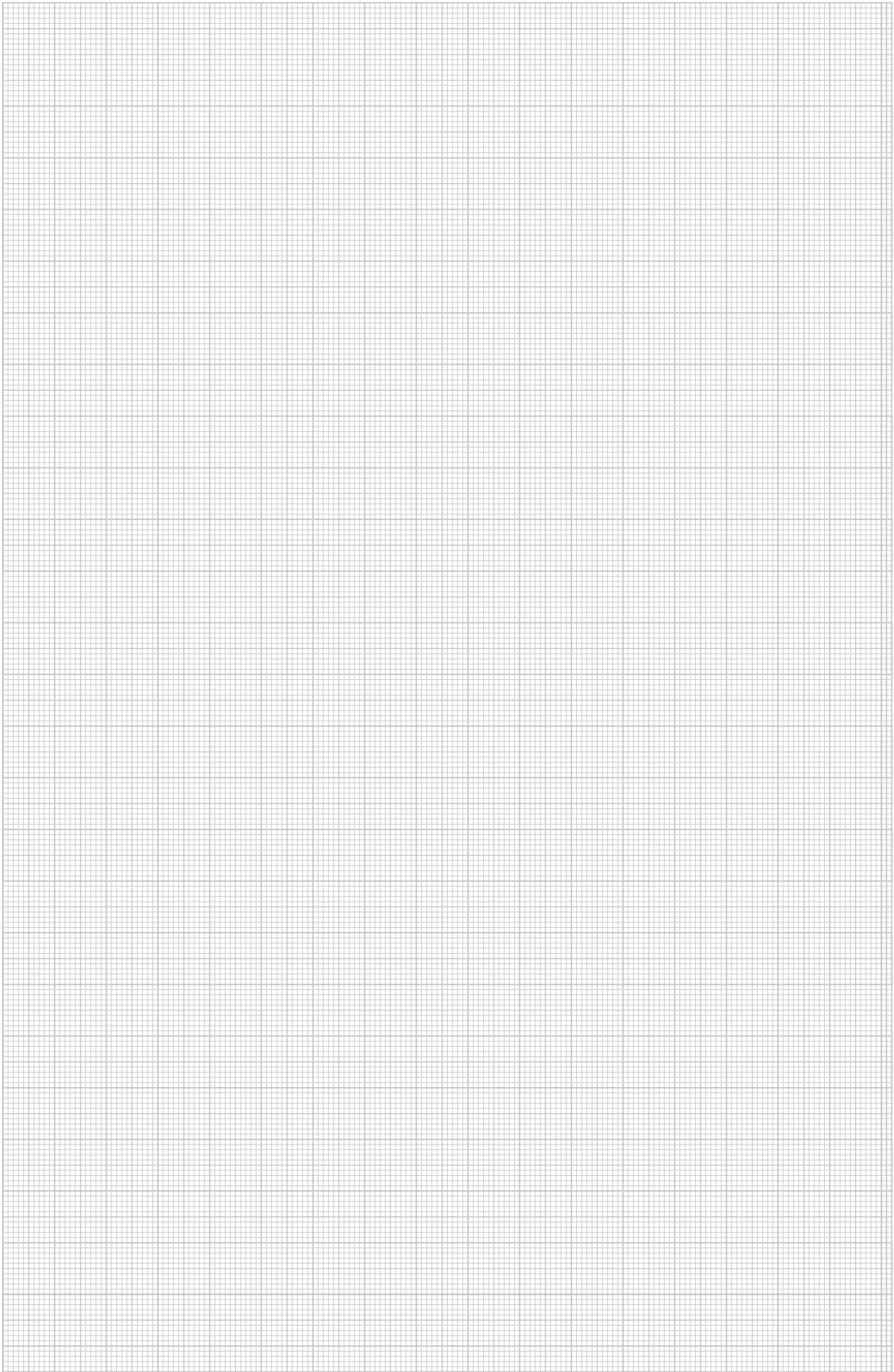
Hexagonal bolt to ISO 4017 with metric thread

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432
PVC	Polyvinylchloride			

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.





Screw-in spacer clips

System description



The routing types with single clips fulfil all the requirements of DIN 4102 Part 12 as a standard support structure for the maintenance of electrical functionality classes E 30, E 60 and E 90. In addition, mounting of the single clips as a cable-specific routing type is possible, depending on the specifications of the cable manufacturer. The screw-in spacer clips can be used for horizontal cable routing on walls and ceilings and vertical routing on walls. The closed screw-in spacer clips are made of galvanised sheet steel. Mounting is

carried out either by pushing through the slots of the clips or by screwing onto a fire protection anchor with threaded tip M6. Bundling of up to three cables together in a single clamp clip is possible for mounting as a standard support structure. The individual diameter of the bundled cables may not exceed 25 mm. There is no limit to the diameter of installed individual cables with screw-in spacer clips.

Screw-in spacer clips
Installation principle



Horizontal cable mounting on the wall.



Mounting under the ceiling.



Vertical cable installation as individual and bundle routing on the wall.



Bundled cable routing under the ceiling.



Effective support measure with ZSE90 strain relief.

Classification according to DIN 4102 Part 12

E30

E60

E90

System description

Routing type	Standard support structure Cable-specific support construction
Surveyor's report no.	3038/625/11-3-CM (standard)
Maintenance of electrical functionality classes	E30 to E90
Testing standard	DIN 4102 Part 12

Approved data

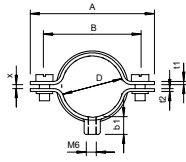
Max. fastening spacing	0.3 m as standard support structure
Max. individual cable diameter	63 mm
Max. cable bundle	3x Ø 25 mm
Cable-specific	Cable types and mounting parameters dependent on the cable manufacturer

Standard routing type:
The data of the surveyor's report applies, together with a valid, general construction test certificate of a materials testing institute for the cable type to be used.

Cable-specific routing type:
A general construction test certificate of a materials testing institute for the cable type to be used is sufficient as proof.

With regard to the fastening distance and cable assignment, the details from the appropriate test certificate must be taken into account.

Cable and pipe spacer clip 732 with threaded connection



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
732 6 GTP	5 - 6	100	1.160	1360051
732 8 GTP	7 - 8	100	1.310	1360086
732 10 GTP	9 - 10	100	1.360	1360108
732 12 GTP	10.5 - 12	100	1.460	1360124
732 14 GTP	12.5 - 14	100	1.480	1360140
732 15 GTP	13.5 - 15	100	1.530	1360159
732 16 GTP	14.5 - 16	100	1.590	1360167
732 18 GTP	16.5 - 18	100	1.620	1360183
732 20 GTP	18.5 - 20	50	1.730	1360205
732 22 GTP	20 - 22	50	1.780	1360221
732 24 GTP	22 - 24	50	1.840	1360248
732 26 GTP	24 - 26	50	1.920	1360264
732 28 GTP	26 - 28	50	2.840	1360280
732 30 GTP	28 - 30	50	3.040	1360302
732 33 GTP	31 - 33	25	3.120	1360337
732 35 GTP	33 - 35	25	3.280	1360353
732 38 GTP	36 - 38	25	3.490	1360388
732 40 GTP	38 - 40	25	3.600	1360396
732 42 GTP	40 - 42	25	3.840	1360426
732 45 GTP	43 - 45	25	3.990	1360450
732 48 GTP	46 - 48	25	4.040	1360485
732 50 GTP	48 - 50	25	4.160	1360507
732 60 GTP	58 - 60	25	4.960	1360604
732 63 GTP	61 - 63	25	5.000	1360639

St Steel

GTP Electrogalvanised, transparently passivated

Mounting with screw-in spacer clips. Spacer clips and screw-in spacer clips are available in various materials: in V2A stainless steel, in electrogalvanised, hot-dip galvanised steel or in aluminium. Fastening can take place with bolt ties or angler anchors and Sprint screws.

Depending on the design, the clips can be "shot" using a bolt-firing tool or nail device.

Dimensions

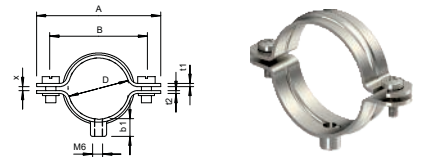
D mm	A mm	B mm	x mm	b1 mm	t1 mm	t2 mm	M
5-6	35	23	1	8	1	1.25	M5 x 10
7-8	34	22	1	8	1	1.25	M5 x 10
9-10	36	24	1	8	1	1.25	M5 x 12
10.5-12	38	26	1.5	8	1	1.25	M5 x 12
12.5-14	40	28	1.5	8	1	1.25	M5 x 12
13.5-15	41	29	1.5	8	1	1.25	M5 x 12
14.5-16	42	30	1.5	8	1	1.25	M5 x 12
16.5-18	44	32	1	8	1	1.25	M5 x 12
18.5-20	46	34	1.5	8	1	1.25	M5 x 12
20-22	48	36	2	8	1	1.25	M5 x 12
22-24	50	38	2	8	1	1.25	M5 x 12
24-26	52	40	2	8	1	1.25	M5 x 12
26-28	59	45	2	8.5	1.5	1.5	M5 x 12
28-30	61	47	2	8.5	1.5	1.5	M5 x 12
31-33	64	50	2	8.5	1.5	1.5	M5 x 12
33-35	66	52	2	8.5	1.5	1.5	M5 x 12
36-38	69	55	2	8.5	1.5	1.5	M5 x 12
38-40	71	57	2	8.5	1.5	1.5	M5 x 12
40-42	73	59	2	8.5	1.5	1.5	M5 x 12
43-45	76	62	2	8.5	1.5	1.5	M5 x 12
46-48	79	65	2	8.5	1.5	1.5	M5 x 12
48-50	81	67	2	8.5	1.5	1.5	M5 x 14
58-60	91	77	2	8.5	1.5	1.5	M5 x 14
61-63	94	80	2	9.2	1.5	1.5	M5 x 14

Cable and pipe spacer clip 732 with threaded connection V4A

Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
732 6 A4	5 - 6	100	1.364	1360644
732 8 A4	7 - 8	100	1.376	1360646
732 10 A4	9 - 10	100	1.467	1360648
732 12 A4	10.5 - 12	100	1.622	1360650
732 14 A4	12.5 - 14	100	1.710	1360652
732 15 A4	13.5 - 15	100	1.791	1360654
732 16 A4	14.5 - 16	100	1.845	1360656
732 18 A4	16.5 - 18	100	1.889	1360658
732 20 A4	18.5 - 20	50	1.960	1360660
732 22 A4	20 - 22	50	1.999	1360662
732 24 A4	22 - 24	50	2.062	1360664
732 26 A4	24 - 26	50	2.083	1360666
732 28 A4	26 - 28	50	2.923	1360668
732 30 A4	28 - 30	50	3.047	1360670
732 33 A4	31 - 33	25	3.186	1360672
732 38 A4	36 - 38	25	3.453	1360676
732 40 A4	38 - 40	25	3.554	1360678
732 42 A4	40 - 42	25	3.650	1360680
732 45 A4	43 - 45	25	3.810	1360682
732 48 A4	46 - 48	25	3.972	1360684
732 50 A4	48 - 50	25	4.045	1360686
732 60 A4	58 - 60	25	4.582	1360688
732 63 A4	61 - 63	25	4.712	1360690

V4A Stainless steel, A4

Mounting with screw-in spacer clips. Spacer clips and screw-in spacer clips are available in various materials: in V2A stainless steel, in electrogalvanised, hot-dip galvanised steel or in aluminium. Fastening can be take place with bolt ties or Angler anchors and Sprint screws. Depending on the design, the clips can be "shot" using a bolt-firing tool or nail device.



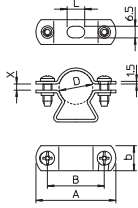
D mm	A mm	B mm	x mm	b1 mm	t1 mm	t2 mm	M
5-6	35	23	1	9.8	1	1.25	M5 x 10
7-8	34	22	1	9.8	1	1.25	M5 x 10
9-10	36	24	1	9.8	1	1.25	M5 x 12
10.5-12	38	26	1.5	9.8	1	1.25	M5 x 12
12.5-14	40	28	1.5	9.8	1	1.25	M5 x 12
13.5-15	41	29	1.5	9.8	1	1.25	M5 x 12
14.5-16	42	30	1.5	9.8	1	1.25	M5 x 12
16.5-18	44	22	1.5	9.8	1	1.25	M5 x 12
18.5-20	46	34	1.5	9.8	1	1.25	M5 x 12
20-22	48	36	2	9.8	1	1.25	M5 x 12
22-24	50	38	2	9.8	1	1.25	M5 x 12
24-26	52	40	2	10	1	1.25	M5 x 12
26-28	59	45	2	10	1.5	1.5	M5 x 12
28-30	61	47	2	10	1.5	1.5	M5 x 12
31-33	64	50	2	10	1.5	1.5	M5 x 12
36-38	69	55	2	10	1.5	1.5	M5 x 12
38-40	71	57	2	10	1.5	1.5	M5 x 12
40-42	73	59	2	10	1.5	1.5	M5 x 12
43-45	76	62	2	10	1.5	1.5	M5 x 12
46-48	79	65	2	10	1.5	1.5	M5 x 12
48-50	81	67	2	10	1.5	1.5	M5 x 14
58-60	91	77	2	10	1.5	1.5	M5 x 14
61-63	94	80	2	10	1.5	1.5	M5 x 14

Dimensions



Screw-in spacer clips

Cable and pipe spacer clip 733



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
733 21 G	19 - 21	50	2.730	1361201
733 23 G	21 - 23	50	2.870	1361236
733 29 G	24 - 29	50	3.480	1361295
733 38 G	30 - 38	25	4.040	1361384
733 48 G	39 - 48	25	4.810	1361481
733 54 G	48 - 54	25	5.800	1361511
733 61 G	53 - 61	20	6.370	1361619
733 63 G	63	20	6.940	1361635
733 19 FT	17 - 19	50	2.500	1361097
733 21 FT	19 - 21	50	2.730	1361100
733 23 FT	21 - 23	50	2.870	1361103
733 29 FT	24 - 29	50	3.480	1361106
733 38 FT	30 - 38	25	4.040	1361109
733 48 FT	39 - 48	25	4.810	1361112
733 54 FT	48 - 54	25	5.400	1361117
733 61 FT	53 - 61	20	6.100	1361115
733 63 FT	63	20	7.250	1361118

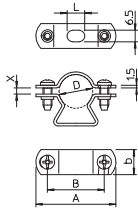
St Steel

G Electrogalvanised **FT** Hot-dip galvanised

Dimensions

D mm	A mm	B mm	L mm	b mm	x mm
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
63	101	83	18	16	3
17-19	45	32	10	14	3.5
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10
63	101	83	18	16	3

Cable and pipe spacer clip 733 V2A



Type	Clamping range D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
733 19 A2	17 - 19	50	2.800	1362038
733 21 A2	19 - 21	50	2.740	1362046
733 23 A2	21 - 23	50	2.800	1362054
733 29 A2	24 - 29	50	3.475	1362062
733 38 A2	30 - 38	25	4.500	1362070
733 48 A2	39 - 48	25	5.200	1362089
733 54 A2	48 - 54	25	5.800	1362097
733 61 A2	53 - 61	20	6.800	1362100

V2A Stainless steel, A2

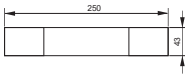
Dimensions

D mm	A mm	B mm	L mm	b mm	x mm
17-19	45	32	10	14	3.5
19-21	50	37	10	14	2
21-23	52	39	10	14	2.5
24-29	58	42	10	16	7
30-38	70	54	10	16	10
39-48	80	64	14	16	12.5
48-54	86	68	14	18	7.5
53-61	96	78	14	18	10

Identification plate for function maintenance

Language		Pack.	Weight	Item No.
Type		pcs	kg/100 pcs.	
KS-E EN	English	10	0.600	7205432
PVC	Polyvinylchloride			

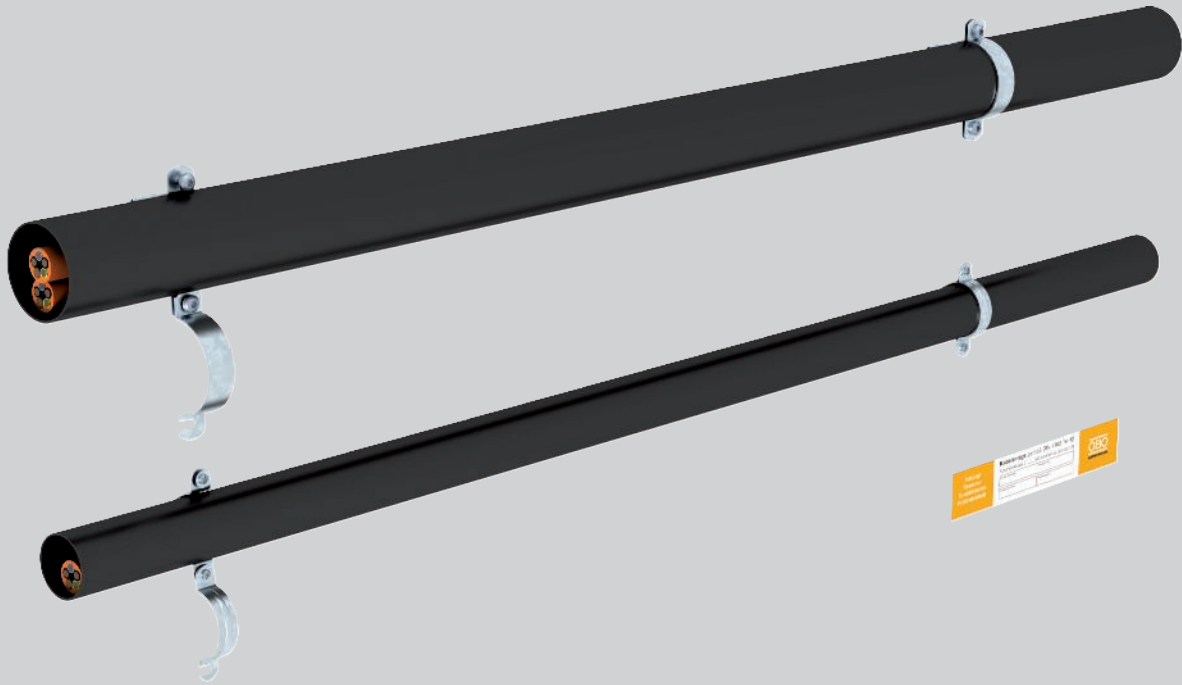
Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.





Cable routing in pipes

System description



Cable routing in the steel pipe, in combination with clamp clips or with screw-in spacer clips, fulfils the requirements of DIN 4102 Part 12 as a cable-specific routing type for the maintenance of electrical functionality classes E 30, E 60 and E 90. The steel pipes may be routed horizontally on the wall or under the ceiling and offer additional mechanical protection of the installed cables. Sheet steel clamp clips are used

together with a riveted metal pressure sleeve and the appropriate profile rails, or closed screw-in spacer clips made of galvanised sheet steel. Refer to the available test certificates of the cable manufacturer for the maximum possible dimensions of the pipes, the maximum fastening spacing of the clips and the number of cables to be run in the pipe.

Cable routing in pipes
Installation principle



Ceiling mounting with screw-in spacer clip and clamp clip.



Horizontal wall mounting with screw-in spacer clip and clamp clip.



Space-saving installation of multiple pipes next to one another with clamp clips.



Insertion into the screw-in spacer clip by hooking the cover under the screw.



Multiple assignment according to the data of the test reports.

Classification according to DIN 4102 Part 12

E30 E60 E90

System description

Table with 2 columns: Property, Value. Rows: Routing type (Cable-specific support construction), Maintenance of electrical functionality classes (E30 to E90), Testing standard (DIN 4102 Part 12).

Approved data

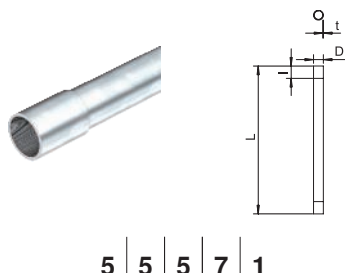
Table with 2 columns: Cable-specific, Cable types and mounting parameters dependent on the cable manufacturer.

The data in the general construction test certificates applies.

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Pipes

Electrogalvanised steel pipe, with thread



Type	Thread	Dimension D mm	Dimension L mm	Dimension I mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
SM16W G	M16x1,5	16	3000	13	1.3	30	50.390	2046861
SM20W G	M20x1,5	20	3000	13	1.5	30	66.667	2046862
SM25W G	M25x1,5	25	3000	18	1.5	30	92.290	2046863
SM32W G	M32x1,5	32	3000	18	1.5	21	120.000	2046864
SM40W G	M40x1,5	40	3000	20.5	1.5	15	151.450	2046865
SM50W G	M50x1,5	50	3000	25	1.5	15	190.000	2046866
SM63W G	M63x1,5	63	3000	25	1.7	9	287.700	2046867

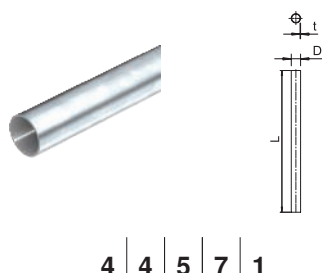
St Steel

G Electrogalvanised

Electrical installation pipe according to EN 61386-1 with threaded ends to EN 60423 for mechanical protection of cables.

With burr-free inner wall. One coupling is already screwed onto each pipe.

Armoured steel pipe without thread, electrogalvanised



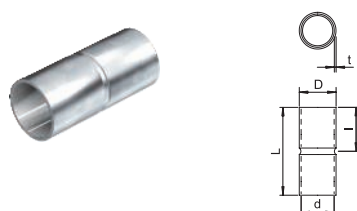
Type	Dimension D mm	Dimension L mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
S16W G	16	3000	1	30	37.000	2046840
S20W G	20	3000	1	30	44.700	2046841
S25W G	25	3000	1.2	30	70.400	2046842
S32W G	32	3000	1.2	21	91.200	2046843
S40W G	40	3000	1.2	15	139.700	2046844
S50W G	50	3000	1.2	15	176.000	2046845
S63W G	63	3000	1.2	9	223.000	2046846

St Steel

G Electrogalvanised

Electrical installation pipe without threaded ends according to EN 61386-1 for mechanical protection of cables. With burr-free inner wall.

Armoured steel pipe connection sleeve without thread, electrogalvanised



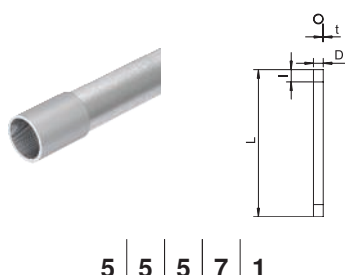
Type	Dimension D mm	Dimension d mm	Dimension L mm	Dimension I mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs	Item No.
SV16W G	18.6	16.6	50	25	1	25	2.400	2046854
SV20W G	23.1	20.7	60	30	1.2	50	4.000	2046855
SV25W G	28.1	25.7	60	30	1.2	50	5.200	2046856
SV32W G	35.2	32.8	70	35	1.2	50	7.200	2046857
SV40W G	43.8	43.8	80	40	1.5	25	13.200	2046858
SV50W G	54	51	100	50	1.5	10	20.000	2046859
SV63W G	67	64	100	50	1.5	5	28.000	2046860

St Steel

G Electrogalvanised

Accessory part: plug-in sleeve for the connections between electrical installation pipes. With burr-free inner wall.

Hot-dip galvanised steel pipe, with thread



Type	Thread	Dimension D mm	Dimension L mm	Dimension I mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
SM16W FT	M16x1,5	16	3000	13	1.3	30	54.000	2046533
SM20W FT	M20x1,5	20	3000	13	1.5	30	79.000	2046534
SM25W FT	M25x1,5	25	3000	18	1.5	30	99.000	2046535
SM32W FT	M32x1,5	32	3000	18	1.5	21	130.000	2046536
SM40W FT	M40x1,5	40	3000	20.5	1.5	15	164.000	2046537
SM50W FT	M50x1,5	50	3000	25	1.5	15	206.000	2046538
SM63W FT	M63x1,5	63	3000	26	1.8	9	324.700	2046540

St Steel

FT Hot-dip galvanised

Electrical installation pipe according to EN 61386-1 with threaded ends to EN 60423 for mechanical protection of cables.

With burr-free inner wall. Corrosion protection class 4 (high). One coupling is already screwed onto each pipe.

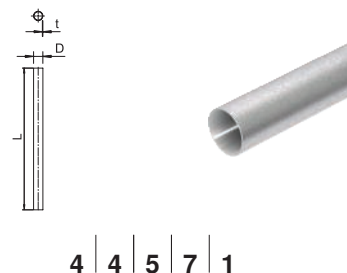
Hot-dip galvanised steel pipe, without thread

Type	Dimension D mm	Dimension L mm	Dimension t mm	Pack. m	Weight kg/100 m	Item No.
S16W FT	16	3000	1	30	37.000	2046593
S20W FT	20	3000	1	30	44.700	2046594
S25W FT	25	3000	1.2	30	70.400	2046595
S32W FT	32	3000	1.2	21	91.200	2046596
S40W FT	40	3000	1.2	15	139.700	2046597
S50W FT	50	3000	1.2	15	176.000	2046598
S63W FT	63	3000	1.2	9	223.000	2046599

St Steel

FT Hot-dip galvanised

Electrical installation pipe without threaded ends according to EN 61386-1 for mechanical protection of cables. With burr-free inner wall. Corrosion protection class 4 (high).



4 | 4 | 5 | 7 | 1

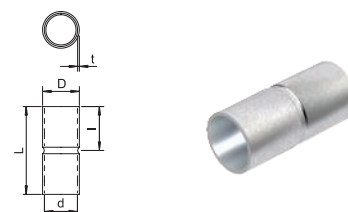
Hot-dip galvanised steel sleeve, without thread

Type	Dimension D mm	Dimension d mm	Dimension L mm	Dimension l mm	Dimension t mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SV16W FT	18.6	16.6	50	25	1	25	2.200	2046620
SV20W FT	23.1	20.7	60	30	1.2	50	3.200	2046621
SV25W FT	28.1	25.7	60	30	1.2	50	5.600	2046622
SV32W FT	35.2	32.8	70	35	1.2	50	7.800	2046623
SV40W FT	43.8	40.8	80	40	1.5	25	14.400	2046624
SV50W FT	54	51	100	50	1.5	10	22.000	2046625
SV63W FT	67	63	100	50	1.5	5	28.000	2046626

St Steel

FT Hot-dip galvanised

Accessory part: plug-in sleeve for the connections between electrical installation pipes. With burr-free inner wall.

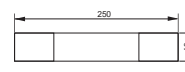


Identification plate for function maintenance

Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432

PVC Polyvinylchloride

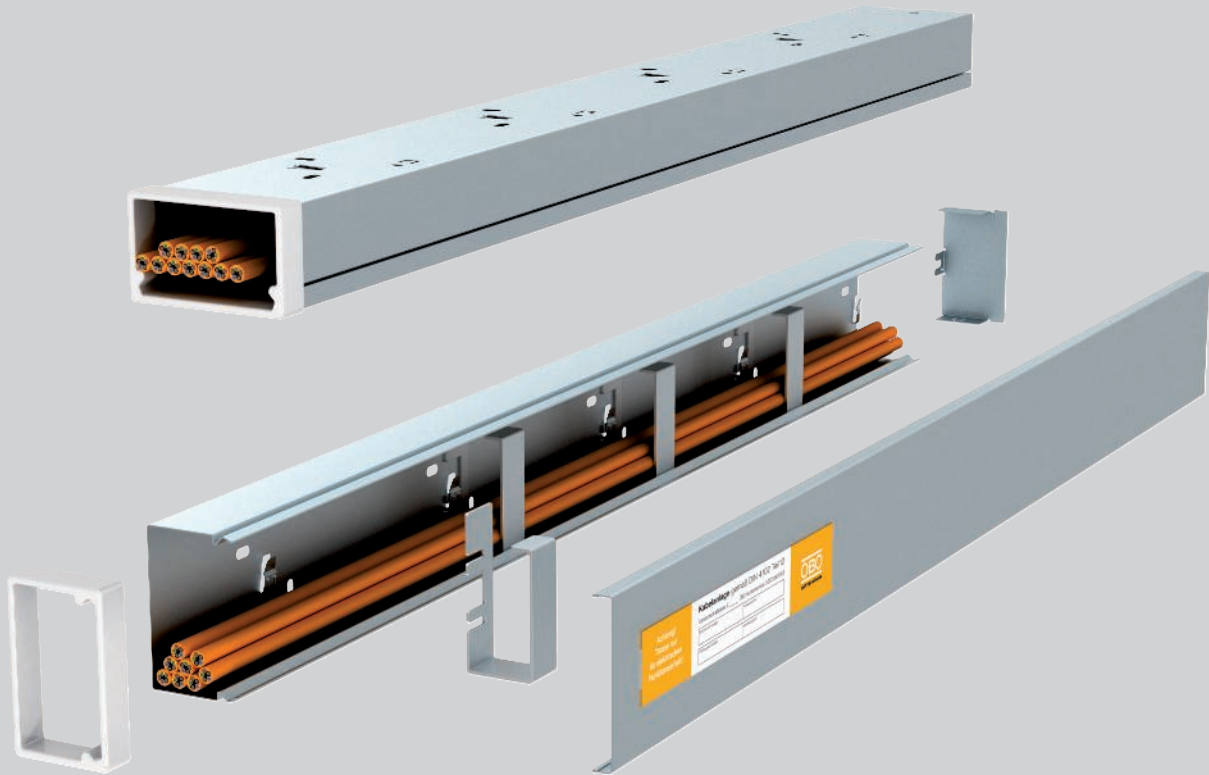
Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.





LKM cable trunking

System description



Cable routing with metal cable trunking, type LKM, is approved as a cable-specific routing type for the maintenance of electrical function classes E 30, E 60 and E 90 according to DIN 4102 Part 12. The trunking may be routed horizontally on the wall or under the ceiling and offer additional mechanical protection of the installed cables. This installation variant is also used if, for reasons of appearance, open routing of

the cables with the maintenance of electrical function is not wanted. 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. When cable installation has been completed, the trunking cover is locked onto the trunking base.

LKM cable trunking

Installation principle



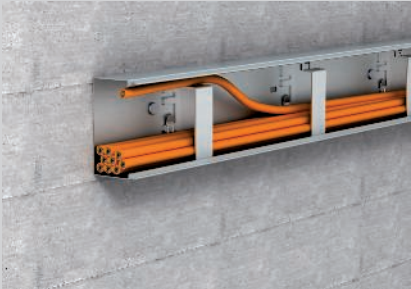
Horizontal wall and ceiling mounting.



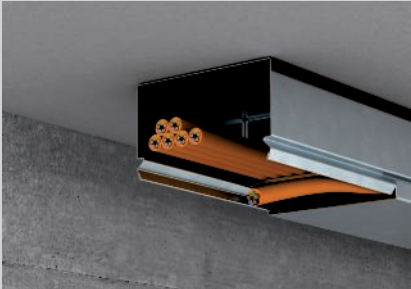
Routing of power, data or fire alarm cables in the trunking, type LKM60100.



Tidy routing of data and fire alarm cables in the trunking, type 20030.



Retaining clamps locked into the base as installation aid for wall mounting.



Retaining clamps as mounting aid for the insertion of cables for ceiling mounting.



Closing of the trunking by simple locking of the lid onto the trunking base.

Classification according to DIN 4102 Part 12

E30

E60

E90

System description

Routing type	Cable-specific support construction
Test certificate no.	P-MPA-E-11-008
Maintenance of electrical functionality classes	E30 and E90
Testing standard	DIN 4102 Part 12

Approved data

Type	Cable types	Fastening spacing	Cable load
LKM 20030	Data cable	max. 40 cm	max. 0.3 kg/m
LKM 60100	Power cable	max. 49 cm	max. 3.0 kg/m

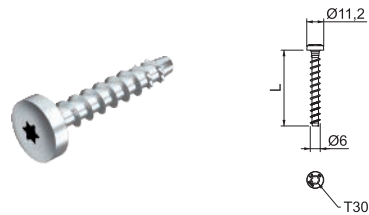
The data in the general construction test certificates for the appropriate cable type applies.





LKM cable routing duct

Fire protection screw tie

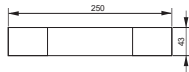


Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 6X50	6 x 50	50	5	11.2	Torx	100	1.000	3498108
MMS-plus 6X35	6 x 50	50	5	11.2	Torx	100	0.900	3498103

- Si Steel
- G Electrogalvanised

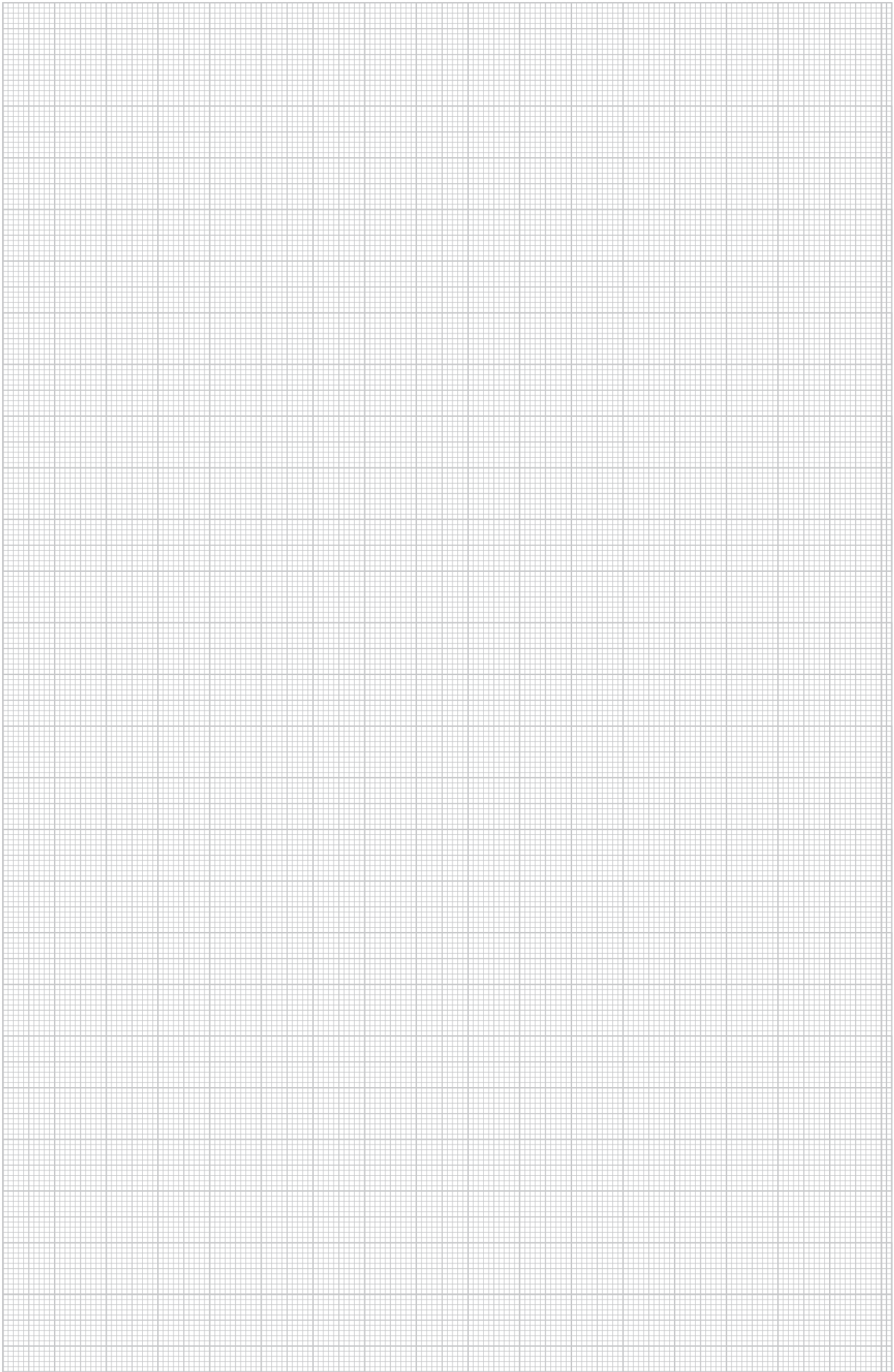
Fire protection bolt tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Identification plate for function maintenance



Type	Language	Pack. pcs	Weight kg/100 pcs.	Item No.
KS-E EN	English	10	0.600	7205432
PVC	Polyvinylchloride			

Self-adhesive identification plate for approved cable system labelling for maintenance of electrical function as required by DIN 4102 part 12.





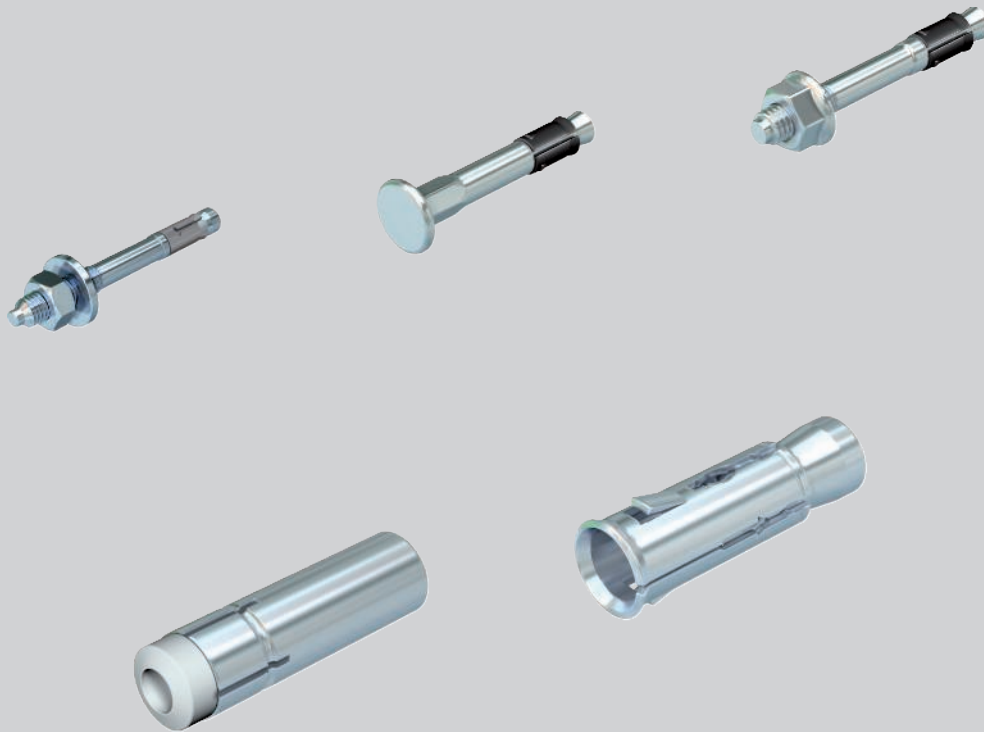
Anchoring

	System description, metal spreading anchor	200
	Products	202
	System description, bolt tie	204
	Products	206
	System description, wood screws	208
	Products	210
	Mounting material for insulated ceilings	211



Metal spreading anchor

System description



OBO Bettermann's metal spreading anchors for mounting in concrete components were tested for fire protection. Appropriate proofs are available for the tests carried out. Depending on the fire resistance length (up to 120 minutes), a maximum load capacity was determined when anchored in concrete. This load data is contained in the appropriate European Techni-

cal Assessments and appropriate test documentation. Although the load capacity of the anchors during a fire is below the load capacity when cold, this load capacity is completely sufficient for fireproof fastening of the different routing types. Special metal spreading anchors are offered for false ceilings.



Metal spreading anchor
Installation principle



Nail tie, type N 6, with thread end.



Nail tie, type N-K 6, with flat head.



Bolt tie, type BZ.



Bolt tie, type BZ-IG.



Hollow core anchor, Easy type.

Classification according to proof of application

R30

R60

R90

R120

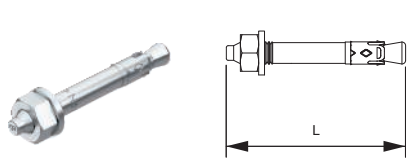
System description

Anchoring type	Anchor with spreading metal cone
Fire resistance classes	To R120 according to European Technical Assessment ETA
Substrate	Concrete

The data of the approval documents and any fire testing reports apply

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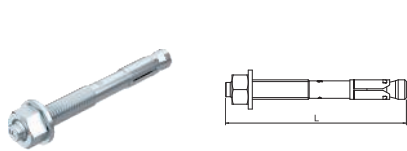
Nail anchor N with thread



Type	Thread	Bore hole Ø mm	Bore hole depth mm	Clamping range mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
N 6-5-10/49	M6	6	40	5 - 10	49	100	1.160	3498396
Sl	Steel							
G	Electrogalvanised							

The nail anchor N can be used for multiple fastenings of non-load-bearing systems and in cracked and non-cracked concrete, thereby combining the benefits of a bolt tie with even easier mounting. The nail tie only needs to be hammered into the drill hole. It is not necessary to apply torque subsequently. When the load occurs, the nail tie spreads itself and bolts itself in the drill hole.

Bolt tie BZ



Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ10-100-120/180	M10	180	25	10.320	3498342
BZ 12-15-35/110	M12	110	25	10.320	3498350
Sl	Steel				
G	Electrogalvanised				

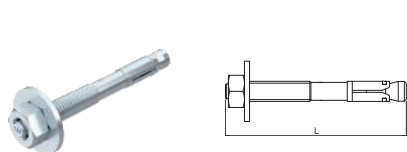
Wedge anchor BZ for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

European technical approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.

Bolt tie BZ-U



Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ-U 8-10-21/75	M8	75	50	3.460	3498320
BZ-U 8-30-41/95	M8	95	50	4.010	3498326
BZ-U 10-10-30/90	M10	90	50	6.720	3498334
BZ-U10-30-50/110	M10	110	25	7.900	3498340
Sl	Steel				
G	Electrogalvanised				

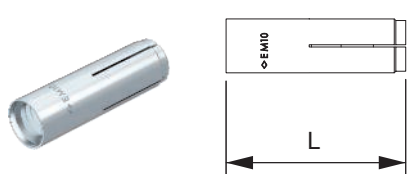
Bolt tie for the anchoring of medium-duty to heavy-duty loads, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

European technical approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.

Drop-in anchor E



Type	Thread	Bore hole Ø mm	Bore hole depth mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
E M 6x30	M6	8	30	30	100	0.840	3492900
E M 8x40	M8	10	40	40	100	1.490	3492910
E M 10x40	M10	12	40	40	50	2.140	3492920
E M 12x50	M12	15	50	50	50	4.420	3492930
Sl	Steel						
G	Electrogalvanised						

The drop-in anchor E can be used for single fixings in non-cracked concrete as well as for multiple fixings in cracked concrete of non-load-bearing systems.

The setting tool is placed onto the anchor sleeve thereby creating a visible mark which confirms the correct installation. Through the controlled expansion, the necessary axial spacings and edge distances are decreased significantly.

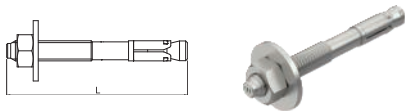


Bolt tie BZ-U

Type	Thread	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
BZ-U8-10-21/75A4	M8	75	50	3.460	3498322
BZU10-10-30/90A4	M10	90	50	6.740	3498336

V4A Stainless steel, A4

Wedge anchor BZ for the anchoring of medium-duty to heavy-duty loads, indoors and outdoors, both in cracked and non-cracked concrete. It combines high approved loads with small edge distances and axial spacings.

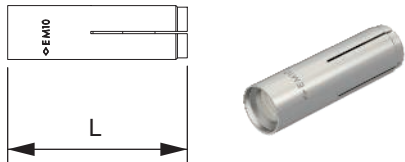


Drop-in anchor E A4

Type	Thread	Bore hole Ø mm	Bore hole depth mm	Dimension L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
E M 8x40 A4	M8	10	40	40	50	1.490	3492912
E M 10x40 A4	M10	12	40	40	50	2.160	3492922
E M 12x50 A4	M12	15	50	50	50	4.380	3492932

V4A Stainless steel, A4

The drop-in anchor E can be used for single fixings in non-cracked concrete as well as for multiple fixings in cracked concrete of non-load-bearing systems.
The setting tool is placed onto the anchor sleeve thereby creating a visible mark which confirms the correct installation. Through the controlled expansion, the necessary axial spacings and edge distances are decreased significantly.



Bolt tie

System description



OBO Bettermann's fire protection bolt ties were fire-tested according to ETAG 001 Part 3. The maximum load capacity, depending on fire resistance periods of up to 120 minutes, was determined for different types of solid masonry. These values are documented in the appropriate test certificates. Taking the occurring loads for the maintenance of electrical function application and for false ceiling mounting into account, the

determined load capacities for the different masonry types are absolutely sufficient. The fire protection bolt ties are screwed directly into the drill hole. There is no need for an additional anchor. No spreading forces develop and mounting near masonry edges is not required. The bolt tie is equally suitable for cracked concrete in ceilings.



Bolt tie
Installation principle



Version with truss head and T drive.



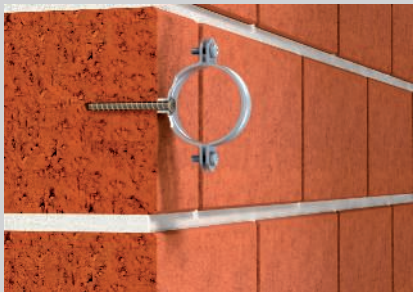
Version with large truss head and T drive.



Version with hexagonal head.



Version as shaft tie with M6 threaded tip.



Version with countersunk cone head and T drive.

Classification according to proof of application

F30 F60 F90 F120

System description

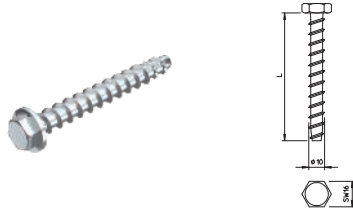
Table with 2 columns: Property (Anchoring type, Fire resistance classes, Substrate) and Description (Spread-free connection with self-tapping thread, To F120 according to general building inspectorate approval, Concrete, Masonry: Solid calcareous limestone brick, porous calcareous limestone brick, full brick).

The data of the approval documents and any fire testing reports apply

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Bolt tie

MMS hex



Type	Dimension mm	Dimension L mm	Bore hole Ø mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 10x80	10 x 80	80	8	13	25	4.000	3498124
MMS-plus 10x100	10 x 100	100	8	13	25	4.800	3498159

St Steel

G Electrogalvanised

Fire protection bolt tie with hexagonal head for direct mounting without additional anchor. WAF 13, drill hole 8 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Bolt tie



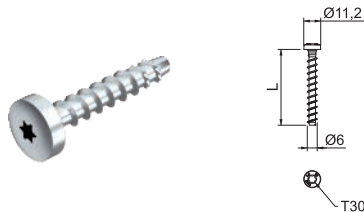
Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X80	7,5 x 80	80	6	13.2	Torx	50	1.600	3498272

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct mounting without anchors. Drive T40, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



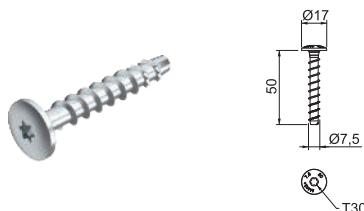
Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 6X50	6 x 50	50	5	11.2	Torx	100	1.000	3498108
MMS-plus 6X35	6 x 50	50	5	11.2	Torx	100	0.900	3498103

St Steel

G Electrogalvanised

Fire protection bolt tie with pan head for direct installation without additional anchors. Drive T30, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

Fire protection screw tie



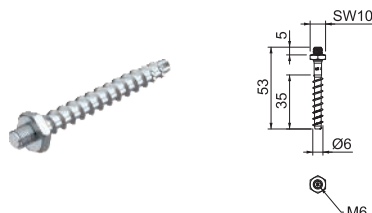
Type	Dimension mm	Anchor length mm	Bore hole Ø mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus 7.5X50	7,5 x 50	50	6	17	Torx	100	1.500	3498261

St Steel

G Electrogalvanised

Fire protection bolt tie with large pan head for direct mounting without additional anchors. Drive T30, drill hole 6 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.

MMS-ST with thread



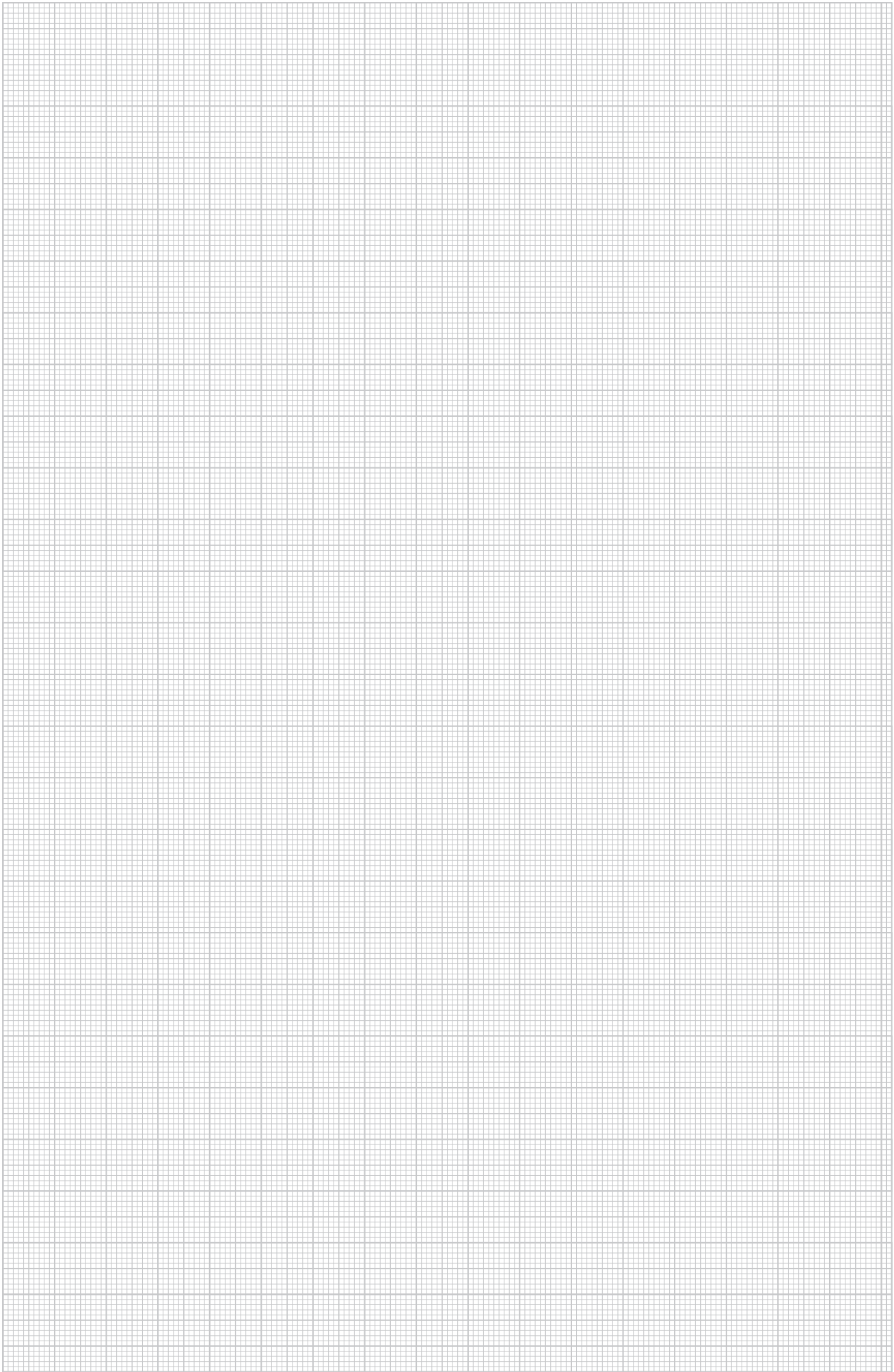
Type	Dimension mm	Anchor length mm	Bore hole Ø mm	SW mm	Thread	Pack. pcs	Weight kg/100 pcs.	Item No.
MMS-plus ST 6x55	6x55	60	5	M6	10	100	1.030	3498264

St Steel

G Electrogalvanised

Fire protection bolt tie with M6 thread and hexagonal head for direct mounting without additional anchors. WAF 10, drill hole 5 mm. Tested anchor according to ETAG 001 - Part 3. Fire resistance class to R120 for concrete and masonry.





Wood screws

System description



Wood is a combustible material and, as with steel constructions, wooden components are firstly only suitable under certain conditions for the fastening of fire-tested electrical installations. Coatings and panelling are also used in the constructions, in order to achieve a fire resistance class at all. However, if there is a fire, wood has a very good property: When burning, an insulated layer is created which delays further combustion. The wooden component must be dimensioned in such a way that failure of the carrying capacity cannot occur at an early stage. The combustion rates are a standard means for calculating the required wood cross-section, depending on the desired fire resistance class. The combustion rates depend

on the type of wood and the moisture content of the wood. Taking the combustion rates into account, various cable support systems for electrical safety systems with the maintenance of electrical functionality classes E30 and E60 can be fastened to wooden components. Wood screws with a suitable steel cross-section and sufficient embedment depth are used for fastening. The long screws drill deep into the cross-section of the wooden beam, ensuring a secure hold of the mounted support systems, despite burning. Various mounting variants are documented in a fire protection survey.

Wood screws

Installation principle



Bracket mounting on the side of the wooden beam with rear fire protection plate.



Suspended support mounting under the wooden beam with rear fire protection plate.



Cable routing with single clips and in the pipe, at the side on the wooden beam.



Cable routing with grouped support on the side on the wooden beam.



Mounting of the OBO FireBox on a wooden beam.



Vertical cable routing with rails and clips on a wooden beam.

Classification according to proof of application

E30

E60

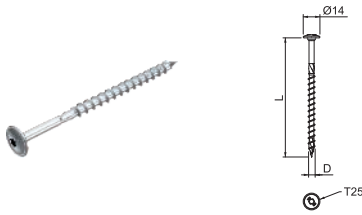
System description

Anchoring type	Self-tapping wood screw
Maintenance of electrical functionality classes	E30 to E60
Substrate	Supporting components, that close off or do not close off rooms, (walls, ceiling or supports) made of solid wood
Proof of application	Surveyor's report of Ingenieurbüro für Brandschutz von Bauarten, IBB
Certificate number	GA-2016/034-Mey

The data in the named proofs of applicability applies

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Flange head-screw HT 6



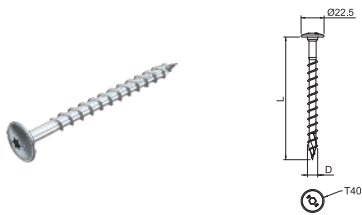
Type	Dimension D mm	Dimension L mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
HT 6x60 TD	6	60	14	Torx	200	0.850	3498130
HT 6x80 TD	6	80	14	Torx	100	0.110	3498132
HT 6x100 TD	6	100	14	Torx	100	0.130	3498134
HT 6x120 TD	6	120	14	Torx	100	0.150	3498136

St Steel

G Electrogalvanised

Self-tapping wood screw for fireproof fastening of cable systems for the maintenance of electrical function according to DIN 4102 Part 12 on supporting wooden structures. The flange head shape allows installation without an additional washer.

Flange head-screw HT 10



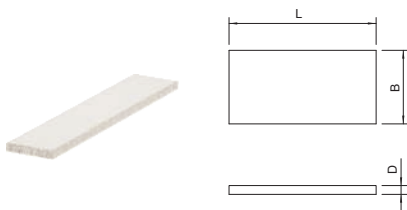
Type	Dimension D mm	Dimension L mm	Head Ø mm	Screw system	Pack. pcs	Weight kg/100 pcs.	Item No.
HT 10x80 TD	10	80	22.5	Torx	50	0.310	3498140
HT 10x100 TD	10	100	22.5	Torx	50	0.370	3498142
HT 10x120 TD	10	120	22.5	Torx	50	0.430	3498144
HT 10x140 TD	10	140	22.5	Torx	50	0.490	3498146

St Steel

G Electrogalvanised

Self-tapping wood screw for fireproof fastening of cable systems for the maintenance of electrical function according to DIN 4102 Part 12 on supporting wooden structures. The flange head shape allows installation without an additional washer.

Fire protection plate



Type	Dimension L mm	Dimension B mm	Dimension D mm	Pack. pcs	Weight kg/100 pcs.	Item No.
GLB-P1	600	120	20	1	100.000	7205470
GLB-P2	600	120	30	1	150.000	7205472

Glass-fibre lightweight concrete

Fire protection plate (material class A1) as effective panelling measure for fastening on supporting wooden components for the maintenance of electrical function according to DIN 4102 Part 12. Made of fibreglass light concrete which is resistant to water and frost.



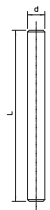
Threaded rod

Type	Thread	Dimen- sion d mm	Dimen- sion L mm	Pack. pcs	Weight kg/100 pcs.	Item No.
TR M8 1M G	M8	8	1000	10	30.000	3141128
TR M10 1M G	M10	10	1000	10	49.000	3141209
TR M12 1M G	M12	12	1000	10	62.000	3141306

St Steel

G Electrogalvanised

Threaded rod to DIN 976.



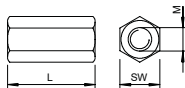
Connection sleeve

Type	Thread	Dimen- sion L mm	SW mm	Pack. pcs	Weight kg/100 pcs.	Item No.
CSTR M8 G	M8	24	13	50	1.880	6410081
CSTR M10 G	M10	30	17	50	4.150	6410103
CSTR M12 G	M12	40	19	25	7.000	6410111

St Steel

G Electrogalvanised

Connection sleeve with continuous internal thread.



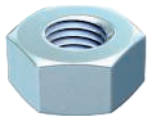
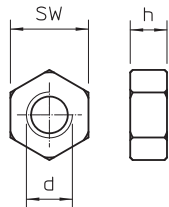
Hexagonal nut DIN 934

Type	Thread	SW mm	Dimen- sion h mm	Dimen- sion d mm	Pack. pcs	Weight kg/100 pcs.	Item No.
HN M8 G	M8	13	6.8	8	100	0.474	3400085
HN M10 G	M10	17	8.4	10	100	1.084	3400107
HN M12 G	M12	19	10.8	12	100	1.730	3400123

St Steel

G Electrogalvanised

Hexagonal nut to DIN 934 with metric thread.



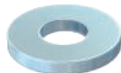
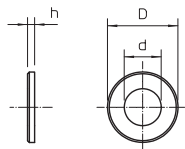
Washer

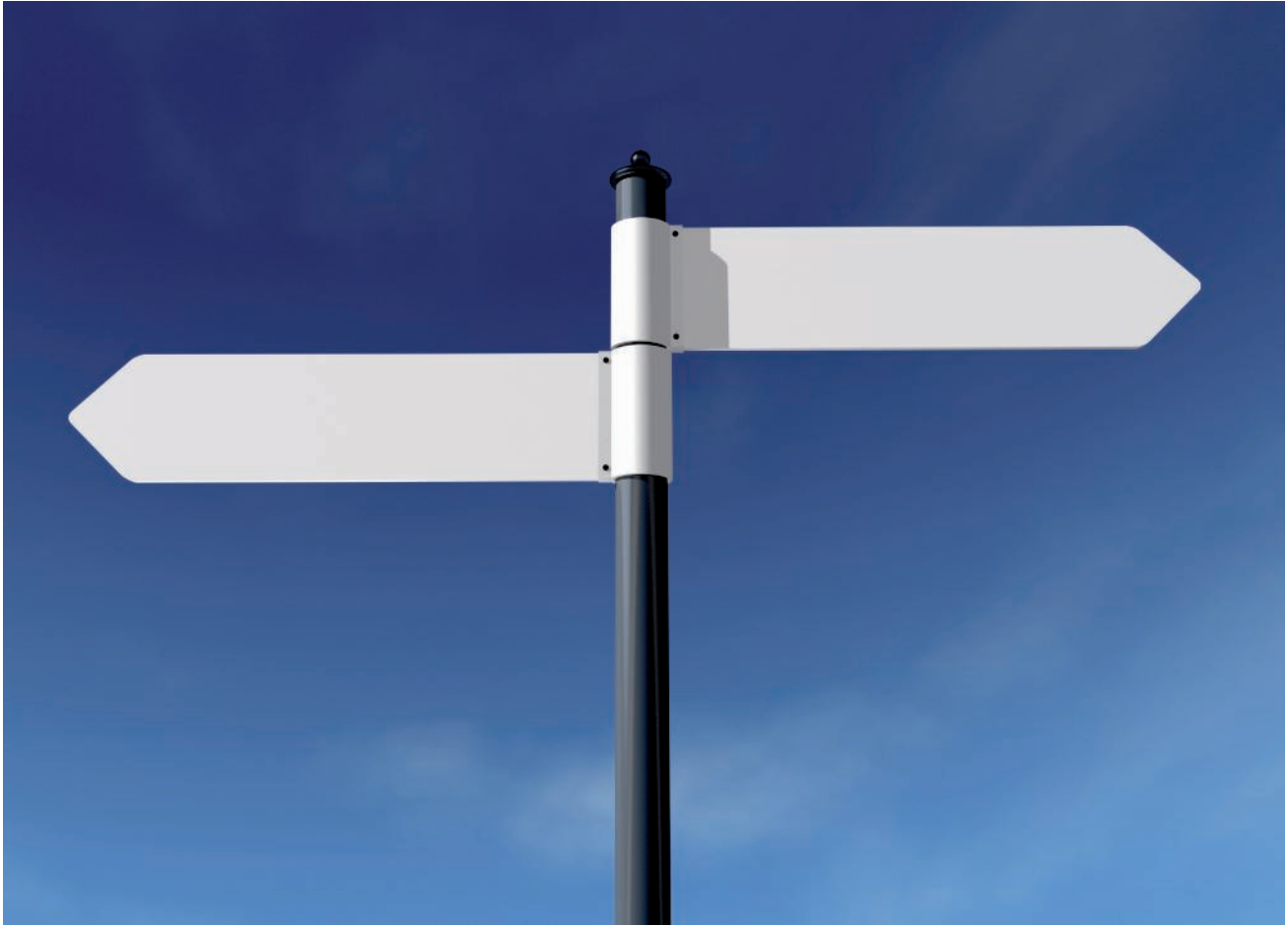
Type	Thread	Dimen- sion d mm	Dimen- sion D mm	Dimen- sion h mm	Pack. pcs	Weight kg/100 pcs.	Item No.
WS M8 D16 G	M8	8.4	16	1.6	100	0.214	3402088
WS M10 D20 G	M10	10.5	20	2	100	0.408	3402096
WS M12 D24 G	M12	13	24	2.5	100	0.627	3402126

St Steel

G Electrogalvanised

Washer according to DIN 125, shape A, for universal use.





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5000914	1003054	108	5114857	1360167	186	5781486	2046536	192	6411979	3492910	202	5706083	6047613	154
5000976	1003062	108	5114918	1360183	186	5781493	2046537	192	6411986	3492912	203	5706113	6047614	154
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6437597	6340966	140	6079971	7070205	59	6532254	7216635	91
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6536719	6341535	61	6231195	7083203	59	6532339	7216643	95
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6536535	6341578	61	6231379	7083505	59	6532360	7216646	97
6536474	6341586	61	6231492	7083602	59	6532377	7216647	98
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6222377	6342310	139	6561810	7205430	19			
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6222490	6342314	139	6564002	7205470	210			
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6225439	6342372	139		/m				
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