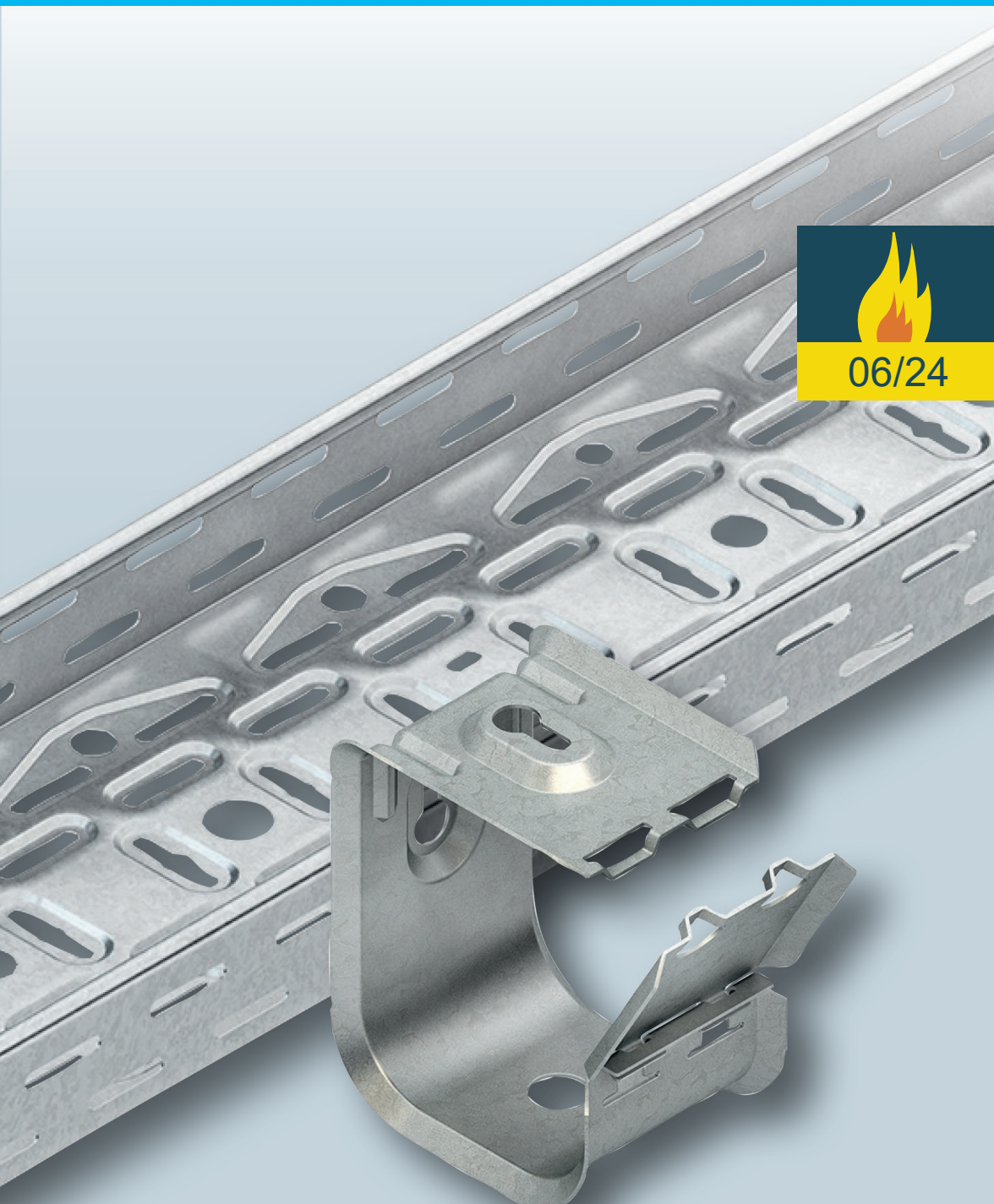


FP



FIRE PROTECTION



 New in the assortment	 35 Side rail height in mm	 60 -15 Operating temperature range	 Hardware
 Discontinued model	 1 Wire diameter in mm	 Fast install	 Installation instructions
 Halogen-free	 78 170 Cover hole and depth in mm	 750°C Glow wire test acc. DIN EN 60695-2-10 / VDE 0471-2-10	 Reference note
 Silicone-free	 30 Pipe diameter in mm	acc. DIN EN 60695-2-11 / VDE 0471-2-11	 Information pages

All products in this catalog are classified according to the EAN code (13 digits). The first 7 digits indicate the country (40 = Germany) and the manufacturer's code (13339 = Niedax). The following six digits are the product code.
Example EAN code of the product TK 60.85 = 40 13339 183708



Please ask for the certifications VDE/UL



BIM-Data on request

Steel

B Steel, bare
V Steel, electro galvanised according to DIN EN ISO 19598 and DIN EN ISO 2081, blue passivated, (connecting elements galvanised according to DIN EN ISO 4042)
VC Steel, electro galvanised according to DIN EN ISO 19598 and DIN EN ISO 2081, blue passivated and powdercoated
VZL Steel, electro galvanised, passivated, top layer sealed
G Steel, electro galvanised according to DIN EN ISO 19598 and DIN EN ISO 2081, thick-film passivated, (connecting elements galvanised according to DIN EN ISO 4042)
S Steel, pre-galvanised according to DIN EN 10346
F Steel, hot dip galvanised according to DIN EN ISO 1461 (replacement for DIN 50 976), (connecting elements hot dip galvanised according to DIN EN ISO 10684)
SB Steel, black-oxide finish
FG Steel, geomet® galvanised
DV Steel, wire galvanised according to DIN EN 10244
C1 Epoxy Coating, halogen-free
C COLOR Steel, pre-galvanised and powder coated

	STANDARD COLOUR		SURFACE ALUMINIUM
C Complete model-No. for the colour identity	VW traffic white RAL 9016 on stock	N aluminium natural anodized	P aluminium plate-finished

Other RAL colours on request. For possible colour divergences we assume no liability

F1 Steel, zinc coating and chromate Steel, zinc coating & chromate Thickness of zinc is between 8-12 microns, electrolytic galvanizing & additionally chromated. Corrosion resistance measured by using a salt spray test acc. to DIN 50021 (ASTM-B117-90) at least 72 hours.	F6 Natural colour Untreated material against corrosion.
F2 Steel, hot dip galvanised Thickness of zinc between 50-70 microns, after immersion machining in a bath of molten zinc.	F7 Steel, plastic coating EVA (Ethylene Vinyl Acetate Copolymer Saponifies, Levasint®) resistance to fire according to DIN 4102.
F3 Stainless steel (material code: 1.4401 [316]) Indoor use / Outdoor in humid environments and moderately aggressive.	F8 Steel, mechanical zinc plated / passivated High quality coating. Corrosion resistance measured by means of a test salt spray according to DIN 50 021 (ASTM-B117-90) is at least 500 hours.
F4 Steel, coated Dekor-lacquer interior use in dry environments and not corrosive.	F9 Steel, mechanical zinc plated / passivated High quality coating. Corrosion resistance measured by means of a test salt spray according to DIN 50021 (ASTM-B117-90) is at least 600 hours.
F5 Brass For indoor use only.	F10 Steel, electrical mechanical / passivated Zinc coating thickness of 5 microns, electrolytically applied and clear passivated according to BS EN 12329 2000 FE/ZN5//A.

AL Aluminium, N = naturally anodized, P = mill-finished, C = powdercoated in RAL colours		
P Electrotechnical Porcelain, halogen-free	MS Brass	CU Copper

Stainless Steel



E1 Material code: 1.4016	E4 Material code: 1.4404/AISI 316L	E7 Material code: 1.4547	E10 Material code: 1.4307/AISI 304L
E2 Material code: 1.4310	E5 Material code: 1.4571/AISI 316Ti	E8 Material code: 1.4430	E11 Material code: 1.4034
E3 Material code: 1.4301/AISI 304	E6 Material code: 1.4529	E9 Material code: 1.4362	E12 Material code: 1.4462

Plastics/Elastomer

K01 PA - Polyamide, halogen-free	K14 POM - Polyoxymethylene, halogen-free
K02 PS - Polystyrene, impact resistant, halogen-free	K15 SBR - Styrene Butadiene Rubber, halogen-free
K03 PE - Polyethylene, halogen-free	K16 CR/NBR - Chloroprene/Nitrile Butadiene Rubber, halogenated
K04 PP - Polypropylene, halogen-free	K17 CR/SBR - Chloroprene/Styrene Butadiene Rubber, halogenated
K05 PC - Polycarbonate, halogen-free	K18 TPE - Thermoplastic Elastomers, halogen-free
K06 SBR/NBR - Styrene Butadiene Nitrile Rubber, halogen-free	K19 FS 31 - Moulding material 31 (Phenolic Resin), halogen-free
K07 CR - Neoprene (Chloroprene Rubber), halogen-free	K20 SI - Silicone Rubber, halogen-free
K08 NBR - Nitrile Butadiene Rubber, halogen-free	K21 PUR - Polyurethanes, halogen-free
K09 PVC-hard - Polyvinyl Chloride Hard, halogenated	K22 PET - Polyethylene Terephthalate, halogen-free
K10 PVC-soft - Polyvinyl Chloride Soft, halogenated	K23 UP-GF - Glass Fiber Reinforced Polyester, halogen-free
K11 ABS - Acrylnitrile Butadiene Styrene, halogen-free	K24 PBT - Polybutylene Terephthalate, halogen-free
K12 ASA - Acrylic Acid Ester-Styrene-Acrylonitrile Graft Copolymer, halogen-free	

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Please read the following safety notes, instructions and information carefully.

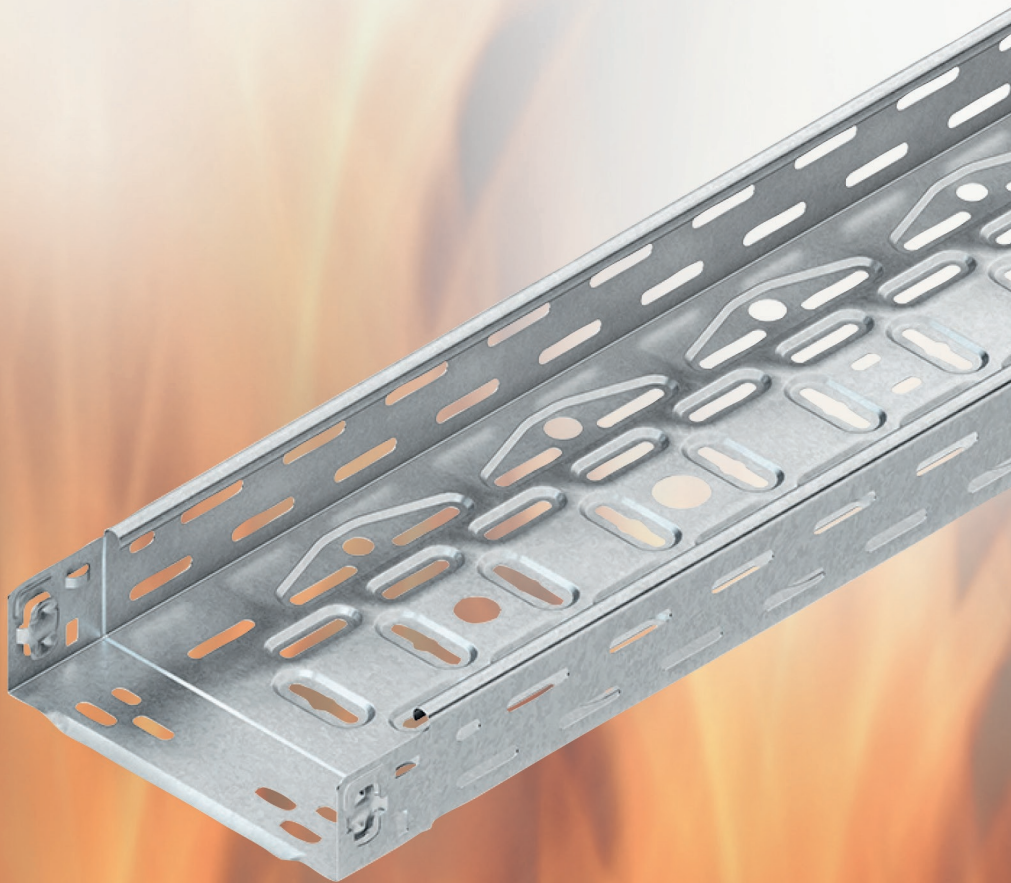
- Cable management systems are electrical equipment according to the Low Voltage Directive 2014/35/EU and may only be installed and maintained by qualified personnel or appropriately instructed persons.
- Cable support systems are used exclusively for cable/line routing. They must not be used by persons as a walkway, ladder or for other support.
- It is essential to wear suitable protective equipment for safe handling during transport and processing.
- Deviations of the illustrations from the products are possible. However, this has no influence on the function and interaction.
- The specifications of the valid usability certificates, such as the german classification report for electric cable systems with circuit integrity maintenance (abP), expert judgement report, etc. must be observed. Deviations from this require the approval of all responsible parties involved in the construction project before execution.
- Applicable installation regulations must be observed.
- Cable systems with integrated circuit integrity maintenance must be permanently marked by the installer.
- When working on site, ensure that there are no burrs; if necessary, use edge protectors.
- On-site processing of stainless steel products only with tools suitable for this purpose, re-treat if necessary.
- Length of the bracket = width of the cable tray (cable tray, mesh cable tray, cable ladder). Deviations from this require the approval of all responsible persons involved in the construction project before execution.
- Fittings and articulated connectors are not self-supporting and must be additionally supported at the joints according to the illustrations in this catalogue.
- The maximum permissible load is reduced by the weight of a cover if it is used.
- When laying cables with U-clamps B..., BU... and/or SAS..., make sure that the cable is not damaged due to incorrect selection or overtightening.

- If single-core cables are laid side by side in a short-circuit-proof manner, clamps made of ferromagnetic material must not be used for fastening.
- SHS... collective holders and LLK... cable protection ducts are unsuitable for this purpose.
- In the case of continuous vertical cable laying with U-clamps or vertical cable ladders over 3.5 m, an effective support measure against slipping must be taken in accordance with DIN 4102 Part 12, Section 8.3.
- Cable installation materials subject to tensile stress shall be dimensioned so that their calculated tensile stress does not exceed $\leq 9 \text{ N/mm}^2$ for E30 and E60 classifications and $\leq 6 \text{ N/mm}^2$ for E90 classifications in accordance with DIN 4102 Part 4, Table 11.1.
- System components subject to shear stress shall be dimensioned so that their calculated shear stress does not exceed $\leq 15 \text{ N/mm}^2$ for E30 and E60 classifications and $\leq 10 \text{ N/mm}^2$ for E90 classifications in accordance with DIN 4102 Part 4, Table 11.1.
- The cable support systems (cable trays, cable ladders, mesh cable trays, cable protection ducts and system-related accessories) made of galvanised steel or stainless steel have electrical conduction properties that must be maintained throughout the entire system, even in the event of modifications or additions, in order to ensure equipotential bonding and the connection(s) to earth.
- The circuit integrity maintenance of a cable system in accordance with DIN 4102 Part 12 is only guaranteed if the system is not negatively affected by surrounding components in the event of fire.
- In the event of influences such as wind loads, cover cable trays or conductors must be mounted outdoors with additional securing devices (self-tapping screws, steel strip, etc.).
- In the case of mixed installation of fire resistance cables and general power supply, the joint laying of cables for circuit integrity maintenance for the safety power supply and cables (e.g. PVC cables) that are not subject to fire protection requirements, it must be ensured that the function maintenance cables do not overlap with the other cables. This is made possible, among other things, by using a barrier strip RW... or by laying the cables on a separate level with the same cable support system. The design features and load limits of the cable support systems according to the valid german classification report (abP) must be complied with.

For further instructions, please refer to our KR catalogue.

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...

With this cable installation system for circuit integrity maintenance in accordance with DIN 4102 Part 12, we offer you a laying option for our cable tray RLVC... whose performance features cannot be surpassed.

High load-bearing capacity, practical fastening spacing, simple installation thanks to integrated joint connections, fittings and other system-related accessories, a wide range of cable manufacturers as well as the already well-known advantages of our predecessor systems are combined here.

Support span $a \leq 1.5 \text{ m}$

Cable load $q \leq 20 \text{ kg/m}$ or 25 kg/m

For the installation system KFO RLVC 60... in accordance with DIN 4102 Part 12 for the circuit integrity maintenance classes E30 to E90, cable trays with a rail height of 60 mm are used in the widths 100 to 400 mm.

The joint connection is made using the integrated connector and an additional 4 FLM 6X12 mushroom-head bolts.

Alternatively, in the case of cut cable trays, the connection can be made using two internal universal splice plates RVV 50 and a joint bar RSLB... . The position of the joints is not tied to a specific position.

Any horizontal and/or vertical change of direction can be realised on site with the fittings and the connectors (➡ 18). All changes of direction must be supported in the immediate vicinity of the joints (distance $\leq 150 \text{ mm}$) by an appropriate supporting structure.

Due to the omission of the threaded rod at the tip of the extension arm, there is no longer any need to drill and insert the dowel required for this purpose, and the cables no longer have to be threaded along their entire length.

Cable trays, overhead hangers, brackets and other system-related accessories are directly available.

In the case of horizontal routing with height offsets, the inclined cable tray must be fastened to the bracket KTAS... using cable tray fastening KLAF 6.

The cable tray fastening KLAF 6 can be adapted to any incline angle by bending it by hand. To protect the cables, use edge protection plates RKB... at the cable tray ends.

For ceiling mounting, the overhead hangers HU 5050/... or HU 6040/... or, for greater flexibility on site, corresponding U-profiles and top plates are available.

When mounting the bracket KTAS... on the overhead hangers or U-profile, the overhead hanger-distance profile HDS... must generally be used.

The suspension construction

consists of:

- Overhead hangers **HU 5050/...**
- or the profile **U 5050/...**
- with a screw head plate **KU 5050, KUGH 5050, KUGV 5050**
- as well as the overhead hanger/wall brackets **KTAS 100 - 400**

When mounting the brackets on the overhead hanger, it is essential to use the overhead hanger-distance profile HDS 50.50 F with hexagon screw SKM 10X80 F for both one-sided and two-sided fastening (see illustrations on the following pages). Please order the screws for fastening the tray to the brackets (2 FLM 6X12 per bracket) separately.

Fittings must be supported in the immediate vicinity of the joints by an appropriate support structure.

The fastening

of the suspension construction is carried out with:

- building authority approved dowel M 10 or M 12 (depending on the version)

The material requirement

of the suspension construction per suspension unit:

Designation	Model No.					
Overhead hanger or profile with head plate	HU 5050/...	1	1	1	1	1
	U 5050/...	1	1	1	1	1
	KU 5050, KUGH 5050	1	1	1	1	1
	resp. KUGV 5050	1	1	1	1	1
Overhead hanger-and wall bracket	KTAS 100 - 400	1	2	2	3	4
Overhead hanger-distance profile	HDS 50.50 F	1	2	1	2	2
Mushroom-head bolt	FLM 6X12	2	4	4	6	8
Dowels for RLVC 60.100 - RLVC 60.200	M10	2	2	2	2	2
Dowels for RLVC 60.300 - RLVC 60.400	M12	2	2	2	2	2

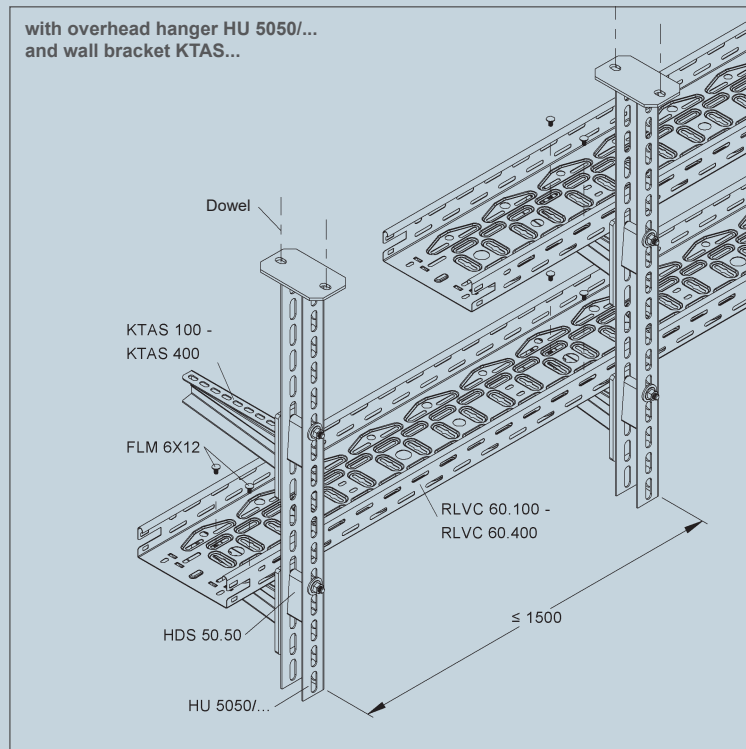
Other suspension variants on request!

Suitable dowels can be found in chapter "8 Fastening Elements". ➡ 256

Ceiling mounting

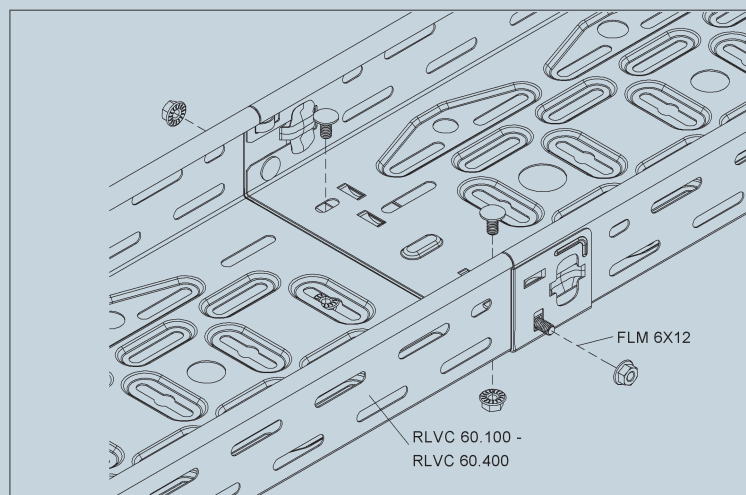


Bracket length = cable tray width . Cable tray width B 100 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 20$ kg/m resp. 25 kg/m



Cable trays with a rail height of 60 mm, in widths of 100 to 400 mm (RLVC 60.100 - RLVC 60.400) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 FLM 6X12 mushroom-head bolts.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



The joint connection is made using the integrated connector and an additional 4 FLM 6X12 mushroom-head bolts.

For alternative joint connection for cut cable tray see ➡ 11

Alternatively, the suspensions for this installation system can also be made with **HU 6040/...** overhead hanger, **U 6040/...** U-profile, **KU 6040** screw head plate and **HDS 60.40** overhead hanger-distance profile (see products from ➡ 18).

The wall mounting

consists of:
Overhead hanger/wall bracket **KTAS 100 - 400**

Please order the screws for fixing the tray to the brackets (2 FLM 6X12 per bracket) separately.

The fastening

to the wall is carried out with:
screws/dowels M 10 approved by the building authorities

The material requirement

of the wall fastening per suspension unit:

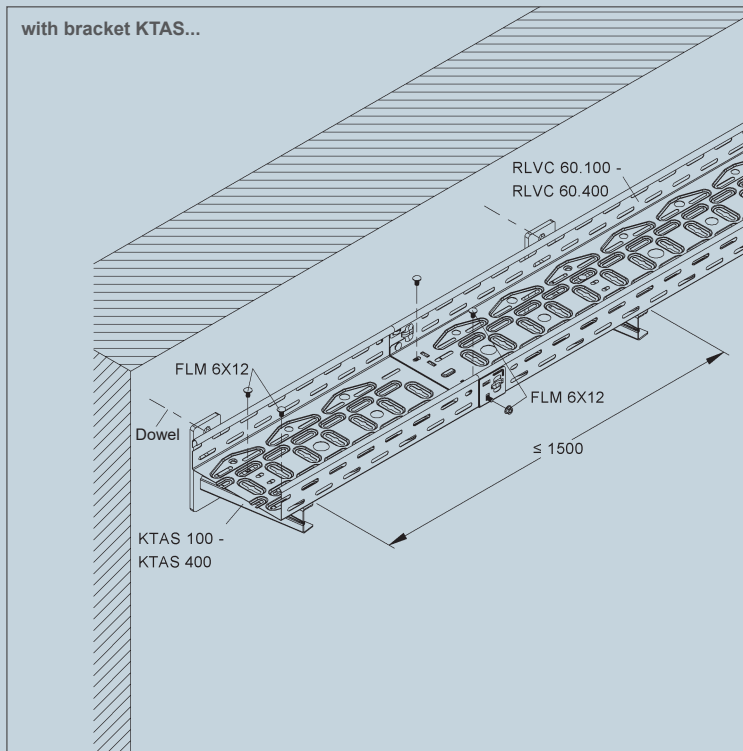
Designation	Model No.	
Overhead hanger- and wall bracket	KTAS 100 - 400	1
Mushroom-head bolt	FLM 6X12	2
Dowels for RLVC 60.100 - RLVC 60.400	M10	1

Suitable dowels can be found in chapter “8 Fastening Elements”. ➡256

Wall mounting



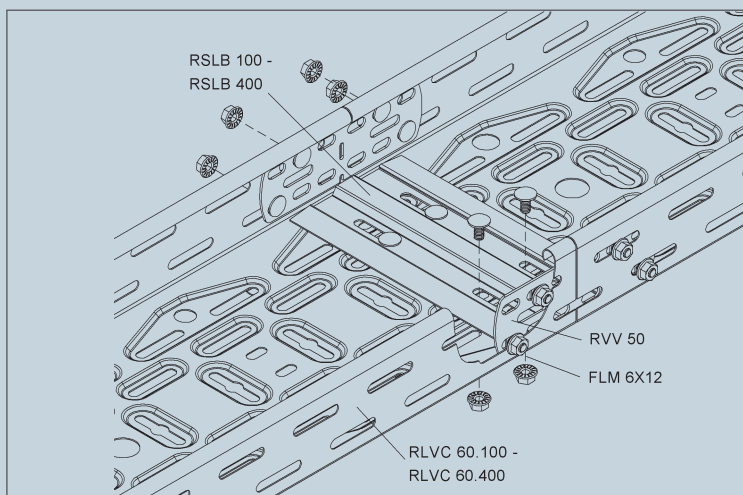
Bracket length = cable tray width . Cable tray width B 100 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 20$ kg/m resp. 25 kg/m



Cable trays with a rail height of 60 mm, in widths of 100 to 400 mm (RLVC 60.100 - RLVC 60.400) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 FLM 6X12 mushroom-head bolts.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.

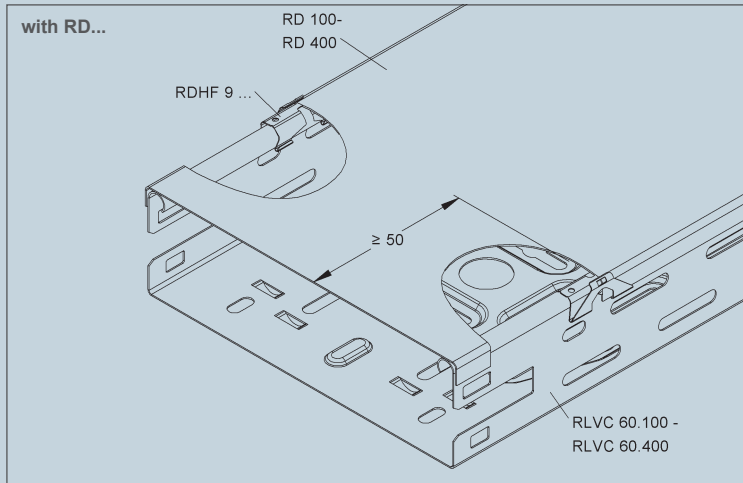
The connection of two cable trays RLVC 60... is made via the integrated connector with 4 FLM 6X12 mushroom-head bolts as shown in the adjacent illustration.



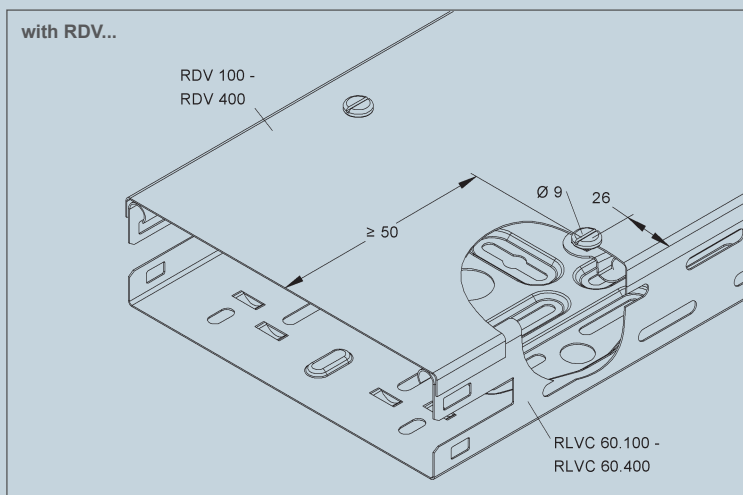
Alternatively, with cut cable trays, the connection can be made via two internal universal splice plates RVV 50 and a joint bar RSLB...

The position of the joints is not tied to a specific position.

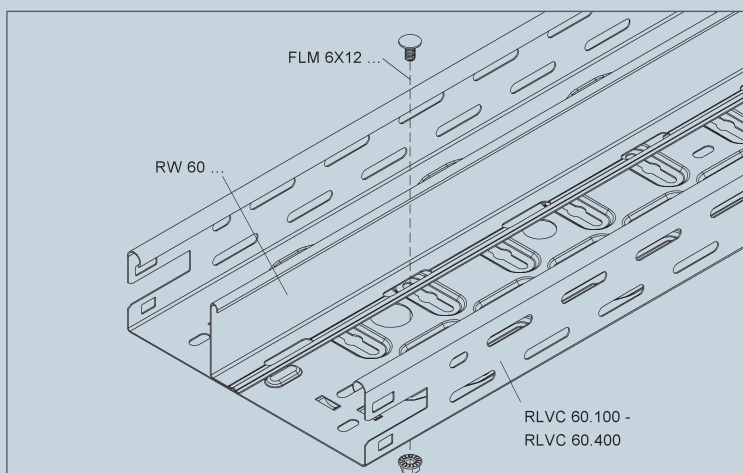
Cover fastening



If RD... covers with cover clamp RDHF 9 E2 or RDV ... and RTADV ..., RBADV ..., RESDV ..., RTSADV ... and RKSDV ... fitting covers are used, the max. permissible cable weight must be reduced by the weight of the cover.



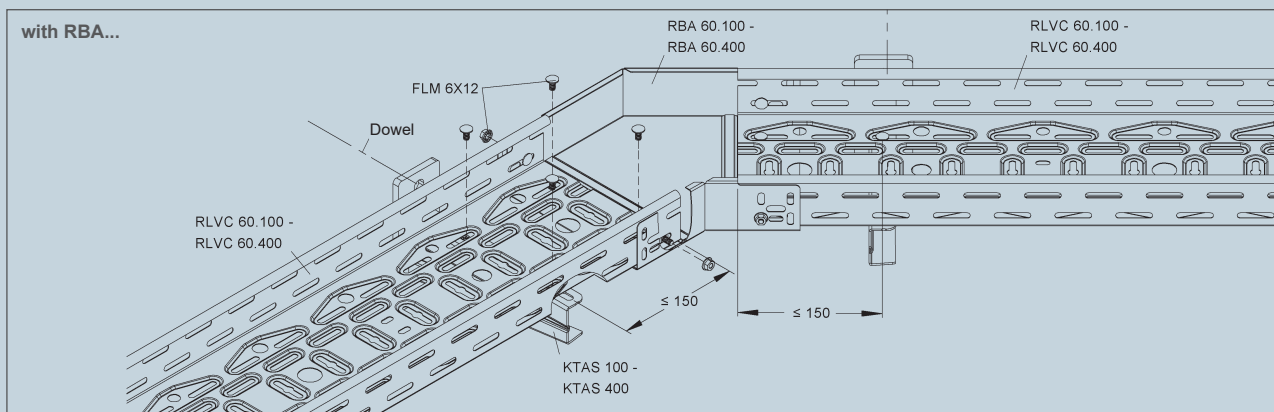
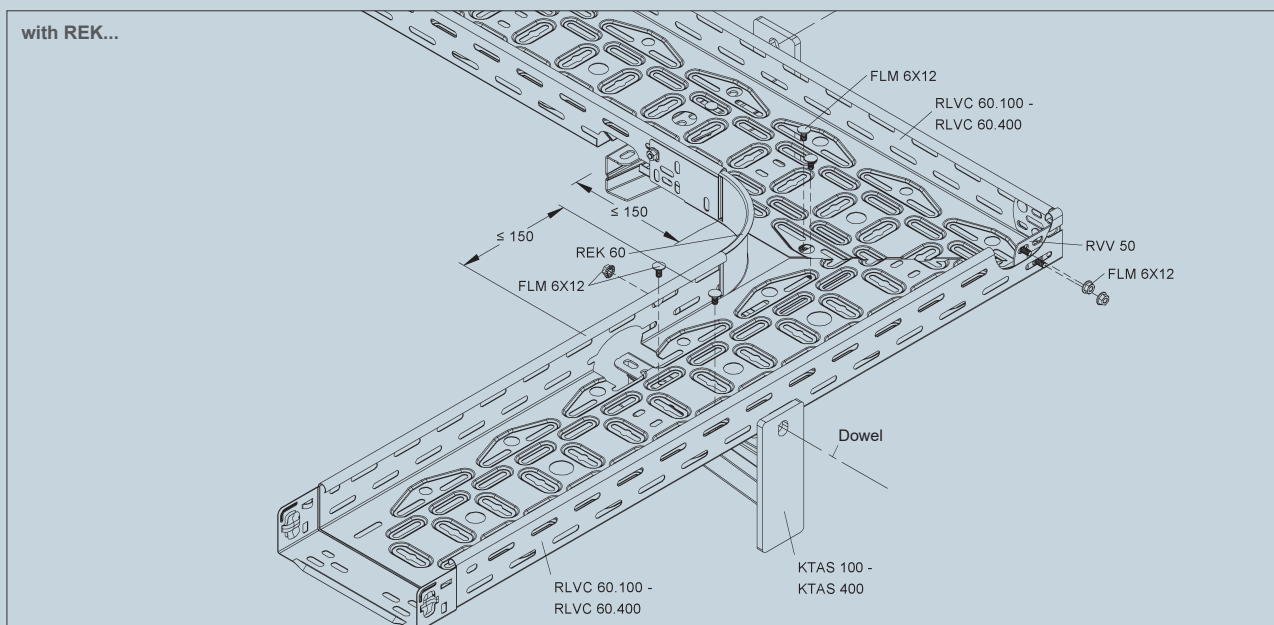
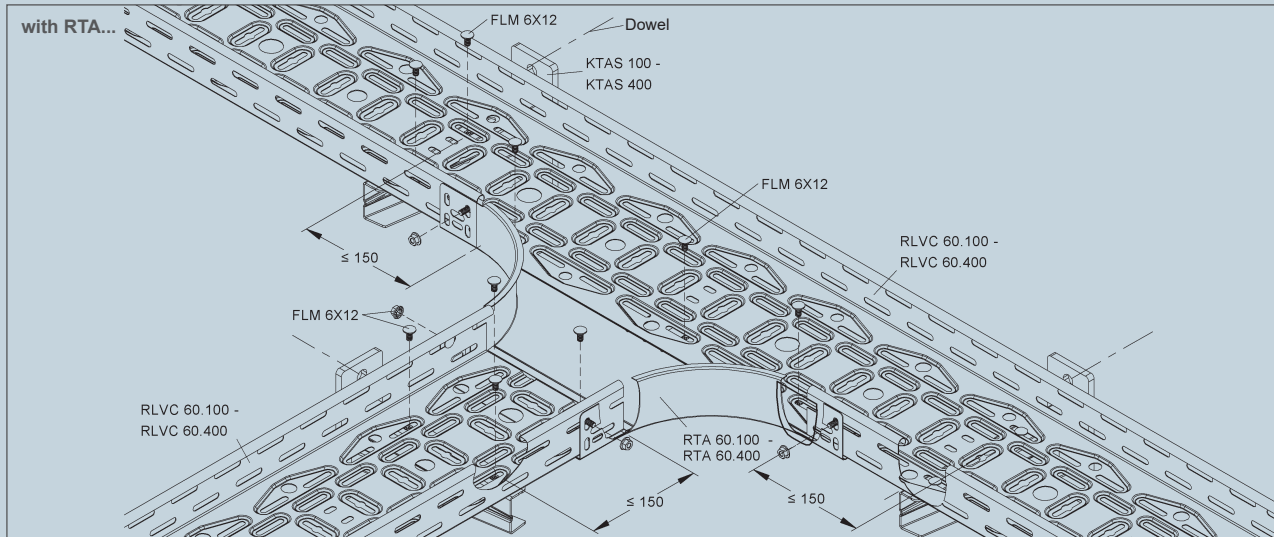
Barrier strip assembly



To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW ... can be used.



Overhead hanger and wall mounting of fittings for KFO RLVC...

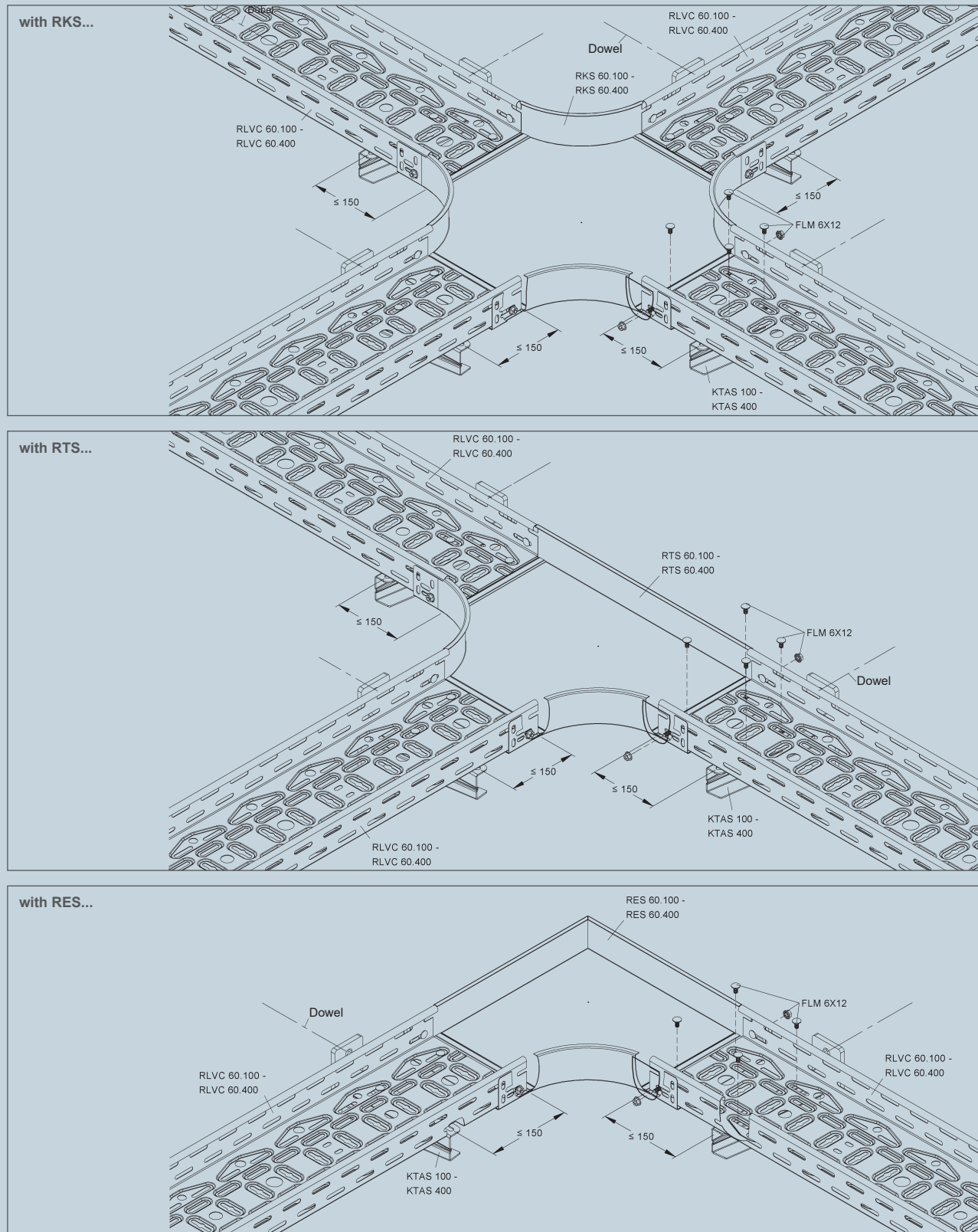


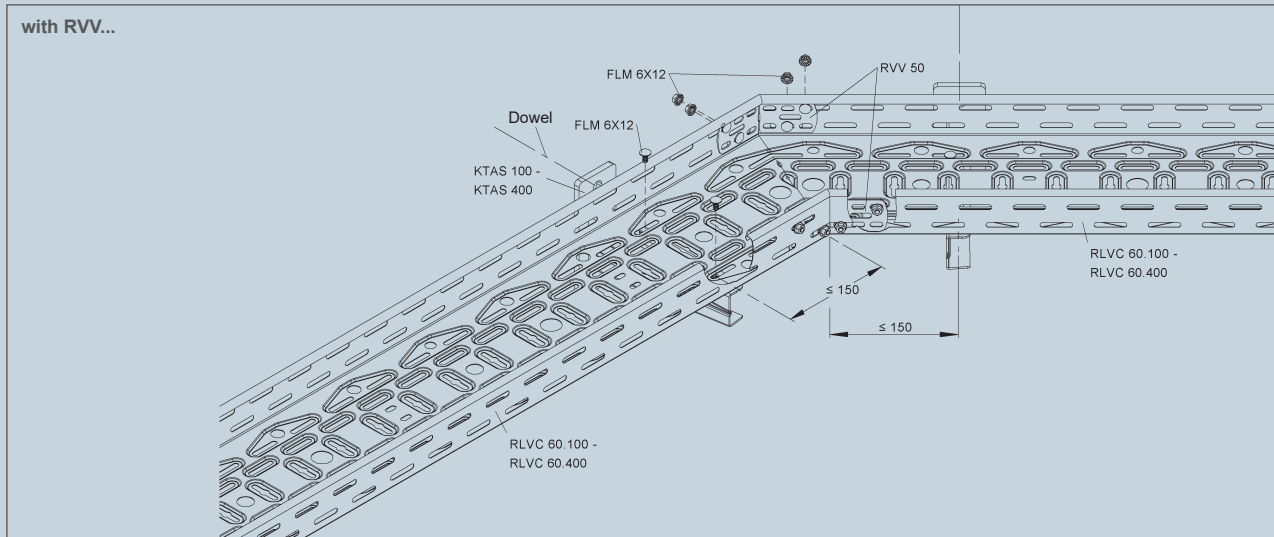
1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...



Overhead hanger and wall mounting of fittings for KFO RLVC...



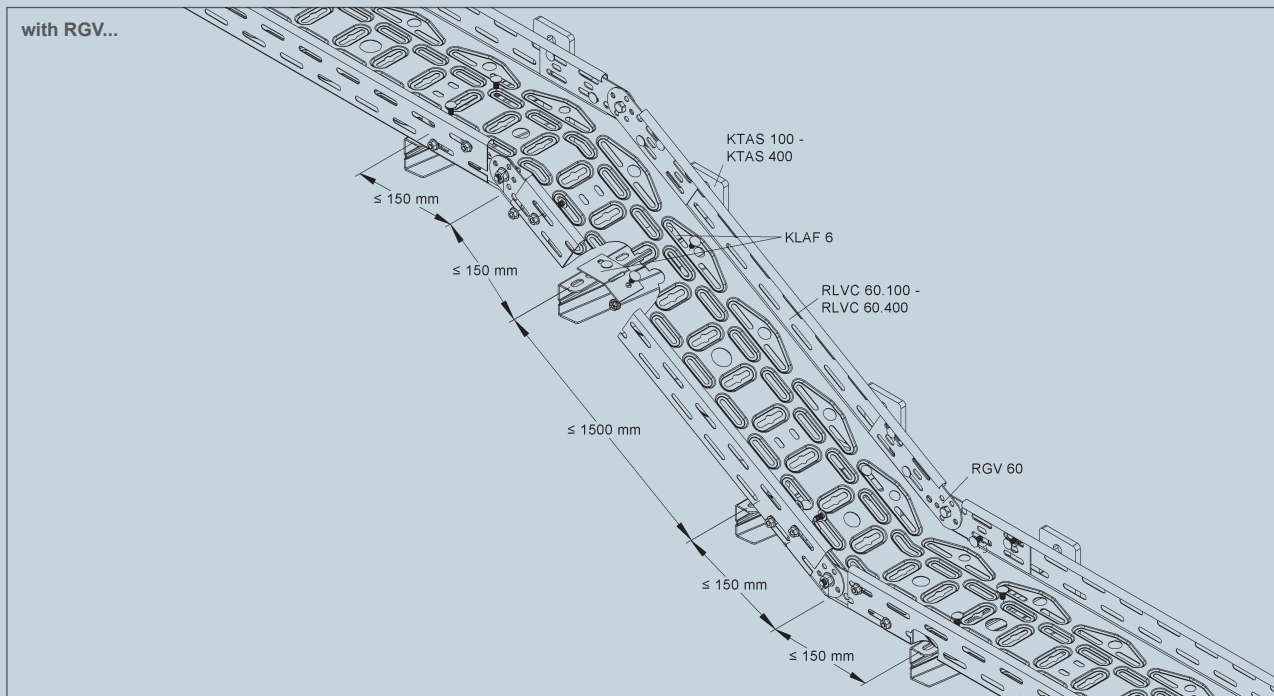
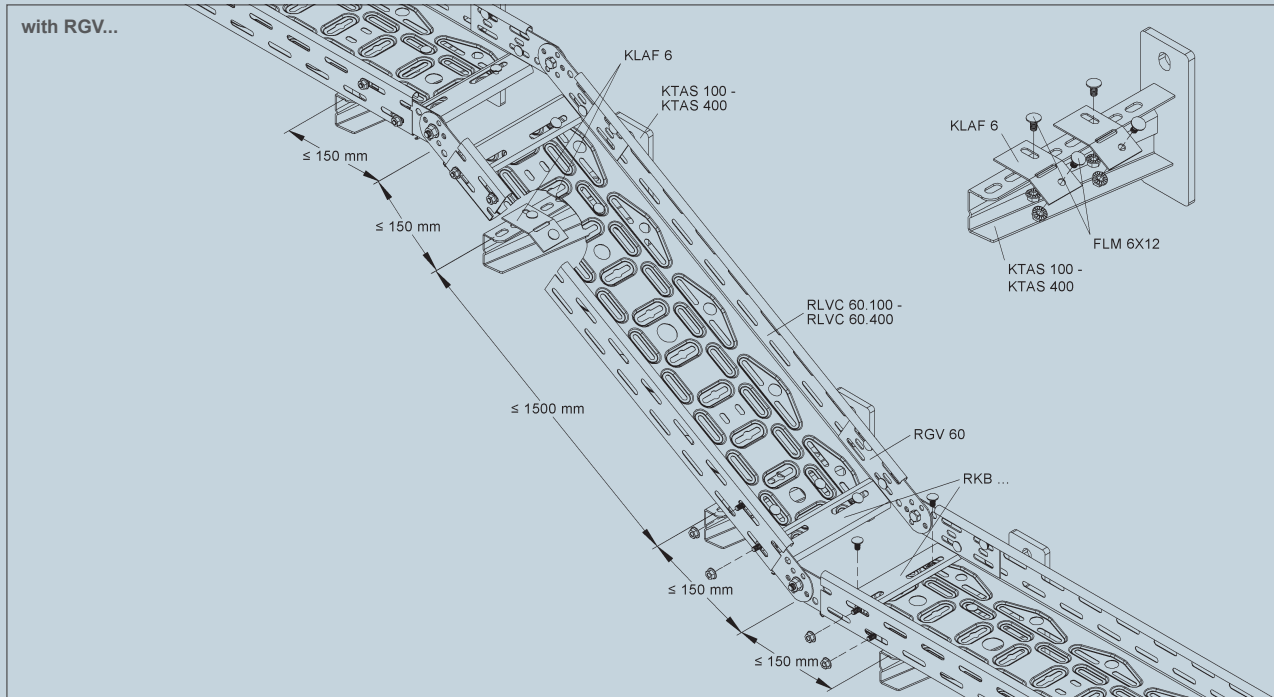


1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...



Overhead hanger and wall mounting of fittings for KFO RLVC...



Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Ceiling mounting Overhead hanger HU 5050/L & HU 6040/L		Wall mounting Bracket KTAS...	
	Cable type	B ≤ 300 mm q ≤ 25 kg/m a ≤ 1500 mm	B = 400 mm q ≤ 25 kg/m a ≤ 1500 mm	B ≤ 300 mm q ≤ 25 kg/m a ≤ 1500 mm	B = 400 mm q ≤ 25 kg/m a ≤ 1500 mm
Dätwyler AG Kabel + Systeme	Pyrofil Keramik (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30	E30	E30
	Pyrofil Keramik (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E60	E60	E60	E60
	Pyrofil Keramik (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90	E90	E90	E90
	Pyrofil Keramik (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90	E90	E90
	Pyrofil Keramik JE-H(St)H... Bd FE180 E30L n x 2 x 0,8 mm	E30	E30	E30	E30
	Pyrofil Keramik JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m
	Pyrofil Keramik JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 20 kg/m	-	E30 q ≤ 20 kg/m	-
Kabelwerk Eupen AG	Eucasafe (N)HXH... FE180 E30 n x ≥ 1,5 mm ²	E30	E30	E30	E30
	Eucasafe (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30	E30	E30
	Eucasafe (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90	E90	E90
	Eucasafe JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	E30	E30	E30	E30
	Eucasafe JE-H(St)H... Bd FE180 E90 n x 2 x 0,8 mm	E90	E90	E90	E90
Studer Cables AG	BETAflam (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m
	BETAflam (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30	E30	E30
	BETAflam (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m	E90 q ≤ 20 kg/m
	BETAflam (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90 q ≤ 20 kg/m	E90	E90 q ≤ 20 kg/m
	BETAflam JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	E60	E60	E60	E60
	BETAflam JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E90	E90	E90	E90
	BETAflam JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m	E30 q ≤ 20 kg/m

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

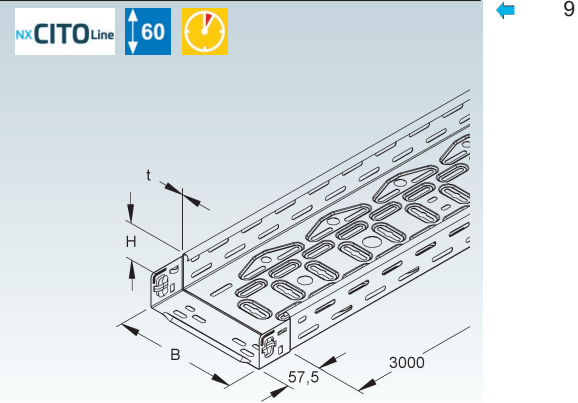
1.1 KFO Cable Tray RLVC...

Cable Tray, light

perforated, with integrated splice plate

Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
S RLVC 60.100	60	100	0,75	948178	128,52	2 x 3 m
S RLVC 60.200	60	200	0,75	948161	186,69	2 x 3 m
S RLVC 60.300	60	300	0,75	947300	243,15	2 x 3 m
S RLVC 60.400	60	400	0,9	947317	358,78	2 x 3 m
F RLVC 60.100 F	60	100	0,75	101191	141,37	2 x 3 m
F RLVC 60.200 F	60	200	0,75	101214	205,36	2 x 3 m
F RLVC 60.300 F	60	300	0,75	101221	267,47	2 x 3 m
F RLVC 60.400 F	60	400	0,9	101238	394,66	2 x 3 m

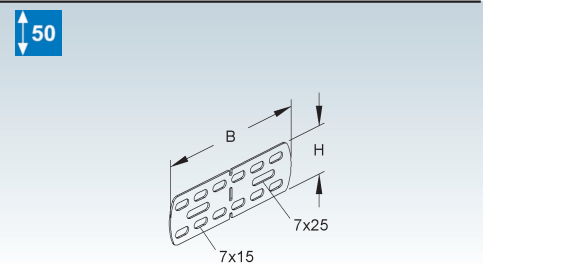
Please order the necessary screws for the joint separately.
Requirement: 4 pieces FLM 6X12 per joint



Universal-Splice Plate

Model No.	Height H	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
S RVV 50	44	135	4 FLM 6X12	258604	8,70	20 pcs.
F RVV 50 F	44	135	4 FLM 6X12 F	258505	8,69	20 pcs.

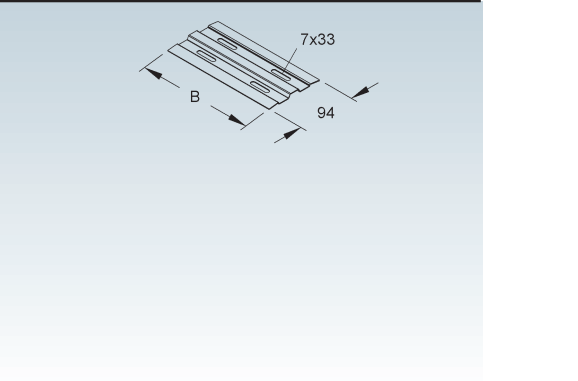
Requirement: 2 pieces per joint
Can be used as T-connector, angle connector, joint connector and splice plate



Joint Bar

Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
S RSLB 100	90	4 FLM 6X12	345908	10,00	10 pcs.
S RSLB 200	189	4 FLM 6X12	346004	13,00	10 pcs.
S RSLB 300	289	4 FLM 6X12	346103	23,00	10 pcs.
S RSLB 400	389	4 FLM 6X12	346202	31,00	10 pcs.
F RSLB 100 F	90	4 FLM 6X12 F	346226	10,70	1 pc.
F RSLB 200 F	189	4 FLM 6X12 F	346240	13,90	1 pc.
F RSLB 300 F	289	4 FLM 6X12 F	346264	24,70	1 pc.
F RSLB 400 F	389	4 FLM 6X12 F	346288	33,30	1 pc.

Requirement: 1 piece per joint

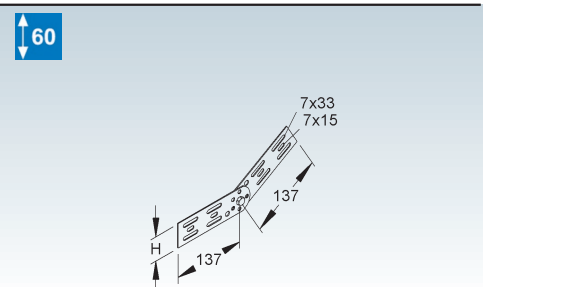


Joint Connector

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
S RGV 60	47	4 FLM 6X12	227709	19,00	50 pcs.
F RGV 60 F	47	4 FLM 6X12 F	227808	19,00	50 pcs.

for simple on-site creation of height offsets in horizontal cable systems

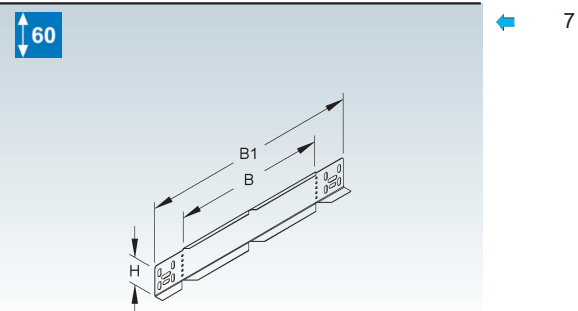
Requirement: 2 pieces per joint



Reducing-/End-/Angle Piece

Model No.	Height H	Width B	Width B1	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
S RAW 60.100	60	100	222	4 FLM 6X12	763207	13,59	20 pcs.
S RAW 60.300	60	300	422	4 FLM 6X12	763603	25,17	20 pcs.
F RAW 60.100 F	60	100	222	4 FLM 6X12 F	540730	14,64	1 pc.
F RAW 60.300 F	60	300	422	4 FLM 6X12 F	540754	27,38	1 pc.

for creating horizontal changes of direction for terminating cable tray ends and for reducing and extending continuous cable trays

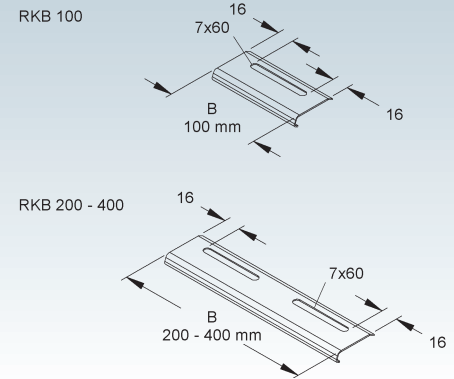


Edge Protection Plate

with rounded edges

	Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RKB 100	92	1 FLM 6X12	270200	4,27	10 pcs.
S	RKB 200	192	2 FLM 6X12	270408	8,87	10 pcs.
S	RKB 300	292	2 FLM 6X12	270606	13,01	10 pcs.
S	RKB 400	392	2 FLM 6X12	270705	17,14	10 pcs.
F	RKB 100 F	92	1 FLM 6X12 F	563500	4,62	10 pcs.
F	RKB 200 F	192	2 FLM 6X12 F	563708	9,60	10 pcs.
F	RKB 300 F	292	2 FLM 6X12 F	563906	14,16	10 pcs.
F	RKB 400 F	392	2 FLM 6X12 F	564002	18,70	10 pcs.

to reinforce the cable tray bottom and protect the cables at the cable tray end

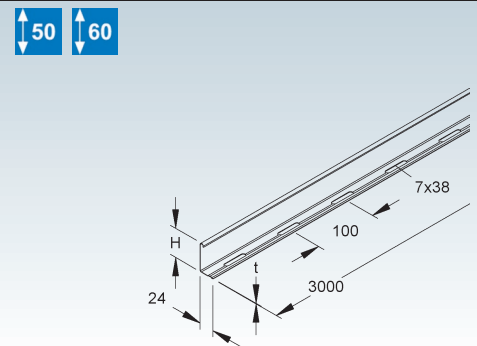


Barrier Strip

	Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm				
S	RW 50	47	0,75	4 FLM 6X12	224951	45,68	10 x 3 m
S	RW 60	55	0,75	4 FLM 6X12	225002	50,42	10 x 3 m
F	RW 60 F	55	0,75	4 FLM 6X12 F	225101	55,36	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.



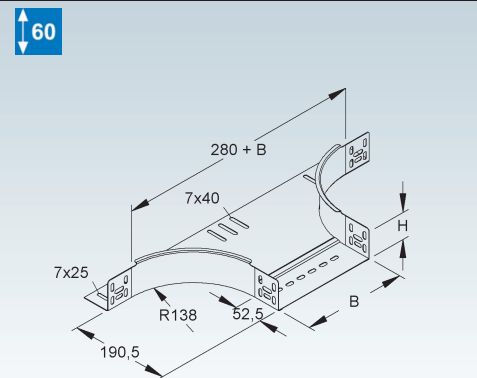
Extension T-Piece

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H	Inside dimensions width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	RTA 60.100	60	102	10 FLM 6X12	226801	79,21	1 pc.
S	RTA 60.200	60	202	10 FLM 6X12	227006	95,01	1 pc.
S	RTA 60.300	60	302	10 FLM 6X12	227204	113,06	1 pc.
S	RTA 60.400	60	402	10 FLM 6X12	227303	129,10	1 pc.
F	RTA 60.100 F	60	102	10 FLM 6X12 F	536405	85,00	1 pc.
F	RTA 60.200 F	60	202	10 FLM 6X12 F	536504	104,63	1 pc.
F	RTA 60.300 F	60	302	10 FLM 6X12 F	536603	122,30	1 pc.
F	RTA 60.400 F	60	402	10 FLM 6X12 F	536702	141,20	1 pc.

for the production of horizontal 90° T-outlets of cable trays of different as well as equal widths

Alternatively, the RTAC... fitting can also be used.

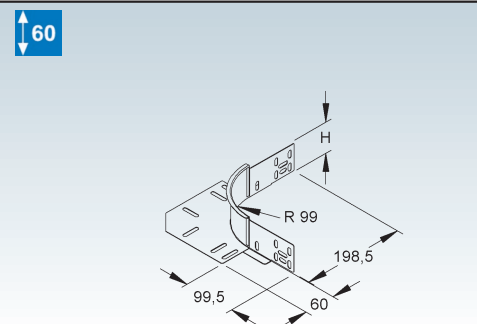


Extension Elbow

with unperforated side profile, but with connector perforations, with integrated splice plates, with continuous cable support through overlapping base plate

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	REK 60	60	6 FLM 6X12	227600	30,89	10 pcs.
F	REK 60 F	60	6 FLM 6X12 F	537006	33,51	10 pcs.

for creating horizontal 90° elbow and T-connections of cable trays



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...

Elbow 45°

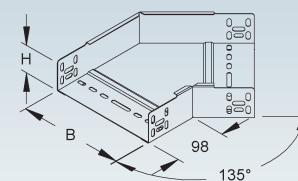
with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RBA 60.100	60	102	4 FLM 6X12	225200	43,21	1 pc.
S	RBA 60.200	60	202	5 FLM 6X12	225408	70,51	1 pc.
S	RBA 60.300	60	302	5 FLM 6X12	225606	102,85	1 pc.
S	RBA 60.400	60	402	6 FLM 6X12	225705	141,96	1 pc.
F	RBA 60.100 F	60	102	4 FLM 6X12 F	535200	47,22	1 pc.
F	RBA 60.200 F	60	202	5 FLM 6X12 F	535309	77,16	1 pc.
F	RBA 60.300 F	60	302	5 FLM 6X12 F	535408	112,73	1 pc.
F	RBA 60.400 F	60	402	6 FLM 6X12 F	535507	155,68	1 pc.

for creating 45° horizontally angled cable tray run

Alternatively, the RBAC... fitting can also be used.

60



Elbow 90°

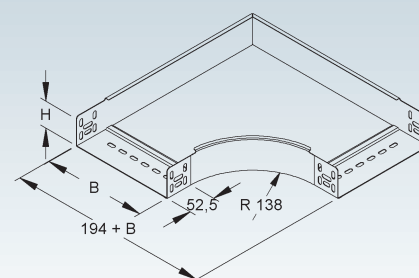
with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RES 60.100	60	102	4 FLM 6X12	226009	88,06	1 pc.
S	RES 60.200	60	202	5 FLM 6X12	226207	147,35	1 pc.
S	RES 60.300	60	302	5 FLM 6X12	226405	219,82	1 pc.
S	RES 60.400	60	402	6 FLM 6X12	226504	307,52	1 pc.
F	RES 60.100 F	60	102	4 FLM 6X12 F	535804	96,55	1 pc.
F	RES 60.200 F	60	202	5 FLM 6X12 F	535903	161,68	1 pc.
F	RES 60.300 F	60	302	5 FLM 6X12 F	536009	241,40	1 pc.
F	RES 60.400 F	60	402	6 FLM 6X12 F	536108	337,79	1 pc.

for creating horizontal 90° corner joints

Alternatively, the RESC... fitting can also be used.

60



T-Piece

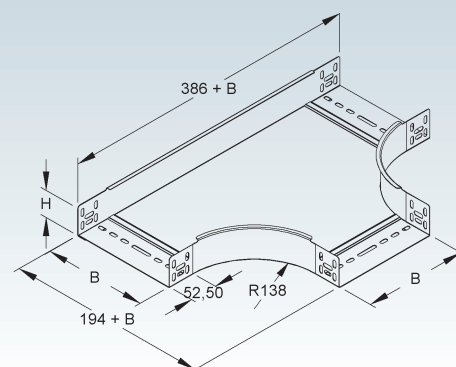
with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTS 60.100	60	102	8 FLM 6X12	228805	119,95	1 pc.
S	RTS 60.200	60	202	10 FLM 6X12	229000	200,52	1 pc.
S	RTS 60.300	60	302	12 FLM 6X12	229208	290,89	1 pc.
S	RTS 60.400	60	402	12 FLM 6X12	229307	395,37	1 pc.
F	RTS 60.100 F	60	102	8 FLM 6X12 F	538003	131,31	1 pc.
F	RTS 60.200 F	60	202	10 FLM 6X12 F	538102	219,78	1 pc.
F	RTS 60.300 F	60	302	12 FLM 6X12 F	538201	319,03	1 pc.
F	RTS 60.400 F	60	402	12 FLM 6X12 F	538300	433,96	1 pc.

for creating horizontal 90° T-outlets

Alternatively, the RTSC... fitting can also be used.

60



Crossing

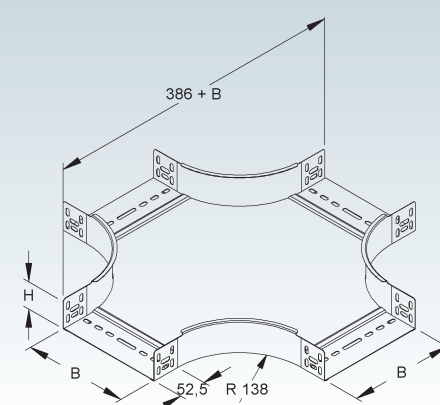
with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RKS 60.100	60	102	12 FLM 6X12	229604	159,37	1 pc.
S	RKS 60.200	60	202	15 FLM 6X12	229802	233,70	1 pc.
S	RKS 60.300	60	302	15 FLM 6X12	230006	332,40	1 pc.
S	RKS 60.400	60	402	18 FLM 6X12	230105	460,47	1 pc.
F	RKS 60.100 F	60	102	12 FLM 6X12 F	538607	161,90	1 pc.
F	RKS 60.200 F	60	202	15 FLM 6X12 F	538706	251,20	1 pc.
F	RKS 60.300 F	60	302	15 FLM 6X12 F	538805	357,40	1 pc.
F	RKS 60.400 F	60	402	18 FLM 6X12 F	538904	480,40	1 pc.

for creating horizontal 90° crossings

Alternatively, the RKSC... fitting can also be used.

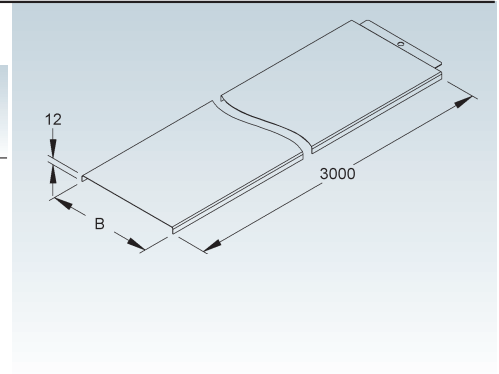
60



Cover for Cable Tray/-Ladder

with joint strip

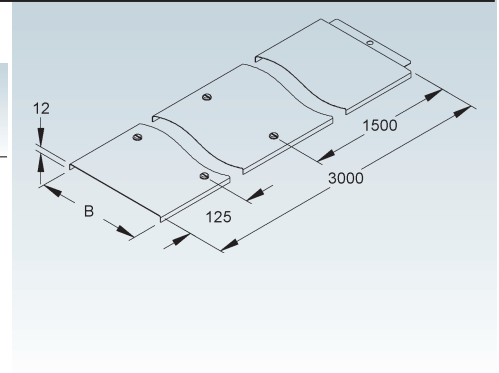
	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RD 100	102	260300	73,24	2 x 3 m
S	RD 200	202	260508	132,51	2 x 3 m
S	RD 300	302	260706	230,09	2 x 3 m
S	RD 400	402	260805	334,64	2 x 3 m
F	RD 100 F	102	262502	80,56	2 x 3 m
F	RD 200 F	202	262700	145,77	2 x 3 m
F	RD 300 F	302	262908	253,10	2 x 3 m
F	RD 400 F	402	263004	368,10	2 x 3 m



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RDV 100	102	261406	74,17	2 x 3 m
S	RDV 200	202	261604	133,44	2 x 3 m
S	RDV 300	302	261802	231,02	2 x 3 m
S	RDV 400	402	261901	335,56	2 x 3 m
F	RDV 100 F	102	263608	81,59	2 x 3 m
F	RDV 200 F	202	263806	146,79	2 x 3 m
F	RDV 300 F	302	264001	254,13	2 x 3 m
F	RDV 400 F	402	264100	369,12	2 x 3 m



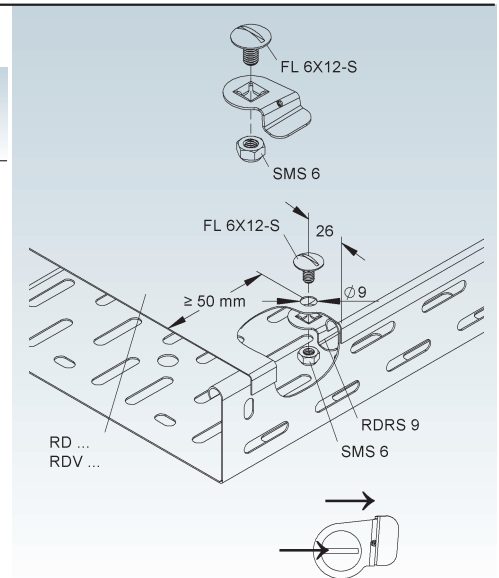
Turning Bolt

incl. locking nut acc. to DIN EN ISO 10511

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RDRS 9	1 FL 6X12-S V, 1 SMS 6 V	269907	1,20	20 pcs.
F	RDRS 9 F	1 FL 6X12-S E3, 1 SMS 6 E3	563463	1,60	20 pcs.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

Delivery unassembled loose



Cover Clamp

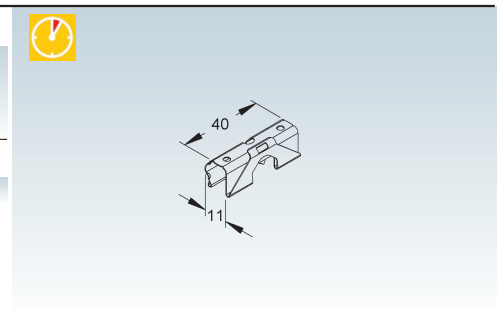
	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E2	RDHF 9 E2	920457	0,47	60 pcs.

for fastening cable tray cover without turning bolt

For additional requirements.

The cover clamp is designed for the horizontal position of the cover.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

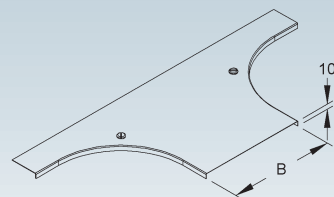
1.1 KFO Cable Tray RLVC...

Cover for Extension T-Piece

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTADV 100	104	277100	43,37	1 pc.
S	RTADV 200	204	277308	60,61	1 pc.
S	RTADV 300	304	274802	77,85	1 pc.
S	RTADV 400	404	277506	95,09	1 pc.
F	RTADV 100 F	104	559008	52,44	1 pc.
F	RTADV 200 F	204	559206	67,45	1 pc.
F	RTADV 300 F	304	559404	86,42	1 pc.
F	RTADV 400 F	404	559503	105,37	1 pc.

If the fitting RTAC... has been installed, the fitting cover RTACDV... should be used.

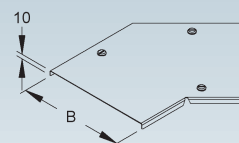


Cover for Elbow 45°

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RBADV 100	104	275106	24,99	1 pc.
S	RBADV 200	204	275304	51,21	1 pc.
S	RBADV 300	304	275502	83,94	1 pc.
S	RBADV 400	404	275601	123,17	1 pc.
F	RBADV 100 F	104	555406	28,71	1 pc.
F	RBADV 200 F	204	555604	57,55	1 pc.
F	RBADV 300 F	304	555802	93,54	1 pc.
F	RBADV 400 F	404	555901	136,70	1 pc.

If the fitting RBAC... has been installed, the fitting cover RBACDV... should be used.

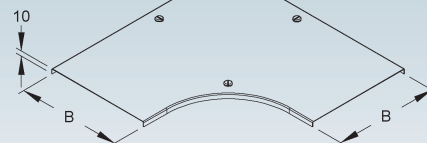


Cover for Elbow 90°

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RESDV 100	104	276202	39,00	1 pc.
S	RESDV 200	204	275007	96,39	1 pc.
S	RESDV 300	304	274901	160,52	1 pc.
S	RESDV 400	404	276509	238,78	1 pc.
F	RESDV 100 F	104	557202	44,10	1 pc.
F	RESDV 200 F	204	557400	107,23	1 pc.
F	RESDV 300 F	304	557608	177,78	1 pc.
F	RESDV 400 F	404	557707	263,87	1 pc.

If the fitting RESC... has been installed, the fitting cover RESCDV... should be used.

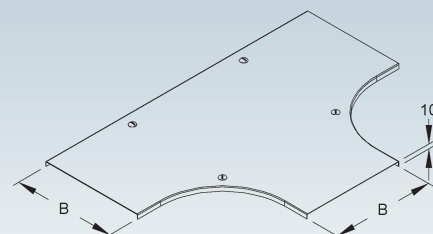


Cover for T-Piece

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTSDV 100	104	277902	72,24	1 pc.
S	RTSDV 200	204	274703	141,97	1 pc.
S	RTSDV 300	304	278206	227,41	1 pc.
S	RTSDV 400	404	278305	328,54	1 pc.
F	RTSDV 100 F	104	560806	81,08	1 pc.
F	RTSDV 200 F	204	561001	157,82	1 pc.
F	RTSDV 300 F	304	561209	251,90	1 pc.
F	RTSDV 400 F	404	561308	363,04	1 pc.

If the fitting RTSC... has been installed, the fitting cover RTSCDV... should be used.

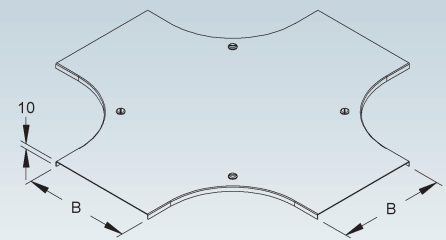


Cover for Crossing

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RKSDV 100	104	278701	95,41	1 pc.
S	RKSDV 200	204	278909	179,40	1 pc.
S	RKSDV 300	304	279104	279,10	1 pc.
S	RKSDV 400	404	279203	394,49	1 pc.
F	RKSDV 100 F	104	562602	106,57	1 pc.
F	RKSDV 200 F	204	562800	198,96	1 pc.
F	RKSDV 300 F	304	563005	308,63	1 pc.
F	RKSDV 400 F	404	563104	435,56	1 pc.

If the fitting RKSC... has been installed, the fitting cover RKSCDV... should be used.



Overhead Hanger

U-profile

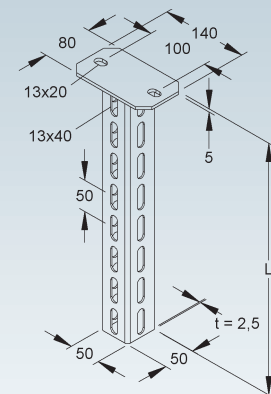
	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HU 5050/300	305	858743	117,38	1 pc.
F	HU 5050/400	405	858767	141,67	1 pc.
F	HU 5050/500	505	858781	165,97	1 pc.
F	HU 5050/600	605	858804	190,27	1 pc.
F	HU 5050/700	705	858828	214,57	1 pc.
F	HU 5050/800	805	858842	238,87	1 pc.
F	HU 5050/900	905	858866	263,16	1 pc.
F	HU 5050/1000	1005	858880	287,46	1 pc.
F	HU 5050/1100	1105	858903	311,76	1 pc.
F	HU 5050/1200	1205	858927	336,06	1 pc.

Total length = U profile length, included fixing plate.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.



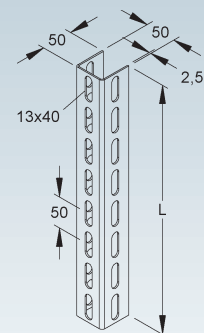
Profile U 5050

	Model No.	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	U 5050/300 F	300	918560	72,90	1 pc.
F	U 5050/400 F	400	918584	97,20	1 pc.
F	U 5050/500 F	500	918607	121,50	1 pc.
F	U 5050/600 F	600	918621	145,79	1 pc.
F	U 5050/700 F	700	918645	170,09	1 pc.
F	U 5050/800 F	800	918669	194,38	1 pc.
F	U 5050/900 F	900	918683	218,68	1 pc.
F	U 5050/1000 F	1000	918706	242,98	1 pc.
F	U 5050/1100 F	1100	918720	267,28	1 pc.
F	U 5050/1200 F	1200	918744	291,58	1 pc.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.

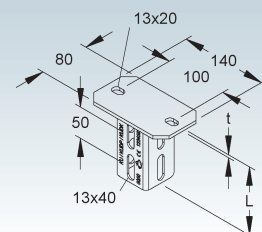


Screw Head Plate

	Model No.	Total length L mm	Thickness of head plates (t) mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KU 5050	110	5	2 FLM 10X25 F	191956	86,33	1 pc.

for mounting on straight ceilings

Three-sided slotted hole arrangement 13x40 mm in the connecting profile.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

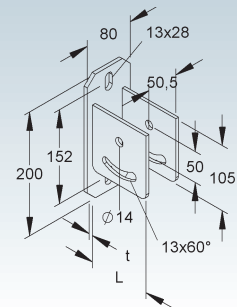
1.1 KFO Cable Tray RLVC...

Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F KUGH 5050	106	6	2 SKM 10X80 F	192229	171,12	1 pc.

for mounting on sloping walls

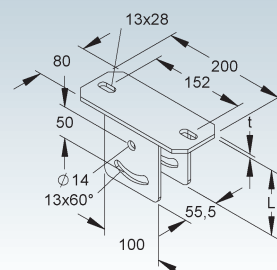


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

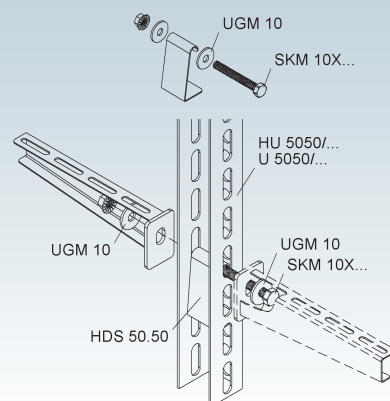
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F KUGV 5050	111	6	2 SKM 10X80 F	192151	171,12	1 pc.

for mounting on sloping walls



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HDS 50.50 F	1 SKM 10X80 F, 2 UGM 10 F	931705	16,52	50 pcs.



Overhead Hanger

U-profile

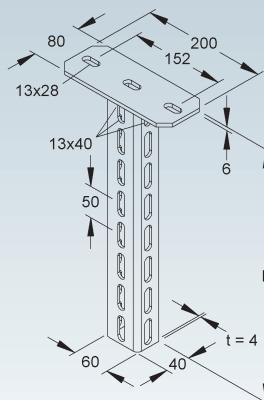
Model No.	Total length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HU 6040/300	306	891474	177,08	1 pc.
F HU 6040/400	406	891481	210,95	1 pc.
F HU 6040/500	506	891498	244,82	1 pc.
F HU 6040/600	606	891504	278,67	1 pc.
F HU 6040/700	706	891511	312,54	1 pc.
F HU 6040/800	806	891528	346,41	1 pc.
F HU 6040/900	906	891535	380,28	1 pc.
F HU 6040/1000	1006	891542	414,15	1 pc.
F HU 6040/1100	1106	891559	448,02	1 pc.
F HU 6040/1200	1206	891566	481,89	1 pc.

Total length = U profile length, included fixing plate.

Serie of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

Other lengths on request.



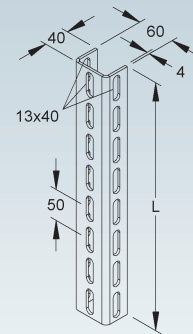
Profile U 6040

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
F U 6040/300 F	300	891627	101,61	1 pc.
F U 6040/400 F	400	891634	135,48	1 pc.
F U 6040/500 F	500	891641	169,35	1 pc.
F U 6040/600 F	600	891658	203,21	1 pc.
F U 6040/700 F	700	891665	237,07	1 pc.
F U 6040/800 F	800	891672	270,94	1 pc.
F U 6040/900 F	900	891689	304,81	1 pc.
F U 6040/1000 F	1000	891696	338,68	1 pc.
F U 6040/1100 F	1100	891702	372,55	1 pc.
F U 6040/1200 F	1200	891719	406,42	1 pc.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

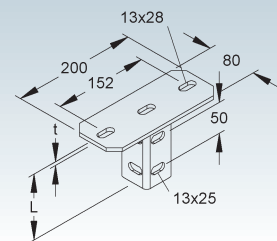
Other lengths on request.



Screw Head Plate

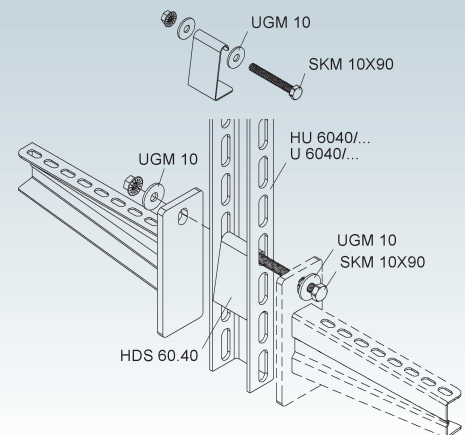
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KU 6040	106	6	2 FLM 10X25 F	891771	118,01	1 pc.

for mounting on straight ceilings



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HDS 60.40 F	1 SKM 10X90 F, 2 UGM 10 F	931729	18,59	50 pcs.

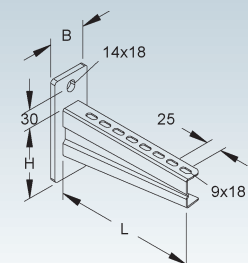


Overhead Hanger- and Wall Bracket

heavy

Model No.	Height H	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm			
F KTAS 100	113	130	917457	89,95	1 pc.
F KTAS 200	113	230	188406	108,46	1 pc.
F KTAS 300	113	330	188505	130,76	1 pc.
F KTAS 400	113	430	188604	155,40	1 pc.

Please order the necessary fastening accessories separately for cable trays.
Requirement: 2 FLM 6X12 per bracket



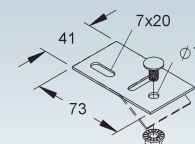
Cable Tray Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S KLAF 6 S	1 FLM 6X12	146338	4,00	25 pcs.

for fastening cable trays running at an angle to the bracket

Requirement: 2 pieces per bracket

By bending the fastening tongue by hand, the cable tray fastening is adapted to the pitch angle.



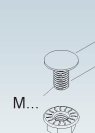
1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.1 KFO Cable Tray RLVC...

Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

	Model No.	Thread M	Length L mm	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V	FLM 6X12	6	12	-	206209	0,79	10 pcs.
F	FLM 6X12 F	6	12	-	206407	0,79	50 pcs.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

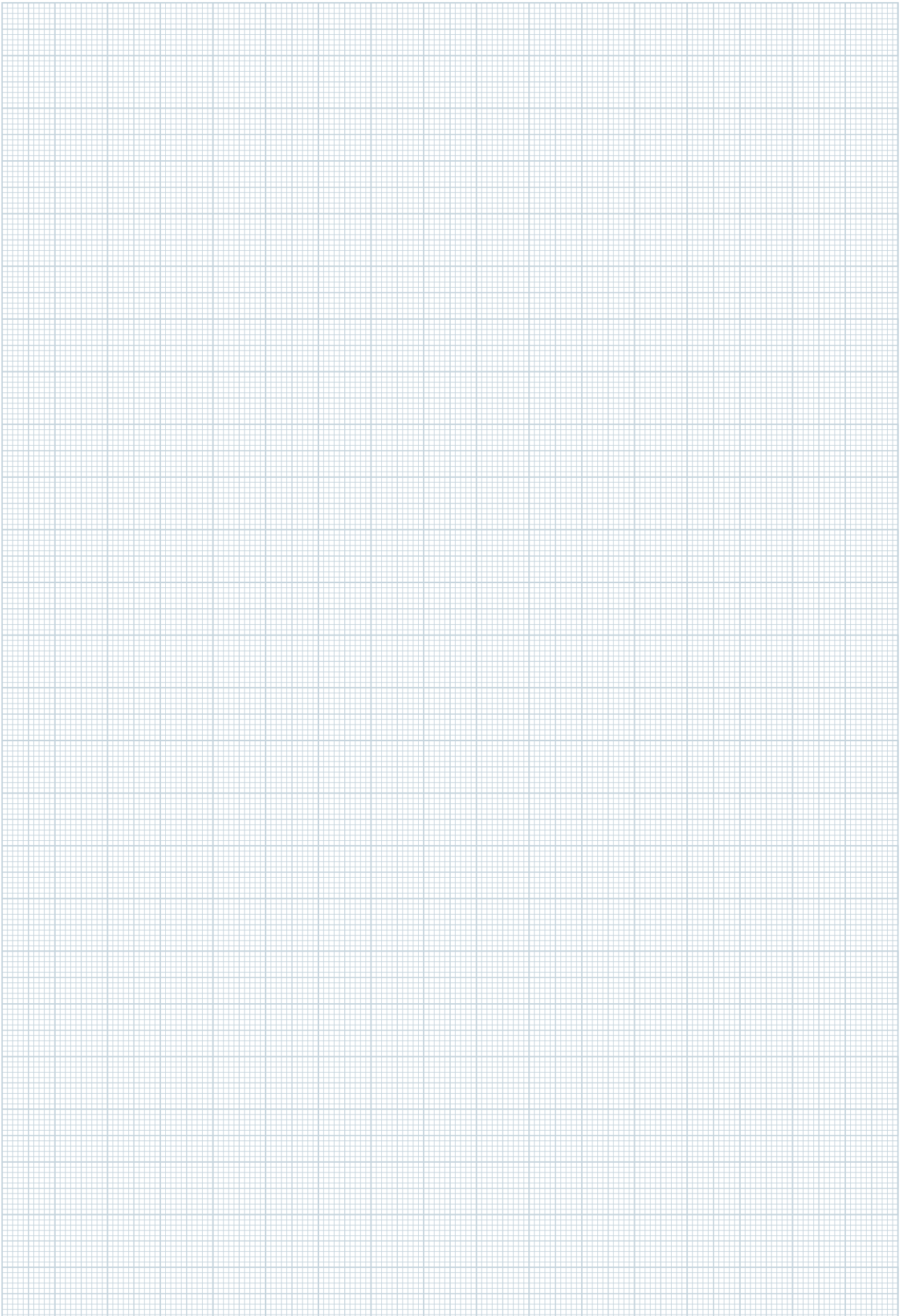
Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co.KG Asbacher Straße 141 D-53545 Linz am Rhein Tel: +49 (0) 2644/5606-0 www.niedax.com		ACHTUNG! Trasse nur für elektrischen Funktionserhalt 
Kabelanlage E _____ gemäß DIN 4102-12		
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		



NOTES

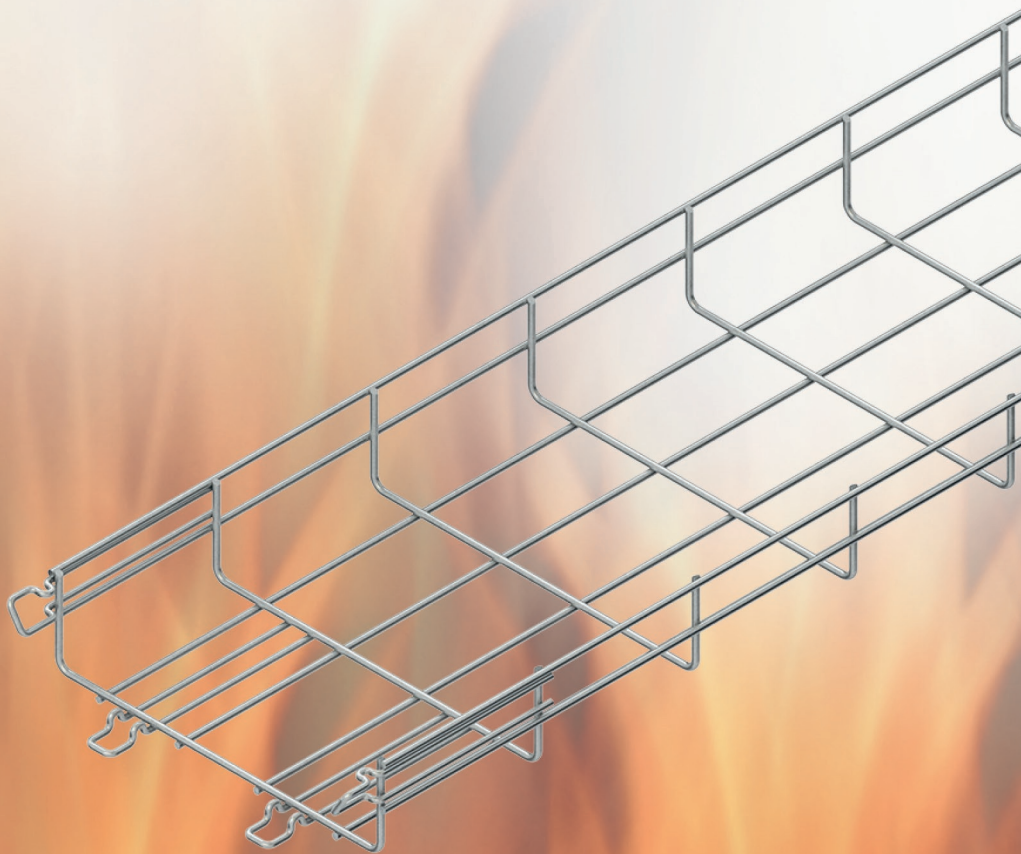


1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...



← 241



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Tray MTC...

With the KFO MTC cable installation system for circuit integrity maintenance in accordance with DIN 4102 Part 12, we are consistently continuing the success story of installation systems without additional threaded rods.

Of course, this installation system also offers you the advantages of high load-bearing capacity with a practice-oriented fastening spacing and cable laying without threading.

The MTC 54... wire mesh tray as well as the fittings can also be electrically and mechanically connected to each

other when used in the circuit integrity maintenance with the help of the integrated connectors without further accessories.

E30, E60 and E90 classified systems are available with the circuit integrity maintenance cables from Dätwyler, Eupen or Studer Cables AG.

Wire mesh trays, overhead hangers, brackets and other system-related accessories are directly available.

Support span $a \leq 1,5 \text{ m}$
Cable load $q \leq 15 \text{ kg/m}$

For this type of installation in accordance with DIN 4102 Part 12 for circuit integrity maintenance classes E30 to E90, wire mesh trays with a rail height of 54 mm are used in widths of 100 to 400 mm. Optimum load-bearing capacity is achieved by combining different wire thicknesses.

The connection of two lengths or a length and a fitting is made via the integrated connectors without additional components. Alternatively, cut mesh cable trays can be connected with the universal-splice plate GRHKM 6x15 (number and arrangement according to the integrated connector). The position of the joint is not tied to a specific position.

Horizontal and vertical changes of direction can be realised with the adjustable elbow 90° MTCE 54... as well as the universal-splice plate GRHKM 6X15 and the joint connector GRGV... .

All changes of direction must be supported in the immediate vicinity of the joint (distance $\leq 150 \text{ mm}$) by an appropriate

supporting structure.

In the case of horizontal routing with height offsets, the wire mesh tray must be fastened to the bracket KTAS... using cable tray fasteners KLAF 6. The mounting plate of the KLAF 6 can be adapted to any angle of inclination by bending it by hand. To protect the cables, make sure that the longitudinal wires of the wire mesh trays are flush with the cross wire of the mesh cable tray end.

For ceiling installations, the HU 5050/... or HU 6040/... overhead hangers are available, or for greater flexibility on site, corresponding U-profiles and head plates.

When mounting the bracket KTAS... on the overhead hangers or U-profile, the overhead hanger-distance profile HDS... must be used.

The suspension construction

consists of:

- Overhead hangers **HU 5050/...**
- or the profile **U 5050/...**
- with a screw head plate **KU 5050, KUGH 5050, KUGV 5050**
- as well as the overhead hanger/wall brackets **KTAS 100 - 400**

When mounting the brackets on overhead hangers, it is essential to use the distance profile **HDS 50.50 F** with screw **SKM 10X80 F** for both one-sided and two-sided fastening (see illustrations on the following pages). Please order the screws for fastening the wire mesh tray to the brackets (2 GRSM 6 per bracket) separately.

Changes of direction on both sides in horizontal and/or vertical direction must be supported by an appropriate supporting structure in the immediate vicinity of the connection points.

The fastening

of the suspension construction is carried out with:

- Building authority approved dowel M 10 or M 12 (depending on the version)

The material requirement

of the suspension construction per suspension unit:

Designation	Model No.					
Overhead hanger or profile with head plate	HU 5050/... U 5050/... KU 5050, KUGH 5050 resp. KUGV 5050	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
Overhead hanger-and wall bracket	KTAS 100 - 400	1	2	2	3	4
Overhead hanger-distance profile	HDS 50.50 F	1	2	1	2	2
Hook Bolt	GRSM 6	2	4	4	6	8
Dowels for MTC 54.100 - MTC 54.200	M10	2	2	2	2	2
Dowels for MTC 54.300 - MTC 54.400	M12	2	2	2	2	2

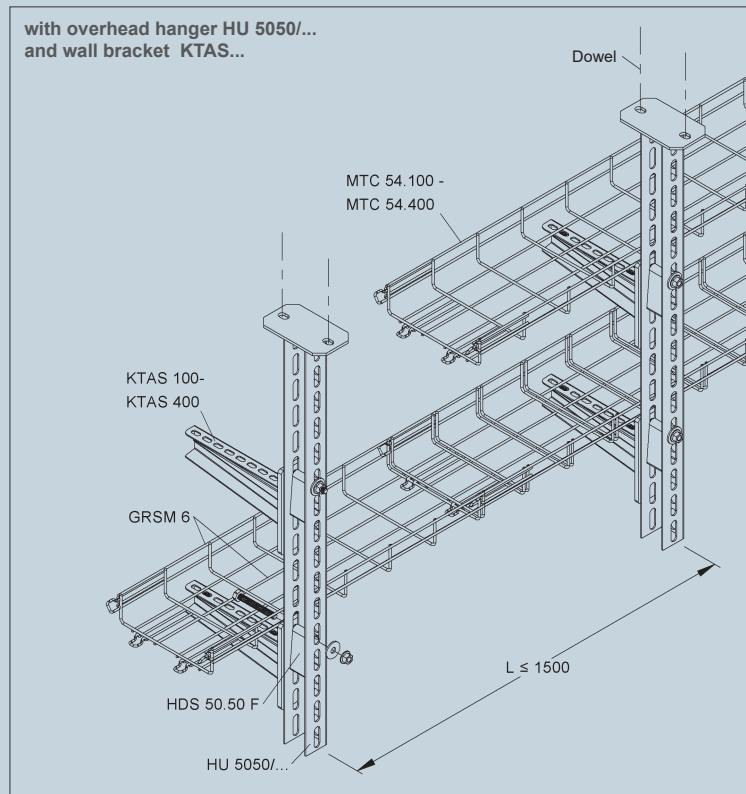
Other suspension variants on request!

Suitable dowels can be found in chapter "8 Fastening Elements". ➔ 256

Ceiling mounting

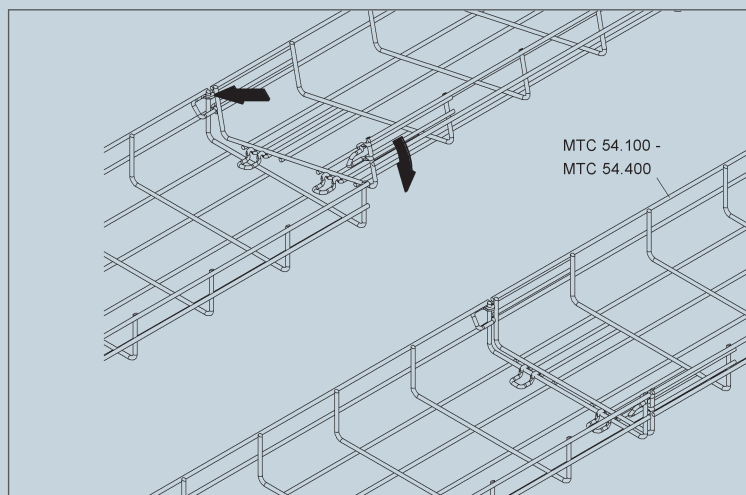


Bracket length = wire mesh tray width . Wire mesh tray width B 100 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 15$ kg/m



Wire mesh cable trays with a rail height of 54 mm, in widths 100 to 400 mm (MTC 54.100 - MTC 54.400) are used for ceiling and wall installation. The wire mesh trays are fixed to the brackets with 2 hook bolts GRSM 6.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



The connection of two wire mesh cable trays MTC 54... is made by simply snapping them together using the welded-on connector lugs.

For alternative joint connections for cut mesh cable trays, see ➡ 33

Alternatively, the suspensions for this installation system can also be made with **HU 6040/...** overhead hanger, **U6040/...** U-profile, **KU 6040** head plate and **HDS 60.40** overhead hanger-distance profile (see products from ➡ 38).

The wall mounting

consists of:

Overhead hanger/wall bracket **KTAS 100 - 400**

Please order the screws for fastening the wire mesh tray to the brackets (2 GRSM 6 per bracket) separately.

The fastening

to the wall is carried out with

screws/dowels M 10 approved by the building authorities

The material requirement

of the wall fastening per suspension unit:

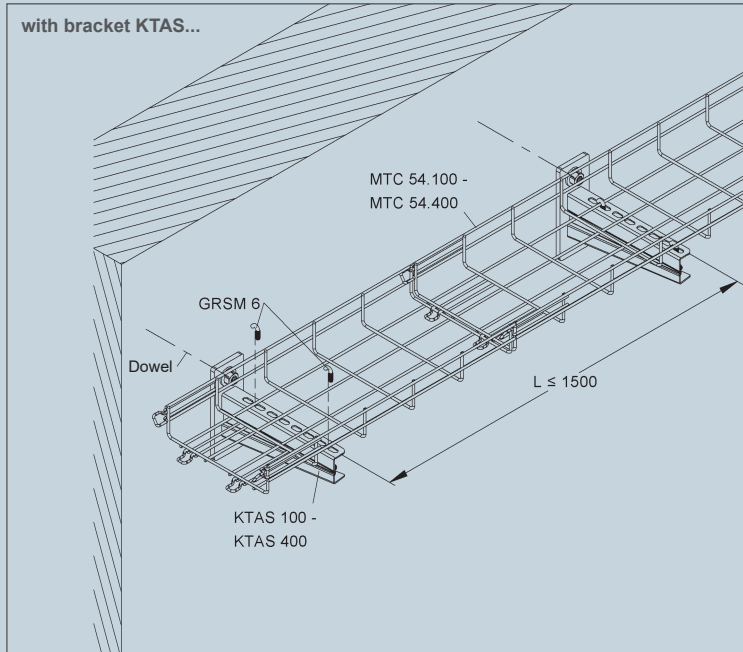
Designation	Model No.	
Overhead hanger- and wall bracket	KTAS 100 - 400	1
Hook bolt	GRSM 6	2
Dowels for MTC 54.100 - MTC 54.400	M10	1

Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256

Wall mounting



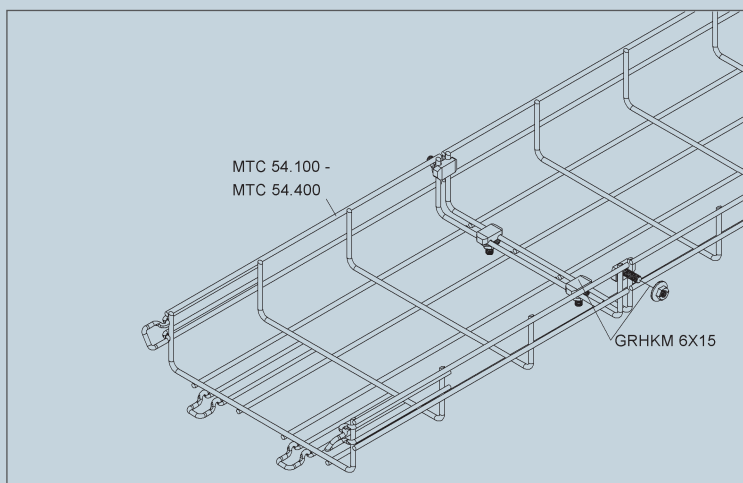
Bracket length = wire mesh tray width . Wire mesh tray width B 100 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 15$ kg/m



Wire mesh cable trays with a rail height of 54 mm, in widths of 100 to 400 mm (MTC 54.100 - MTC 54.400) are used for ceiling and wall installation.

The wire mesh cable trays are fixed to the brackets with 2 hook bolts GRSM 6.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



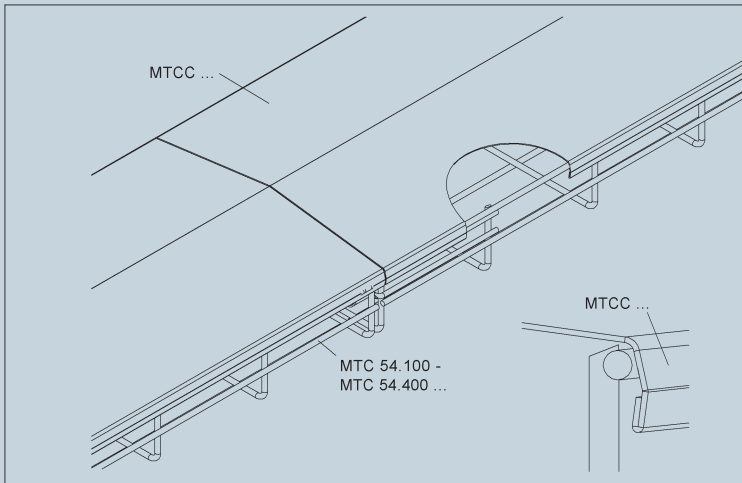
Two cut wire mesh cable tray ends of the MTC 54... are connected using the two-part universal-splice plates GRHKM 6X15.

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...

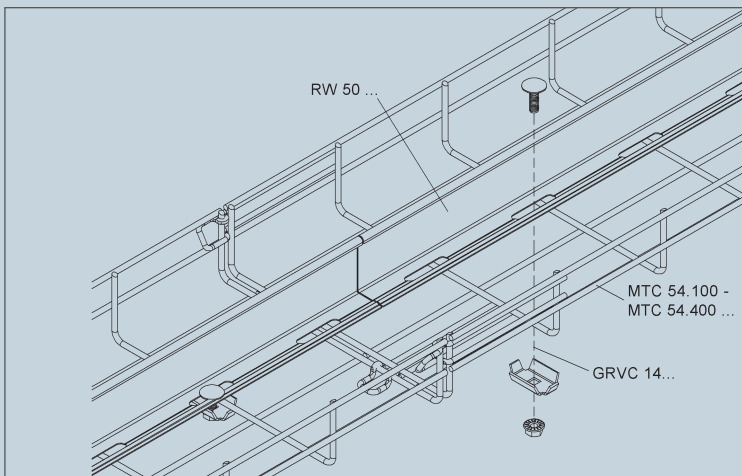


Cover fastening



If covers MTCC... are used, the max. permissible cable weight must be reduced by the weight of the cover.

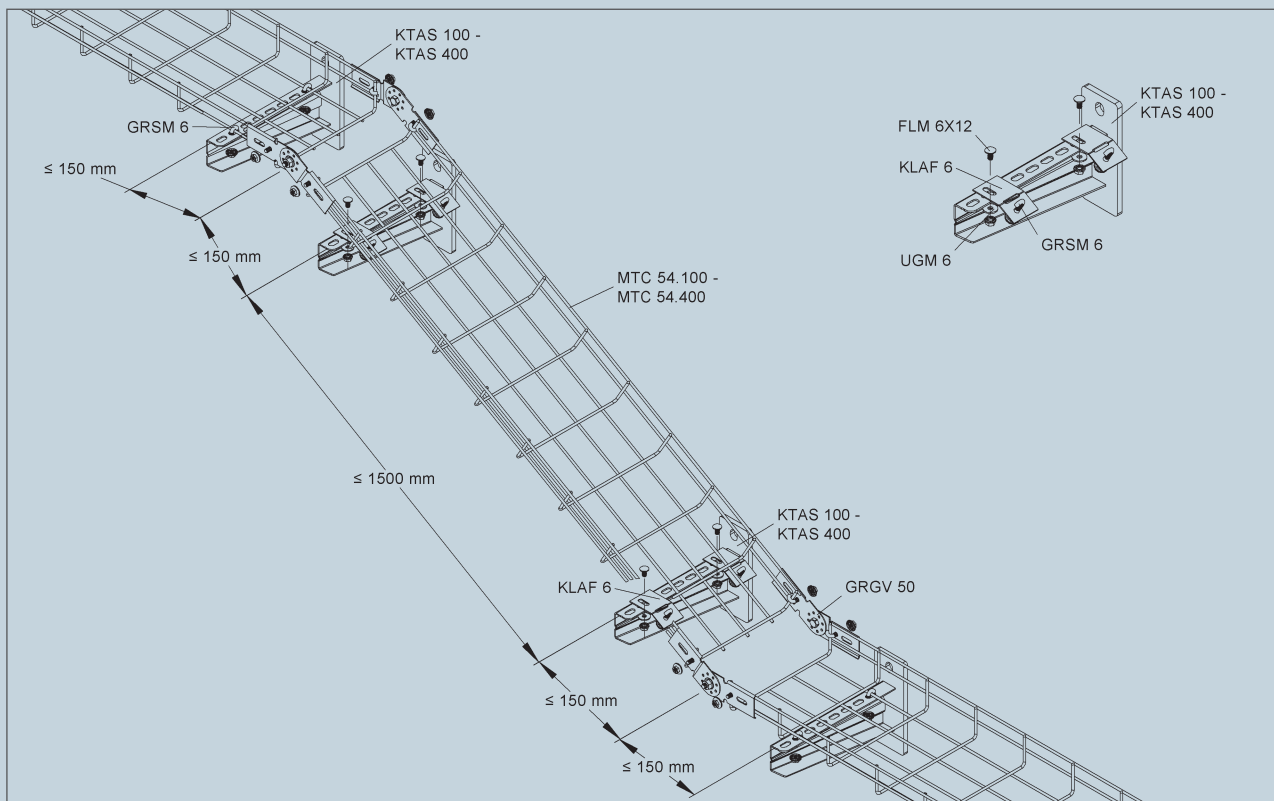
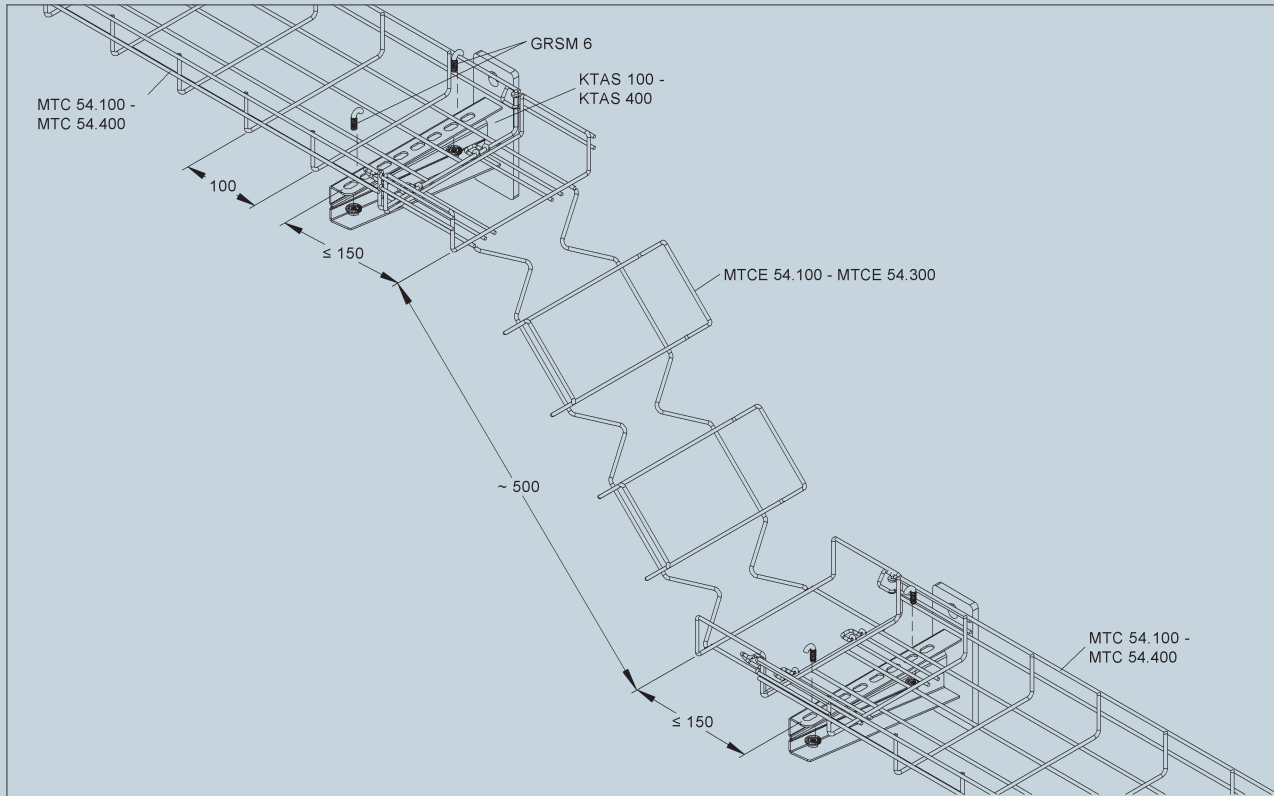
Barrier strip assembly



To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW... can be used. This is fastened using the GRVC 14 barrier strip fastening clamp.



Overhead hanger and wall mounting of fittings for KFO MTC...

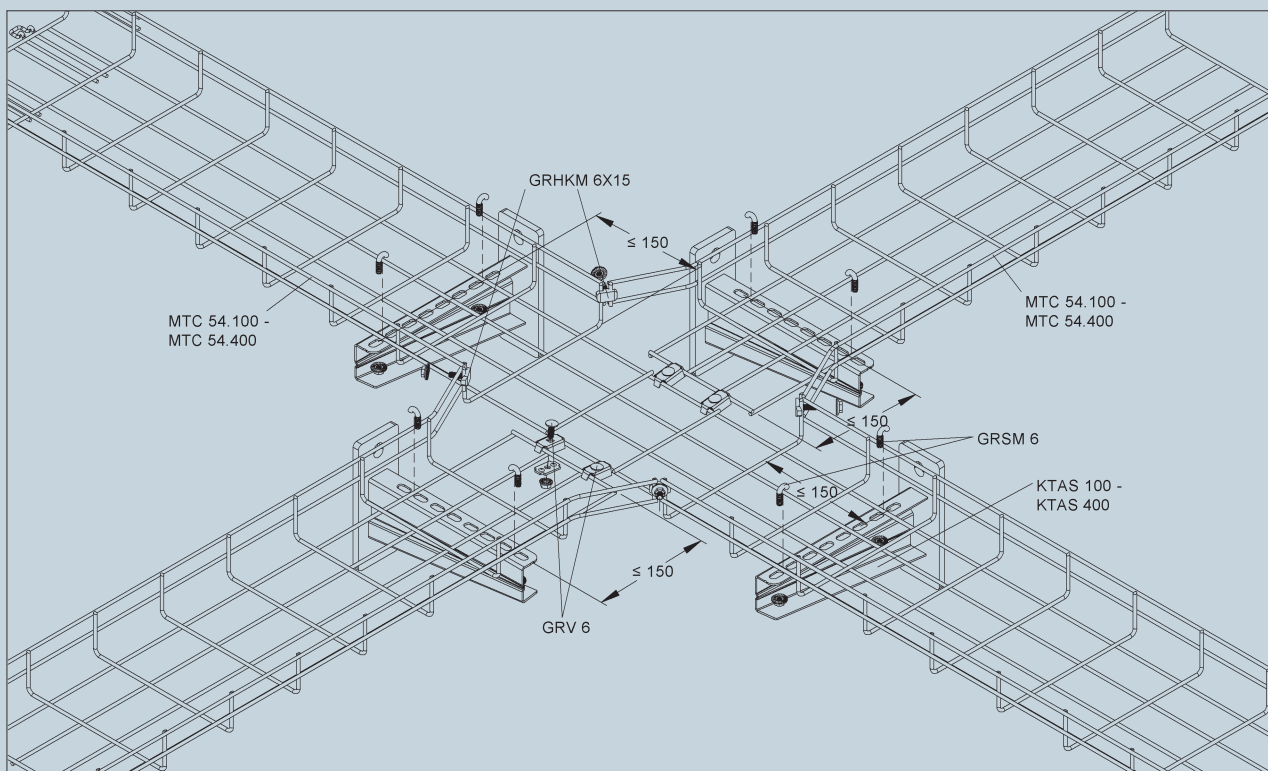
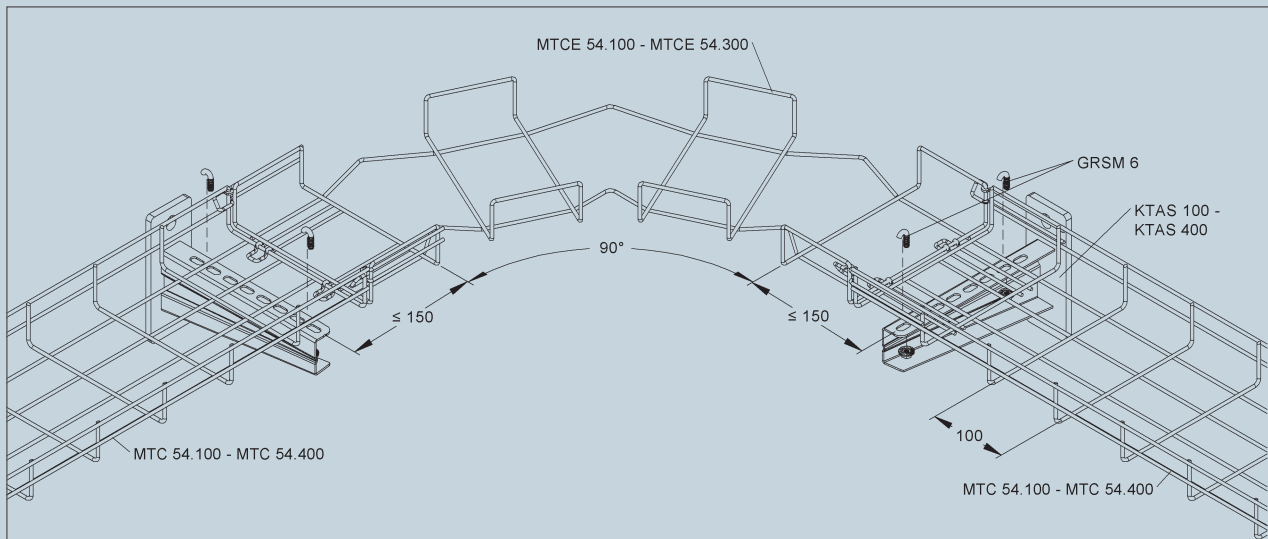


1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...



Overhead hanger and wall mounting of fittings for KFO MTC...



Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type Cable type	Ceiling mounting Overhead hanger HU 5050/L & HU 6040/L			Wall mounting Bracket KTAS...		
		B ≤ 200 mm q ≤ 15 kg/m a ≤ 1500 mm	B = 300 mm q ≤ 15 kg/m a ≤ 1500 mm	B = 400 mm q ≤ 15 kg/m a ≤ 1500 mm	B ≤ 200 mm q ≤ 15 kg/m a ≤ 1500 mm	B = 300 mm q ≤ 15 kg/m a ≤ 1500 mm	B = 400 mm q ≤ 15 kg/m a ≤ 1500 mm
Dätwyler AG Kabel + Systeme	Pyrofil Keramik (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30	E30	E30	E30	E30
	Pyrofil Keramik (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30	E60	E30	E30	E60
	Pyrofil Keramik (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	-	-	E90	-	-	E90
	Pyrofil Keramik (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90	E90	E90	E90	E90
	Pyrofil Keramik JE-H(St)H... FE180 E30L n x 2 x 0,8 mm	E30	E30	E60	E30	E30	E60
	Pyrofil Keramik JE-H(St)H... FE180 E30 - E90 n x 2 x 0,8 mm	E30	-	-	E30	-	-
Kabelwerk Eupen AG	Eucasafe (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30	E30	E30	E30	E30
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	-	-	E90	-	-
	Eucasafe JE-H(St)H... FE180 E30 n x 2 x 0,8 mm	E30	E30	E30	E30	E30	E30
	Eucasafe JE-H(St)H... FE180 E90 n x 2 x 0,8 mm	E90	-	-	E90	-	-
Studer Cables AG	BETAflam (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30	E30	E30	E30	E30
	BETAflam (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30	E30	-	E30	E30
	BETAflam (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	-	-	E90	E90	-	E90
	BETAflam (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90	E90	-	E90	E90
	BETAflam JE-H(St)H... FE180 E30 SIR n x 2 x 0,8 mm	E30	E30	E60	E60	E60	E30
	BETAflam JE-H(St)H... FE180 E30 - E90 n x 2 x 0,8 mm	E60	E60	E90	E90	E90	E90
	BETAflam JE-H(St)HRH... FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30	E30	E90	E60	E90

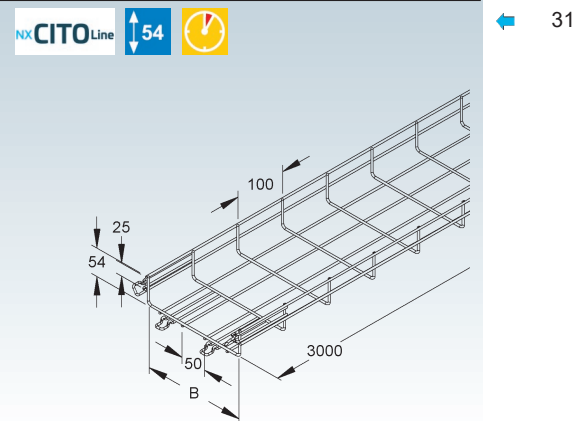
1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...

Wire Mesh Tray

U-shaped, spot-welded from steel wires, with welded connector

Model No.	Width inside B	Steel wire-Ø lengthwise	Steel wire-Ø crosswise	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
V MTC 54.100 V	100	3,9	3,9	711277	76,66	3 m
V MTC 54.200 V	200	3,9	3,9	711291	104,16	3 m
V MTC 54.300 V	300	4,82	4,82	711314	202,94	3 m
V MTC 54.400 V	400	4,82	5,82	711321	283,58	3 m
F MTC 54.100 F	100	3,9	3,9	712076	84,33	3 m
F MTC 54.200 F	200	3,9	3,9	712090	114,58	3 m
F MTC 54.300 F	300	4,82	4,82	712113	223,24	3 m
F MTC 54.400 F	400	4,82	5,82	712120	311,94	3 m

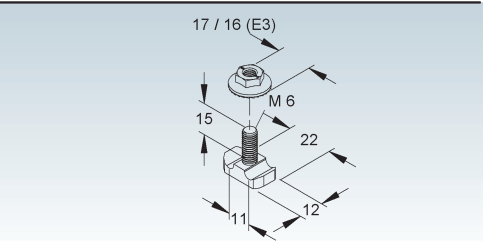


Universal-Splice Plate

two-piece

Model No.	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V GRHKM 6X15 V	8.8	012442	1,78	50 pcs.
F GRHKM 6X15 F	8.8	012435	1,78	50 pcs.

for simple on-site creation of horizontal and vertical changes of direction

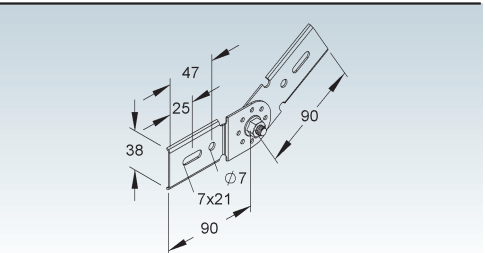


Joint Connector

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S GRGV 50	2 GRSM 6 V	940561	13,62	10 pcs.
F GRGV 50 F	2 GRSM 6 F	940585	18,26	10 pcs.

for simple on-site creation of height offsets in horizontal cable systems

Requirement: 2 pieces per joint

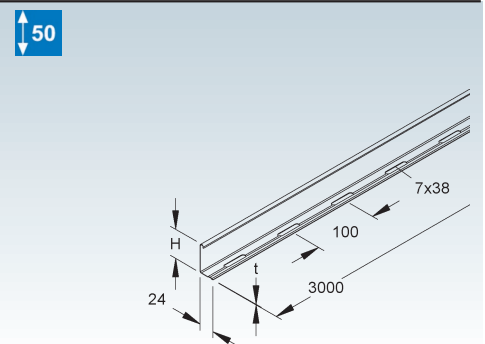


Barrier Strip

Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm				
S RW 50	47	0,75	4 FLM 6X12	224951	45,68	10 x 3 m
F RW 50 F	47	0,75	4 FLM 6X12 F	938551	50,14	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

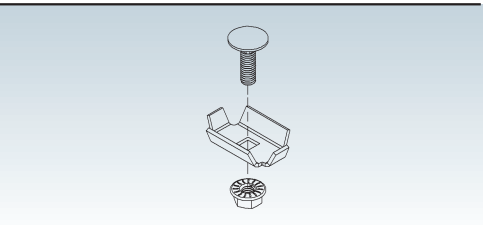
The continuously perforated folding allows for stepless mounting.



Barrier Strip Fastening Clamp

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S GRVC 14	1 FLM 6X20 F	280308	2,20	50 pcs.
F GRVC 14 F	1 FLM 6X20 F	280339	2,31	50 pcs.

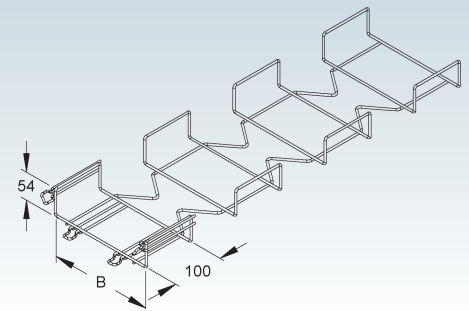
for attaching barrier strip to wire mesh trays



Elbow 90°, adjustable

U-shaped, spot-welded from steel wires, with welded-on connector

Model No.	Width inside B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V MTCE 54.100 V	100	711512	30,55	1 pc.
V MTCE 54.200 V	200	711550	54,45	1 pc.
V MTCE 54.300 V	300	711574	106,80	1 pc.
F MTCE 54.100 F	100	712311	33,61	1 pc.
F MTCE 54.200 F	200	712359	59,90	1 pc.
F MTCE 54.300 F	300	712373	117,48	1 pc.

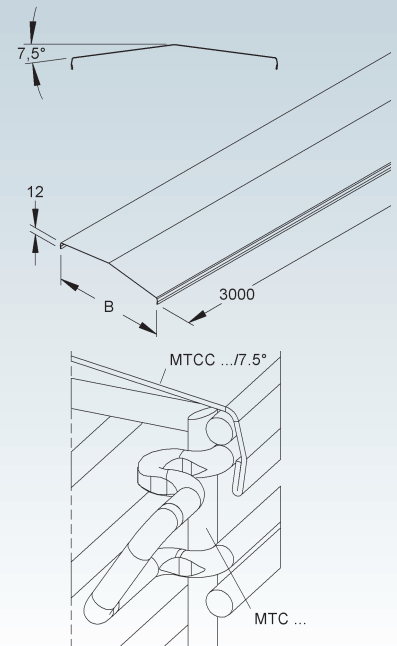


Cover for Wire Mesh Tray in Roof Shape

Angle of inclination 7.5°

Model No.	Width B mm	Material thickness (t) mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S MTCC 100/7.5° S	111	0,75	154654	86,04	3 m
S MTCC 200/7.5° S	213	0,75	154661	146,02	3 m
S MTCC 300/7.5° S	315	0,9	154678	248,69	3 m
S MTCC 400/7.5° S	416	0,9	154685	314,86	3 m
F MTCC 100/7.5° F	111	0,75	154692	94,62	3 m
F MTCC 200/7.5° F	213	0,75	154715	160,60	3 m
F MTCC 300/7.5° F	315	0,9	154722	273,54	3 m
F MTCC 400/7.5° F	416	0,9	154739	346,32	3 m

to snap-fit on U-shaped wire mesh trays



Overhead Hanger

U-profile

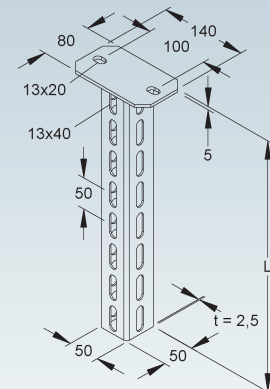
Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HU 5050/300	305	858743	117,38	1 pc.
F HU 5050/400	405	858767	141,67	1 pc.
F HU 5050/500	505	858781	165,97	1 pc.
F HU 5050/600	605	858804	190,27	1 pc.
F HU 5050/700	705	858828	214,57	1 pc.
F HU 5050/800	805	858842	238,87	1 pc.
F HU 5050/900	905	858866	263,16	1 pc.
F HU 5050/1000	1005	858880	287,46	1 pc.
F HU 5050/1100	1105	858903	311,76	1 pc.
F HU 5050/1200	1205	858927	336,06	1 pc.

Total length = U profile length, included fixing plate.

Serie of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...

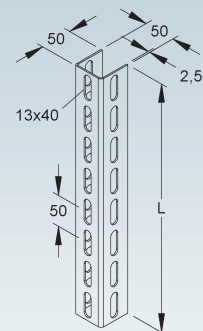
Profile U 5050

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
F U 5050/300 F	300	918560	72,90	1 pc.
F U 5050/400 F	400	918584	97,20	1 pc.
F U 5050/500 F	500	918607	121,50	1 pc.
F U 5050/600 F	600	918621	145,79	1 pc.
F U 5050/700 F	700	918645	170,09	1 pc.
F U 5050/800 F	800	918669	194,38	1 pc.
F U 5050/900 F	900	918683	218,68	1 pc.
F U 5050/1000 F	1000	918706	242,98	1 pc.
F U 5050/1100 F	1100	918720	267,28	1 pc.
F U 5050/1200 F	1200	918744	291,58	1 pc.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.

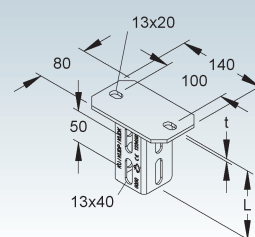


Screw Head Plate

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KU 5050	110	5	2 FLM 10X25 F	191956	86,33	1 pc.

for mounting on straight ceilings

Three-sided slotted hole arrangement 13x40 mm in the connecting profile.

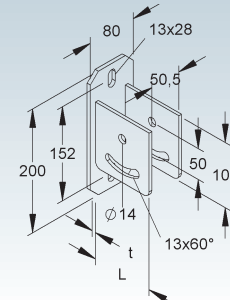


Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGH 5050	106	6	2 SKM 10X80 F	192229	171,12	1 pc.

for mounting on sloping walls

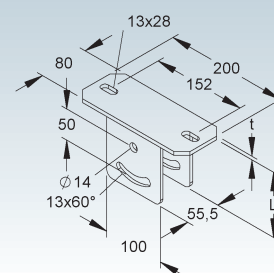


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

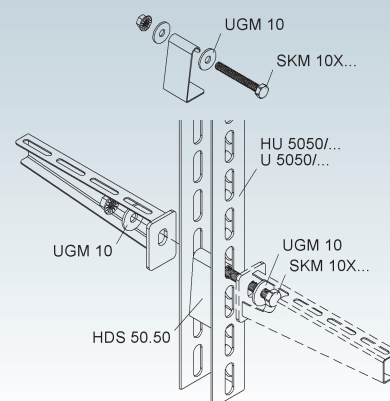
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGV 5050	111	6	2 SKM 10X80 F	192151	171,12	1 pc.

for mounting on sloping walls



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HDS 50.50 F	1 SKM 10X80 F, 2 UGM 10 F	931705	16,52	50 pcs.



Overhead Hanger

U-profile

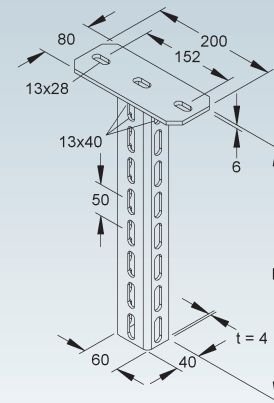
	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HU 6040/300	306	891474	177,08	1 pc.
F	HU 6040/400	406	891481	210,95	1 pc.
F	HU 6040/500	506	891498	244,82	1 pc.
F	HU 6040/600	606	891504	278,67	1 pc.
F	HU 6040/700	706	891511	312,54	1 pc.
F	HU 6040/800	806	891528	346,41	1 pc.
F	HU 6040/900	906	891535	380,28	1 pc.
F	HU 6040/1000	1006	891542	414,15	1 pc.
F	HU 6040/1100	1106	891559	448,02	1 pc.
F	HU 6040/1200	1206	891566	481,89	1 pc.

Total length = U profile length, included fixing plate.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

Other lengths on request.



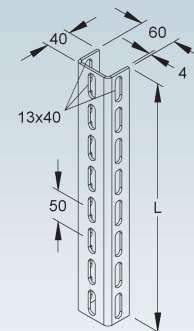
Profile U 6040

	Model No.	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	U 6040/300 F	300	891627	101,61	1 pc.
F	U 6040/400 F	400	891634	135,48	1 pc.
F	U 6040/500 F	500	891641	169,35	1 pc.
F	U 6040/600 F	600	891658	203,21	1 pc.
F	U 6040/700 F	700	891665	237,07	1 pc.
F	U 6040/800 F	800	891672	270,94	1 pc.
F	U 6040/900 F	900	891689	304,81	1 pc.
F	U 6040/1000 F	1000	891696	338,68	1 pc.
F	U 6040/1100 F	1100	891702	372,55	1 pc.
F	U 6040/1200 F	1200	891719	406,42	1 pc.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

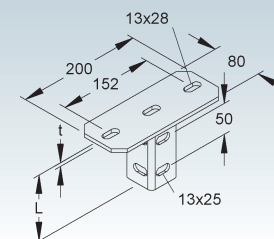
Other lengths on request.



Screw Head Plate

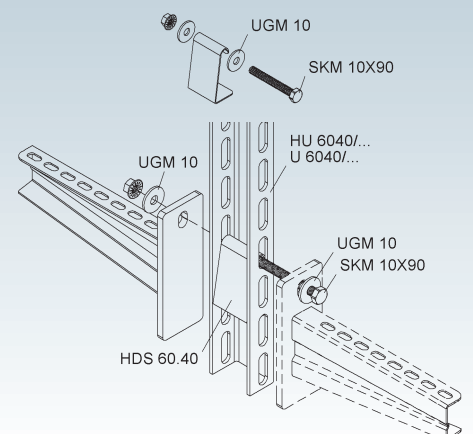
	Model No.	Total length L mm	Thickness of head plates (t) mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KU 6040	106	6	2 FLM 10X25 F	891771	118,01	1 pc.

for mounting on straight ceilings



Overhead Hanger-Distance Profile

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HDS 60.40 F	1 SKM 10X90 F, 2 UGM 10 F	931729	18,59	50 pcs.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.2 KFO Wire Mesh Cable Tray MTC...

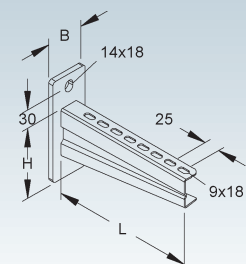
Overhead Hanger- and Wall Bracket

heavy

	Model No.	Height H	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm			
F	KTAS 100	113	130	917457	89,95	1 pc.
F	KTAS 200	113	230	188406	108,46	1 pc.
F	KTAS 300	113	330	188505	130,76	1 pc.
F	KTAS 400	113	430	188604	155,40	1 pc.

Please order the necessary fastening accessories separately for wire mesh trays.

Requirement: 2 pieces GRSM 6 per bracket



Cable Tray Fastening

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	KLAF 6 S	1 FLM 6X12	146338	4,00	25 pcs.

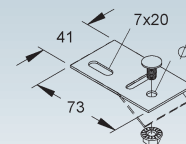
for fastening sloping wire mesh trays to the bracket

Requirement: 2 pieces per bracket

By bending the fastening tongue by hand, the cable tray fastening is adapted to the pitch angle.

Please order the necessary fastening accessories separately.

Requirement: 2 pieces GRSM 6

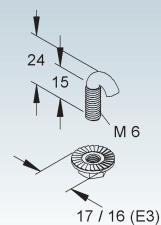


Hook Bolt

incl. toothed flange nut similar to DIN EN 1661

	Model No.	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V	GRSM 6 V	6	280506	1,09	50 pcs.
F	GRSM 6 F	6	940554	1,09	50 pcs.

for mounting of wire mesh trays



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

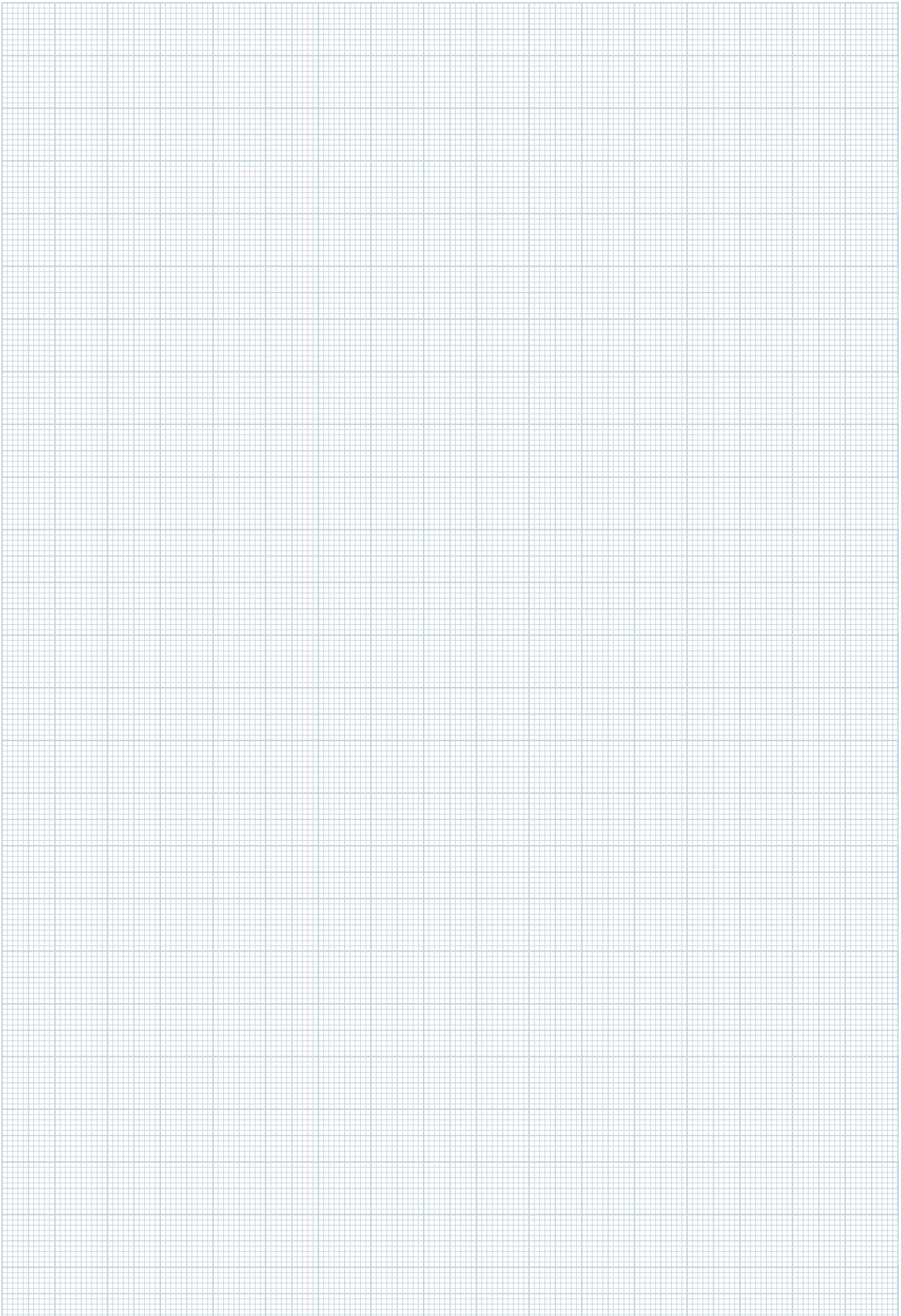
	Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
	HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

		Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/506-0 www.niedax.com	
Kabelanlage E gemäß DIN 4102-12					
Errichtungsdatum: _____					
Errichter der Anlage: _____					
Prüfzeugnis-Nr.: _____					
Prüfzeugnis Inhaber: _____					
					ACHTUNG! Trasse nur für elektrischen Funktionserhalt



NOTES



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.3 KFO Cable Ladder KL...



← 241



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.3 KFO Cable Ladder KL...

With the KFO KL cable installation system (without additional threaded rod) for circuit integrity maintenance in accordance with DIN 4102 Part 12, we offer you a unique installation option in galvanised or stainless steel (for the stainless steel version, see chapter “2.2 KFO cable ladder KL... E5 and suspensions in E5”). ➡ 88

This installation option also offers all the advantages such as high load capacity, standard fastening spacing, cable

installation without threading and E30 - E90 classifications with the circuit integrity maintenance cables from Dätwyler, Eupen or Studer Cables AG.

Cable ladders, overhead hangers, brackets and other system-related accessories are available directly.

Support span $a \leq 1,5 \text{ m}$
Cable load $q \leq 20 \text{ kg/m}$

For this cable-specific installation option according to DIN 4102 Part 12 for the circuit integrity maintenance classes E30 to E90, the cable ladder KL 60... with a rail height of 60 mm and a material thickness of 1.5 mm is used in the widths 200 to 400 mm. To increase the support surface, these cable ladders have C-profile rungs of type 2970 at a distance of 150 mm. Type B... U-bolt clamps can be used for cable fastening.

The joint connections are made with two KLV B 60/4 splice plates and 4 FLM 8X13 mushroom-head bolts each. The position of the joint is not bound to a specific position.

With angle connectors KWV 60 and joint connectors KGV 60, horizontal and vertical changes of direction can be realised on site. All changes of direction must be supported in the immediate vicinity of the joint (distance $\leq 150 \text{ mm}$) by an appropriate supporting structure.

In the case of horizontal routing with height offsets, the cable ladder running at an angle must be fastened to the

bracket KTAS... using cable tray fasteners KLA 6. In doing so, the fastening plate of the KLA 6 can be adapted to any incline angle by bending it by hand.

For ceiling installations, the HU 5050/... or HU 6040/... overhead hangers are available, or for greater flexibility on site, corresponding U-profiles and head plates.

When mounting the bracket KTAS... on the overhead hangers or U-profile, the overhead hanger-distance profile HDS... must be used.

The suspension construction

consists of:

- Overhead hangers **HU 5050/...**
- or the profile **U 5050/...**
- with a screw head plate **KU 5050, KUGH 5050, KUGV 5050**
- as well as the overhead hanger/wall brackets **KTAS 200 - 400**

When mounting the brackets on the overhead hanger, it is essential to use the distance profile **HDS 50.50 F** with screw **SKM 10X80 F** for both one-sided and two-sided fastening (see illustrations on the following pages). The cable ladders are fastened to the brackets with cable ladder fasteners **KLTB 6** (2 pieces per bracket), please order separately.

Fittings must be supported in the immediate vicinity of the joints by an appropriate support structure.

The fastening

of the suspension construction is carried out with:

- building authority approved screw/dowel M 10 or M 12 (depending on the version)

The material requirement

of the suspension construction per suspension unit:

Designation	Model No.					
Overhead hanger or profile with head plate	HU 5050/... U 5050/... KU 5050, KUGH 5050 resp. KUGV 5050	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
Overhead hanger-and wall bracket	KTAS 200 - 400	1	2	2	3	4
Overhead hanger-distance profile	HDS 50.50 F	1	2	1	2	2
Cable ladder fastening	KLTB 6	2	4	4	6	8
Dowels for KL 60.215	M10	2	2	2	2	2
Dowels for KL 60.315 - KL 60.415	M12	2	2	2	2	2

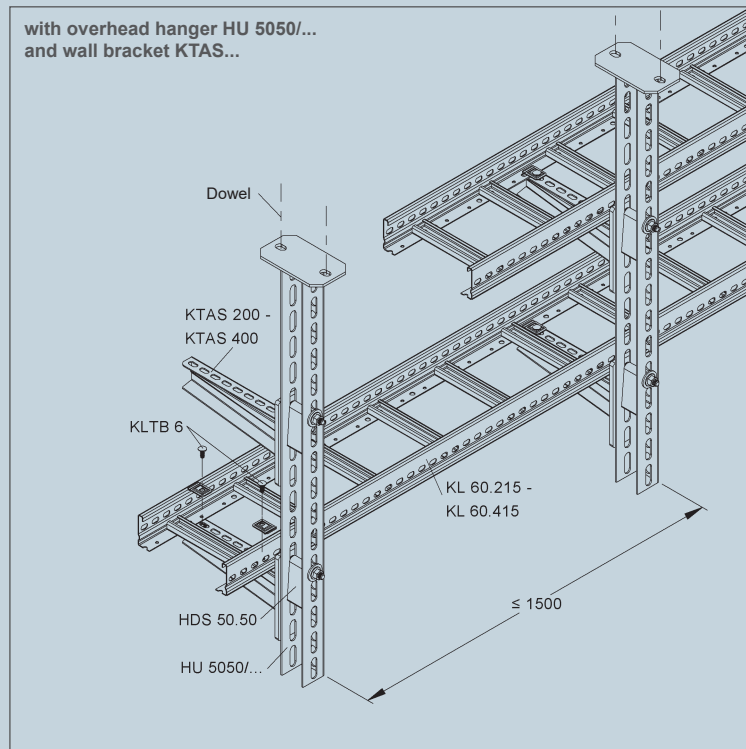
Other suspension variants on request!

Suitable dowels can be found in chapter “8 Fastening Elements”. ➔ 256

Ceiling mounting

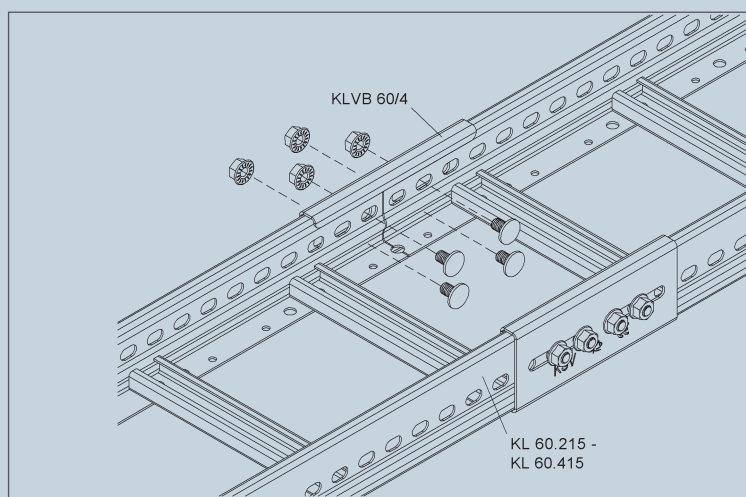


Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 20$ kg/m



Cable ladders with a rail height of 60 mm, in widths 200 to 400 mm with a rung spacing of 150 mm (KL 60.215 - KL 60.415) are used for ceiling installation. The cable ladders are fixed to the brackets with 2 cable ladder fastening KLTB 6.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



The connection of two cable ladders KL 60... is made via the cable ladder longitudinal splice plate KLV 60/4 with 4 mushroom-head bolts FLM 8X13 per splice plate.

Alternatively, the suspensions for this installation system can also be made with **HU 6040/...** overhead hanger, **U6040/...** U-profile, **KU 6040** head plate and **HDS 60.40** overhead hanger-distance profile (see products from ➡ 54).

The wall mounting

consists of:

Overhead hanger/wall brackets **KTAS 200 - 400**

Please order the screws for fastening the ladder to the brackets (2 KLTB 6 per bracket) separately.

The fastening

to the wall is carried out with:

screws/dowels M 10 approved by the building authorities

The material requirement

of the wall fastening per suspension unit:

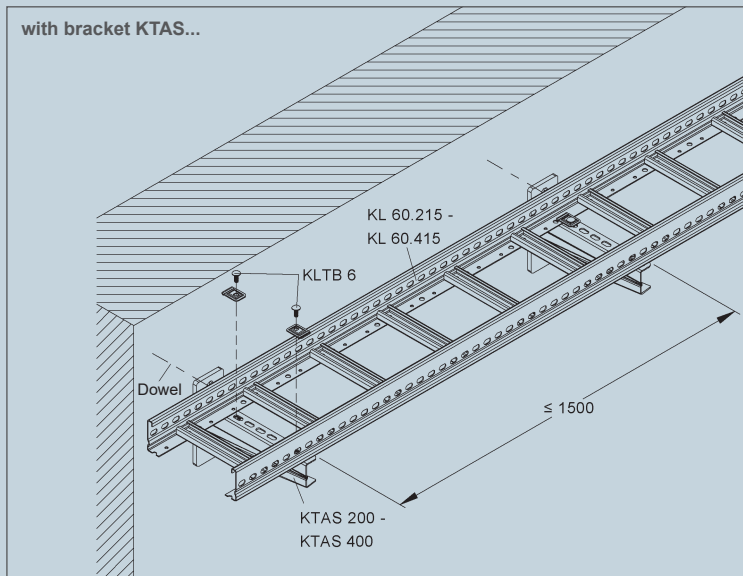
Designation	Model No.	
Overhead hanger- and wall bracket	KTAS 200 - 400	1
Cable ladder fastening	KLTB 6	2
Dowels for KL 60.215 - 415	M10	1

Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256

Wall mounting



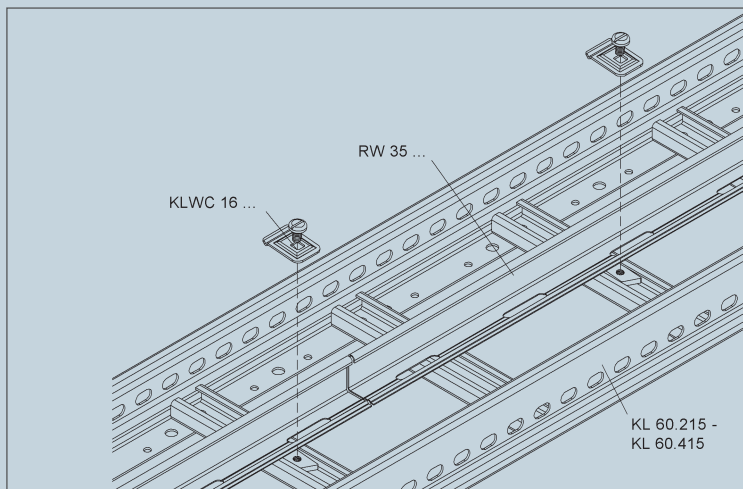
Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 20$ kg/m



Cable ladders with a side height of 60 mm, in widths 200 to 400 mm with a rung spacing of 150 mm (KL 60.215 - KL 60.415) are used for wall mounting. The cable ladders are fixed to the brackets with 2 cable ladder fastenings KLTB 6.

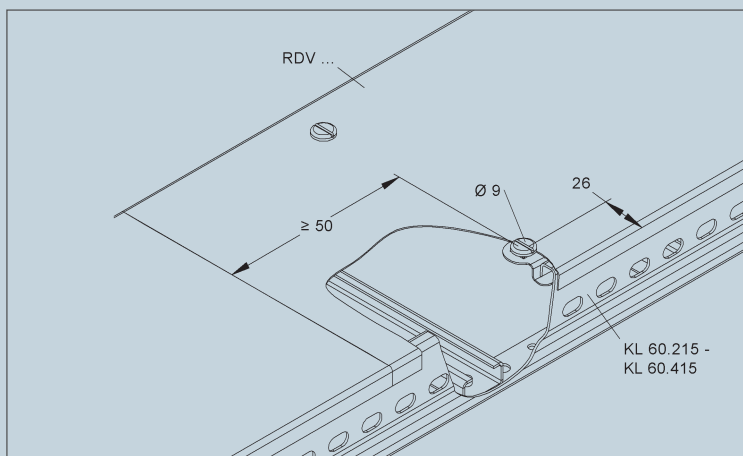
The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.

The connection of two cable ladders KL 60... is made via the cable ladder longitudinal splice plate KLVB 60/4 with 4 mushroom-head bolts FLM 8X13 per splice plate.



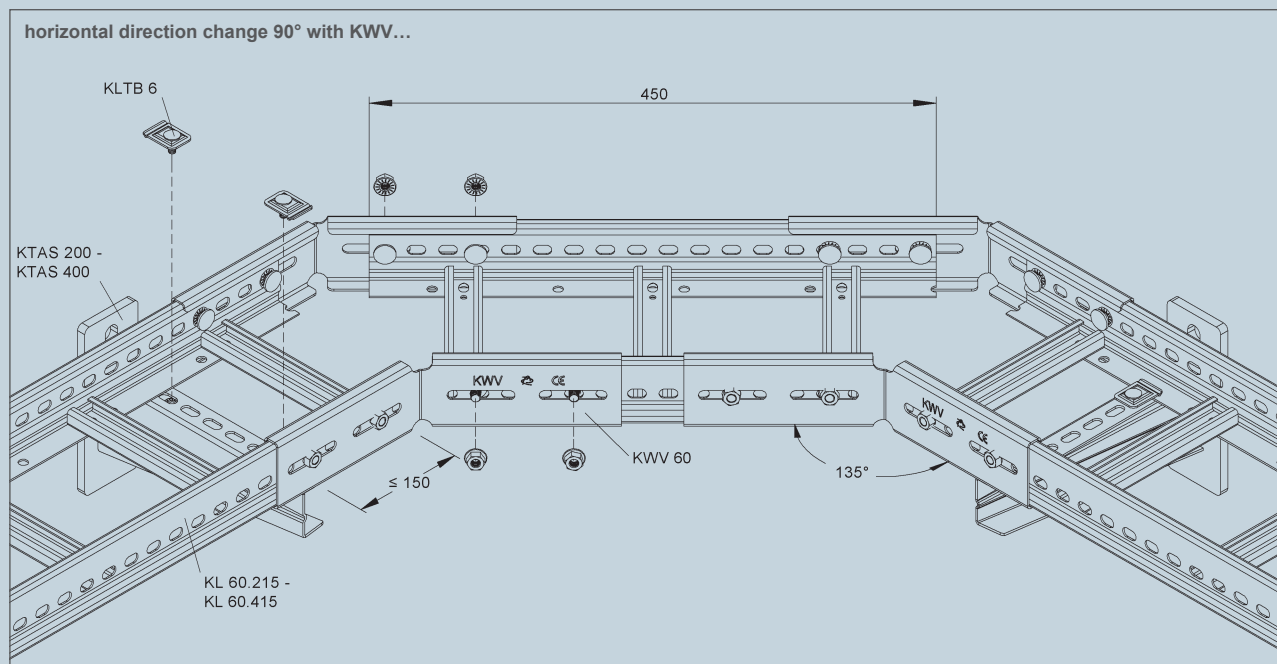
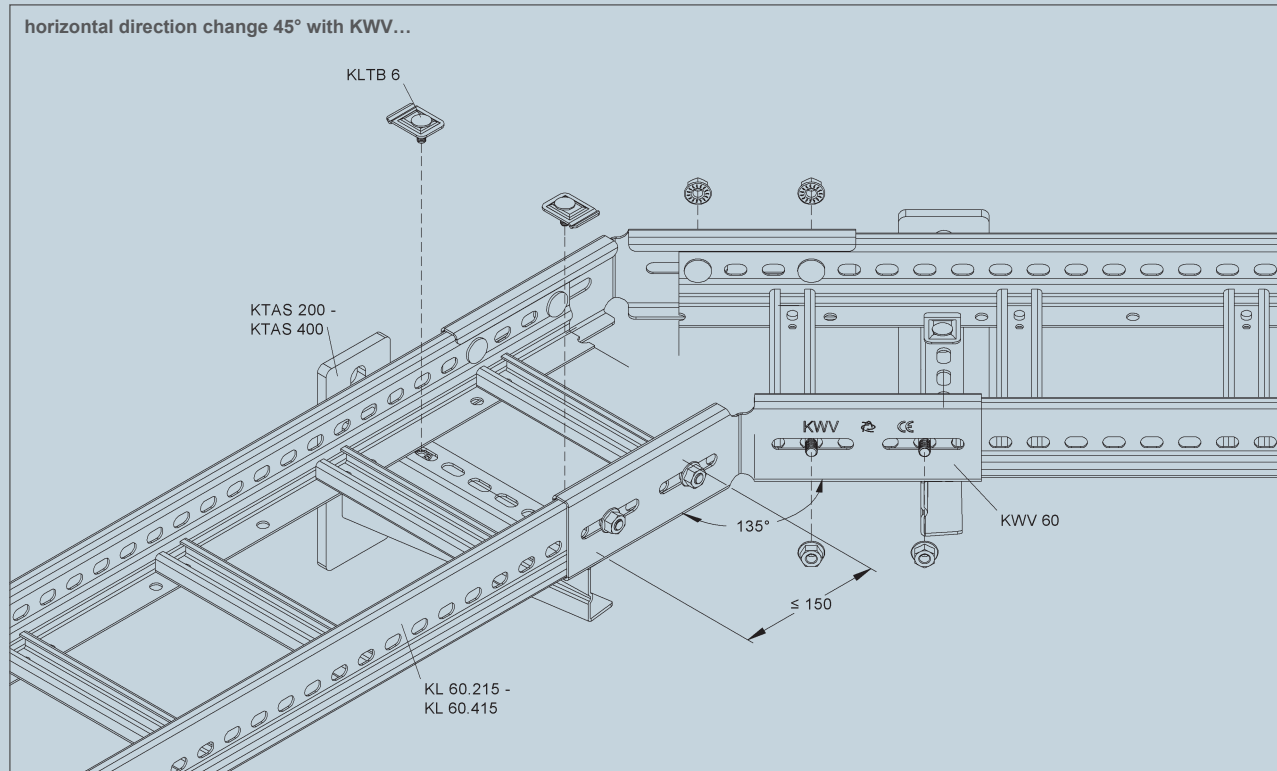
To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW... can be used. This is fastened in the rung using the KLWC 16 barrier strip fastening clamp.

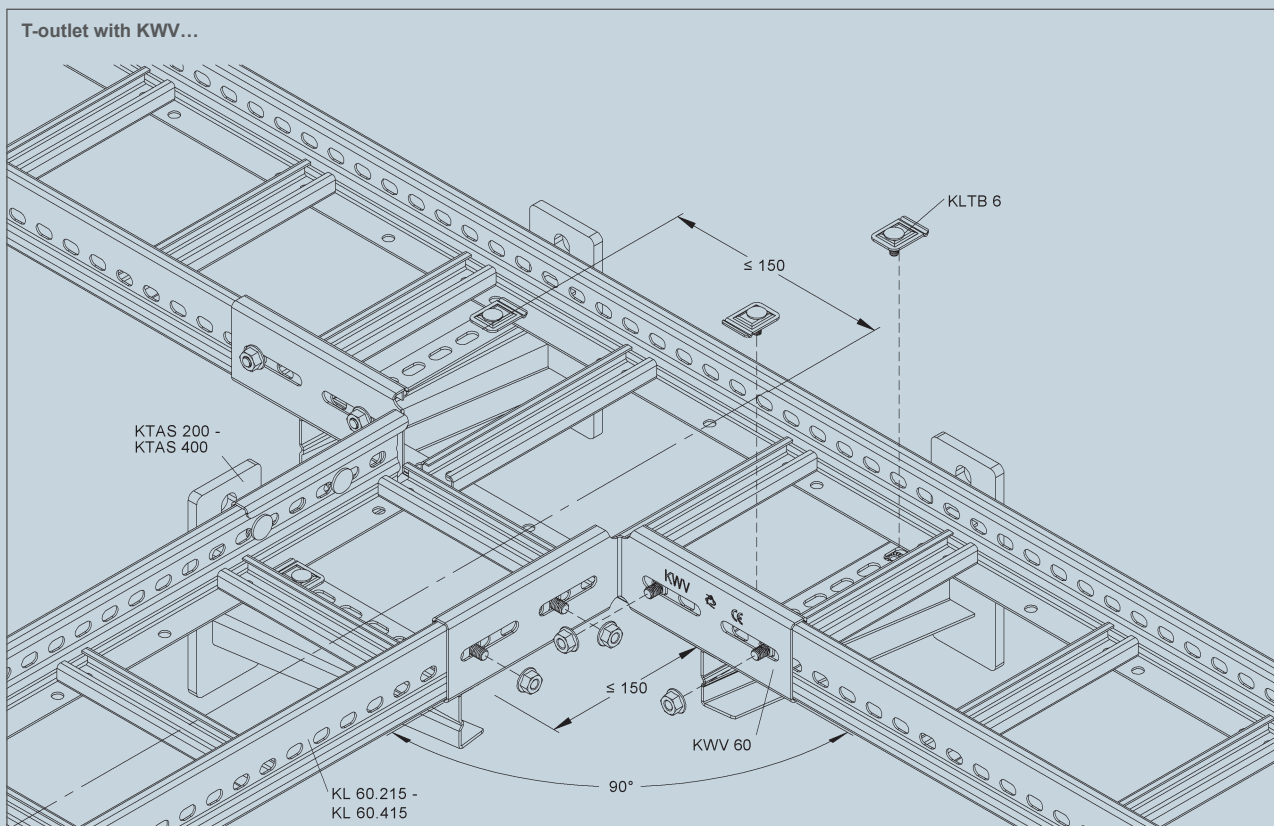
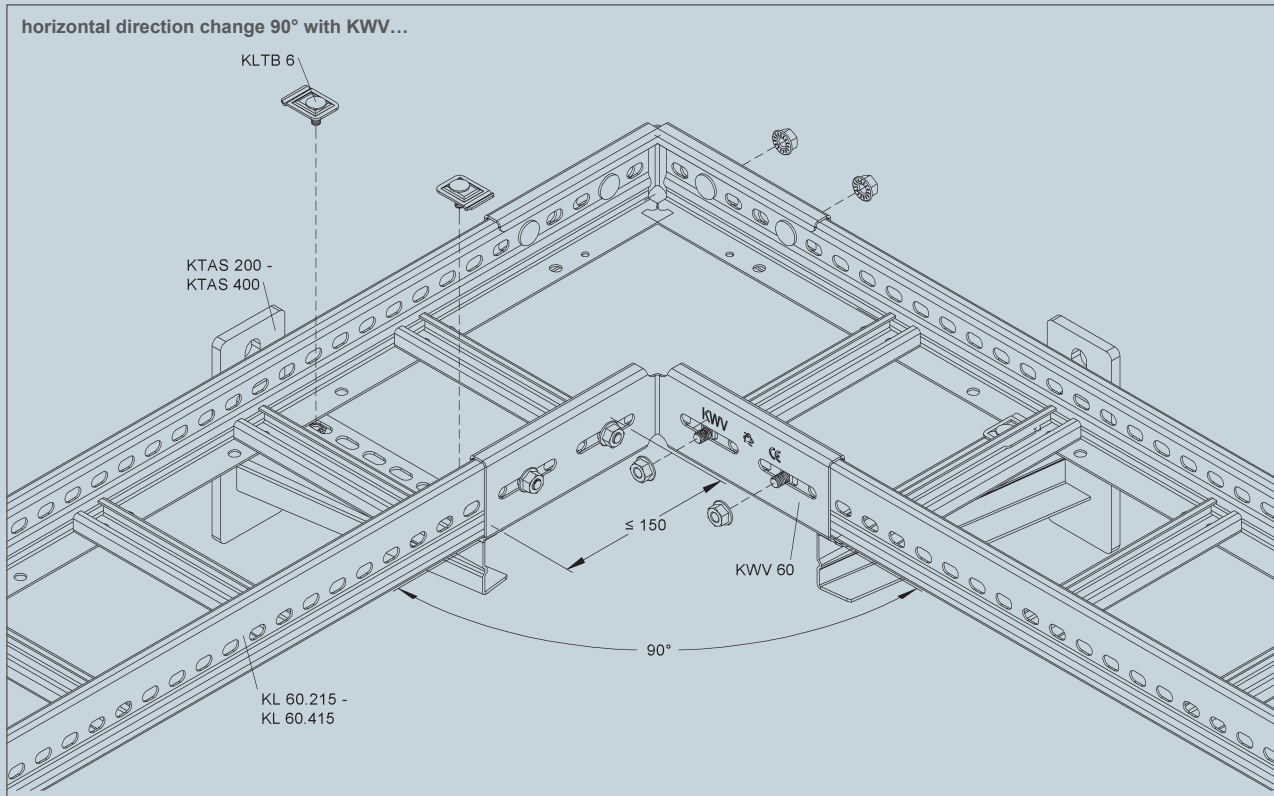
➡ 4



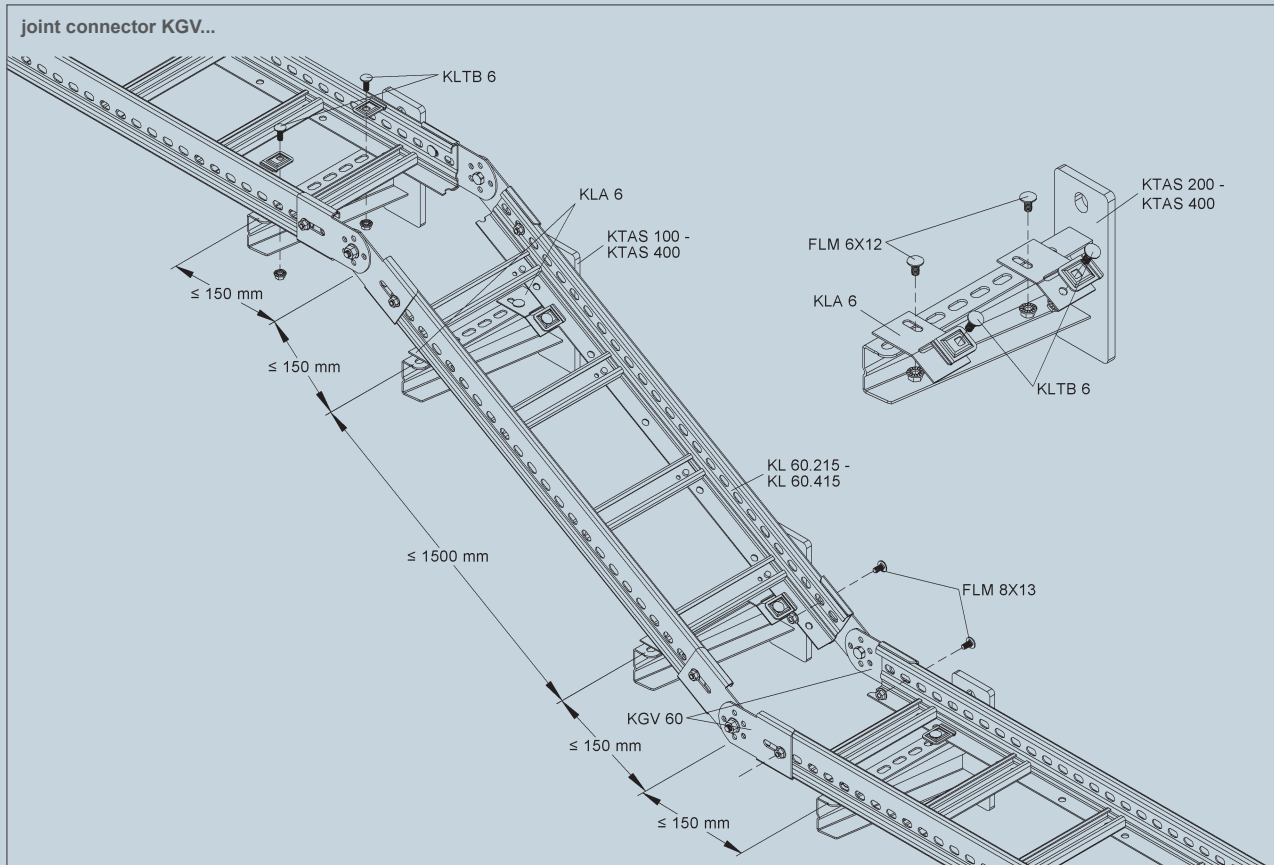
If RDV... covers are used, the max. permissible cable weight must be reduced by the weight of the cover.

Overhead hanger and wall mounting of fittings for KFO KL...





Overhead hanger and wall mounting of fittings for KFO KL...



Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Ceiling mounting Overhead hanger HU 5050/L & HU 6040/L B ≤ 400 mm q ≤ 20 kg/m a ≤ 1500 mm	Wall mounting Bracket KTAS... B ≤ 400 mm q ≤ 20 kg/m a ≤ 1500 mm
	Cable type		
Dätwyler AG Kabel + Systeme	Pyrofil Keram (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30
	Pyrofil Keram (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E60	E60
	Pyrofil Keram (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90
	Pyrofil Keram JE-H(St)H... Bd FE180 E30L n x 2 x 0,8 mm	E30	E30
	Pyrofil Keram JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30
Kabelwerk Eupen AG	Eucasafe (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90
	Eucasafe JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	E30	E30
Studer Cables AG	BETAflam (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30
	BETAflam (N)HXCH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30
	BETAflam JE-H(St)H... Bd FE180 E30 SIR n x 2 x 0,8 mm	E30	E30
	BETAflam JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30
	BETAflam JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.3 KFO Cable Ladder KL...

Cable Ladder

with rung spacing 150 mm and continuously perforated side profiles

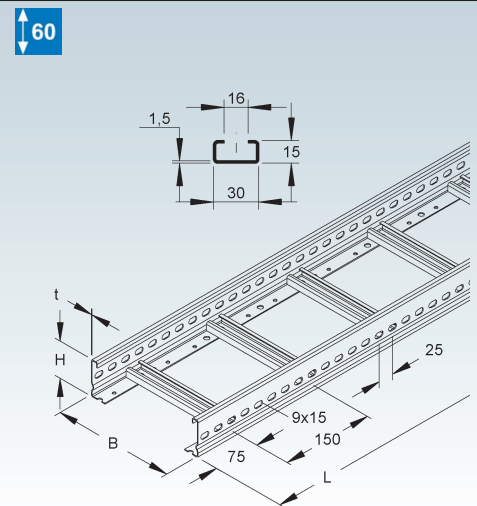
	Model No.	Height H	Width B	Length L	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm	mm			
S	KL 60.215	60	200	6000	1,5	346400	316,52	6 m
S	KL 60.315	60	300	6000	1,5	346509	366,83	6 m
S	KL 60.415	60	400	6000	1,5	346608	417,14	6 m
F	KL 60.215 F	60	200	6000	1,5	815302	349,00	6 m
F	KL 60.315 F	60	300	6000	1,5	815333	404,34	6 m
F	KL 60.415 F	60	400	6000	1,5	815364	459,69	6 m

Cable ladder length also available in 3 m (same price per meter).

Please order the necessary splice plates separately.

Requirement: 2 pieces KLV B 60/4 per joint

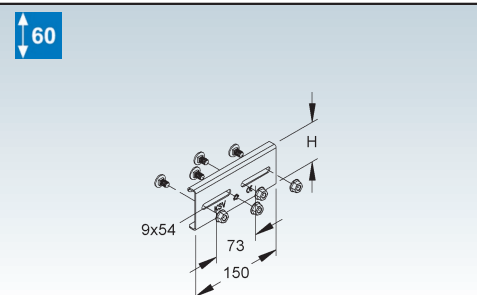
You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".



Splice Plate

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	KLV B 60/4 S	60	4 FLM 8X13 F	188123	25,64	20 pcs.
F	KLV B 60/4 F	60	4 FLM 8X13 F	346707	27,44	20 pcs.

Requirement: 2 pieces per joint

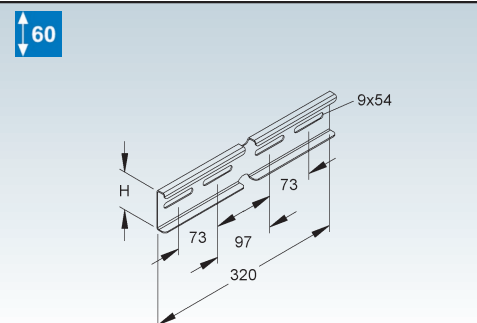


Angle Connector

	Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	KWV 60 S	60	320	4 FLM 8X13 F	290024	45,10	20 pcs.
F	KWV 60 F	60	320	4 FLM 8X13 F	290048	48,85	20 pcs.

for simple on-site production of horizontal changes of direction of any angle

Requirement: 2 pieces per joint

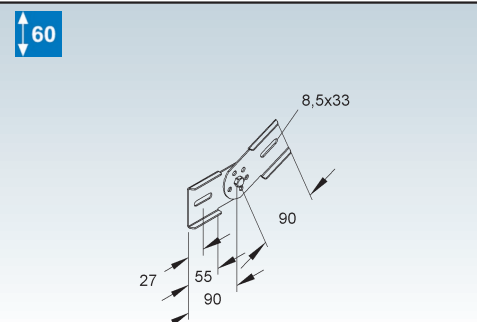


Joint Connector

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	KG V 60 S	60	2 FLM 8X13 F	289929	26,85	10 pcs.
F	KG V 60 F	60	2 FLM 8X13 F	289943	29,16	10 pcs.

for simple on-site creation of height offsets in horizontal cable systems

Requirement: 2 pieces per joint

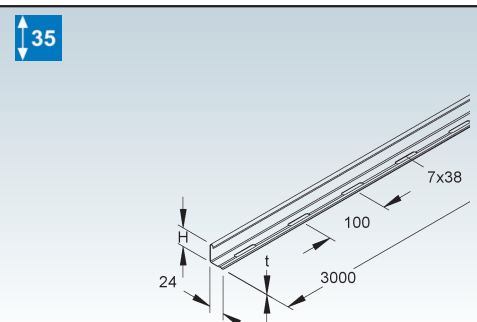


Barrier Strip

	Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm				
S	RW 35	30	0,75	4 FLM 6X12	213504	35,10	10 x 3 m
F	RW 35 F	30	0,75	4 FLM 6X12 F	213603	38,50	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.

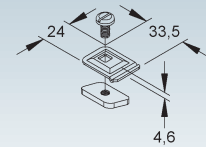


Barrier Strip Fastening Clamp

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S KLWC 16	1 FK 6X12 V, GSM 406 G	289707	2,64	50 pcs.
F KLWC 16 F	1 FK 6X10 E3, GSM 406 E3	570508	2,70	50 pcs.

for fastening barrier strips on cable ladders with rungs of 16 mm slot width

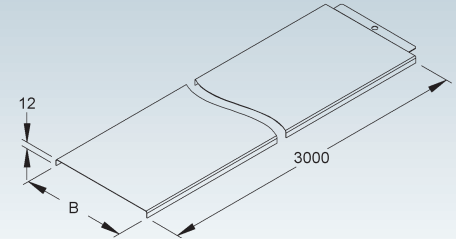
Insertable at any position in the profile slot.



Cover for Cable Tray/-Ladder

with joint strip

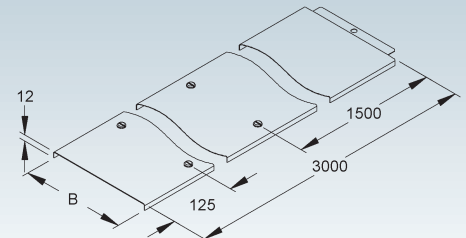
Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S RD 200	202	260508	132,51	2 x 3 m
S RD 300	302	260706	230,09	2 x 3 m
S RD 400	402	260805	334,64	2 x 3 m
F RD 200 F	202	262700	145,77	2 x 3 m
F RD 300 F	302	262908	253,10	2 x 3 m
F RD 400 F	402	263004	368,10	2 x 3 m



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S RDV 200	202	261604	133,44	2 x 3 m
S RDV 300	302	261802	231,02	2 x 3 m
S RDV 400	402	261901	335,56	2 x 3 m
F RDV 200 F	202	263806	146,79	2 x 3 m
F RDV 300 F	302	264001	254,13	2 x 3 m
F RDV 400 F	402	264100	369,12	2 x 3 m



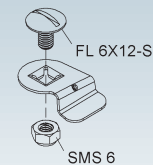
Turning Bolt

incl. locking nut acc. to DIN EN ISO 10511

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S RDRS 9	1 FL 6X12-S V, 1 SMS 6 V	269907	1,20	20 pcs.
F RDRS 9 F	1 FL 6X12-S E3, 1 SMS 6 E3	563463	1,60	20 pcs.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

Delivery unassembled loose



Overhead Hanger

U-profile

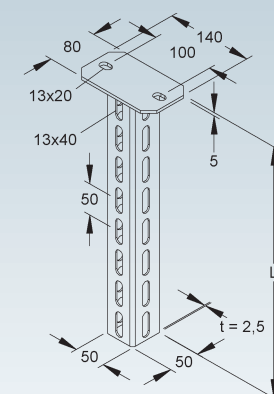
Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HU 5050/300	305	858743	117,38	1 pc.
F HU 5050/400	405	858767	141,67	1 pc.
F HU 5050/500	505	858781	165,97	1 pc.
F HU 5050/600	605	858804	190,27	1 pc.
F HU 5050/700	705	858828	214,57	1 pc.
F HU 5050/800	805	858842	238,87	1 pc.
F HU 5050/900	905	858866	263,16	1 pc.
F HU 5050/1000	1005	858880	287,46	1 pc.
F HU 5050/1100	1105	858903	311,76	1 pc.
F HU 5050/1200	1205	858927	336,06	1 pc.

Total length = U profile length, included fixing plate.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.3 KFO Cable Ladder KL...

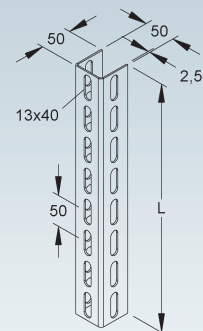
Profile U 5050

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
F U 5050/300 F	300	918560	72,90	1 pc.
F U 5050/400 F	400	918584	97,20	1 pc.
F U 5050/500 F	500	918607	121,50	1 pc.
F U 5050/600 F	600	918621	145,79	1 pc.
F U 5050/700 F	700	918645	170,09	1 pc.
F U 5050/800 F	800	918669	194,38	1 pc.
F U 5050/900 F	900	918683	218,68	1 pc.
F U 5050/1000 F	1000	918706	242,98	1 pc.
F U 5050/1100 F	1100	918720	267,28	1 pc.
F U 5050/1200 F	1200	918744	291,58	1 pc.

Serie of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.

Other lengths on request.

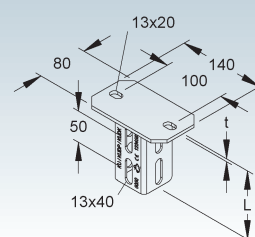


Screw Head Plate

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KU 5050	110	5	2 FLM 10X25 F	191956	86,33	1 pc.

for mounting on straight ceilings

Three-sided slotted hole arrangement 13x40 mm in the connecting profile.

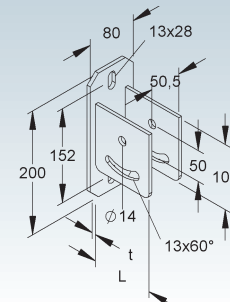


Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGH 5050	106	6	2 SKM 10X80 F	192229	171,12	1 pc.

for mounting on sloping walls

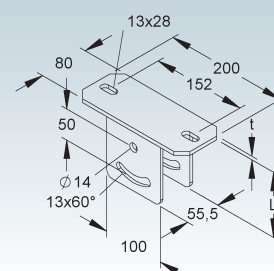


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

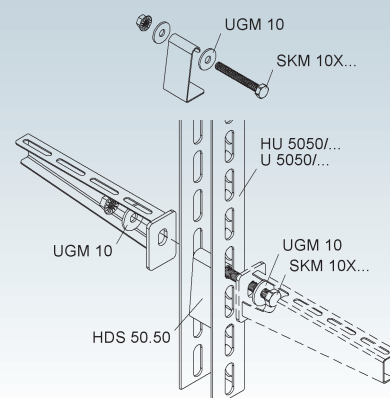
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGV 5050	111	6	2 SKM 10X80 F	192151	171,12	1 pc.

for mounting on sloping walls



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F HDS 50.50 F	1 SKM 10X80 F, 2 UGM 10 F	931705	16,52	50 pcs.



Overhead Hanger

U-profile

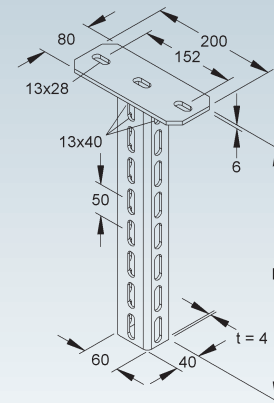
	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HU 6040/300	306	891474	177,08	1 pc.
F	HU 6040/400	406	891481	210,95	1 pc.
F	HU 6040/500	506	891498	244,82	1 pc.
F	HU 6040/600	606	891504	278,67	1 pc.
F	HU 6040/700	706	891511	312,54	1 pc.
F	HU 6040/800	806	891528	346,41	1 pc.
F	HU 6040/900	906	891535	380,28	1 pc.
F	HU 6040/1000	1006	891542	414,15	1 pc.
F	HU 6040/1100	1106	891559	448,02	1 pc.
F	HU 6040/1200	1206	891566	481,89	1 pc.

Total length = U profile length, included fixing plate.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

Other lengths on request.



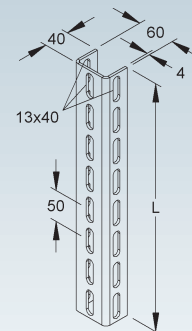
Profile U 6040

	Model No.	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	U 6040/300 F	300	891627	101,61	1 pc.
F	U 6040/400 F	400	891634	135,48	1 pc.
F	U 6040/500 F	500	891641	169,35	1 pc.
F	U 6040/600 F	600	891658	203,21	1 pc.
F	U 6040/700 F	700	891665	237,07	1 pc.
F	U 6040/800 F	800	891672	270,94	1 pc.
F	U 6040/900 F	900	891689	304,81	1 pc.
F	U 6040/1000 F	1000	891696	338,68	1 pc.
F	U 6040/1100 F	1100	891702	372,55	1 pc.
F	U 6040/1200 F	1200	891719	406,42	1 pc.

Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 F overhead hanger-distance profile must generally be used.

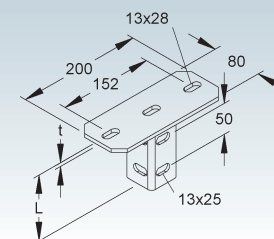
Other lengths on request.



Screw Head Plate

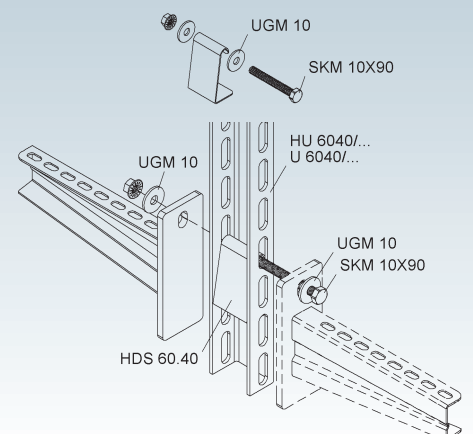
	Model No.	Total length L mm	Thickness of head plates (t) mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KU 6040	106	6	2 FLM 10X25 F	891771	118,01	1 pc.

for mounting on straight ceilings



Overhead Hanger-Distance Profile

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HDS 60.40 F	1 SKM 10X90 F, 2 UGM 10 F	931729	18,59	50 pcs.



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

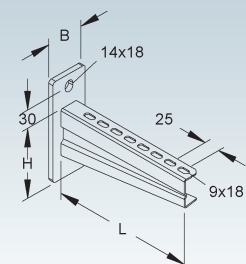
1.3 KFO Cable Ladder KL...

Overhead Hanger- and Wall Bracket

heavy

	Model No.	Height H mm	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KTAS 100	113	130	917457	89,95	1 pc.
F	KTAS 200	113	230	188406	108,46	1 pc.
F	KTAS 300	113	330	188505	130,76	1 pc.
F	KTAS 400	113	430	188604	155,40	1 pc.

Please order the necessary fastening accessories separately for cable ladders.
Requirement: 2 pieces KLTB 6 per bracket

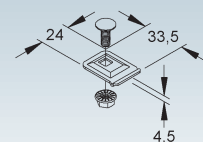


Cable Ladder Fastening

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	KLTB 6	1 FLM 6X16 F	282708	2,13	50 pcs.
F	KLTB 6 F	1 FLM 6X16 F	282722	2,22	50 pcs.

Clamping piece for fastening the cable ladders on brackets

Requirement: 2 pieces per bracket



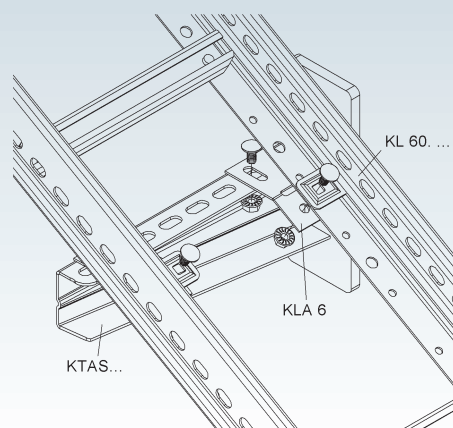
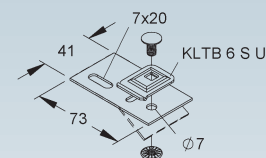
Cable Tray Fastening

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	KLA 6	1 FLM 6X12, 1 KLTB 6 S U	287901	4,95	25 pcs.

for fastening cable ladders running at an angle to the bracket

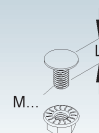
Requirement: 2 pieces per bracket

By bending the fastening tongue by hand, the cable tray fastening is adapted to the gradient angle.



Mushroom-Head Bolt, similar to DIN 603

	Model No.	Thread M	Length L mm	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	FLM 8X13 F	8	13	8.8	206605	2,00	10 pcs.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

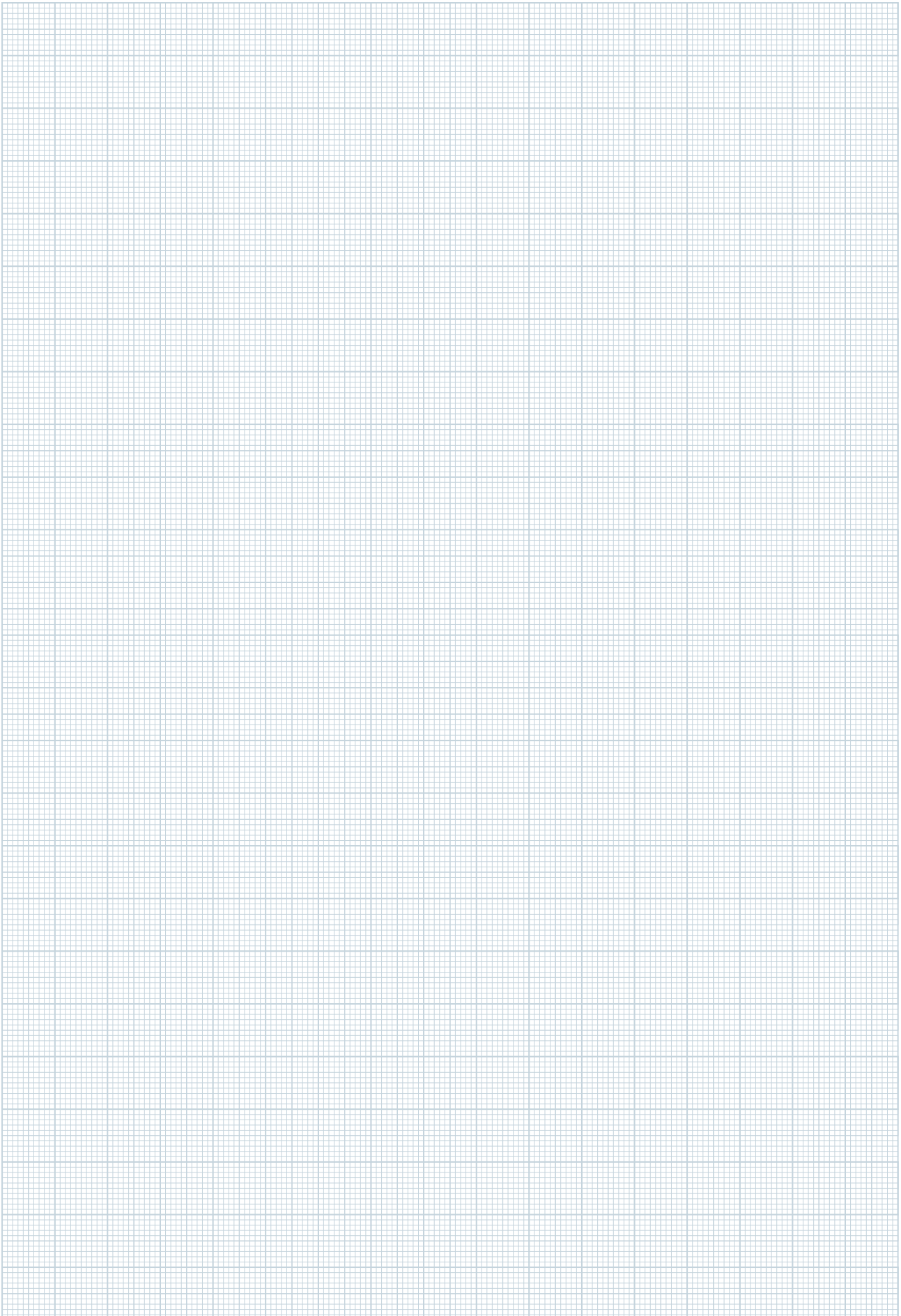
	Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
	HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

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Kabelanlage E gemäß DIN 4102-12		
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		



NOTES





1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.4 Collective Holder SHS...

The installation system collective holder has been partially approved without restriction of the cable cross-section for cable types (N)HXH, (N)HXCH and JE-(St)H... in E30 and E90 according to DIN 4102-12. They are characterised by practice-oriented fastening spacings $\leq 0.5 / 0.6 / 0.8$ m and loads $\leq 3 / 6$ kg/m.

The large opening allows easy insertion of cables without threading. Once the cable has been fully inserted, simply

close the cap. Rewiring is possible at any time. In addition, they are suitable for installation above suspended false ceilings in accordance with the Model Cable System Directive (MLAR) (for fastening spacings and loads, see the fire protection assessments).

See chapter "4 MLAR - Installation Systems" in this catalogue. ➔ 208

Support span $a \leq 0,5/0,6/0,8$ m

Cable load $q \leq 3$ resp. 6 kg/m

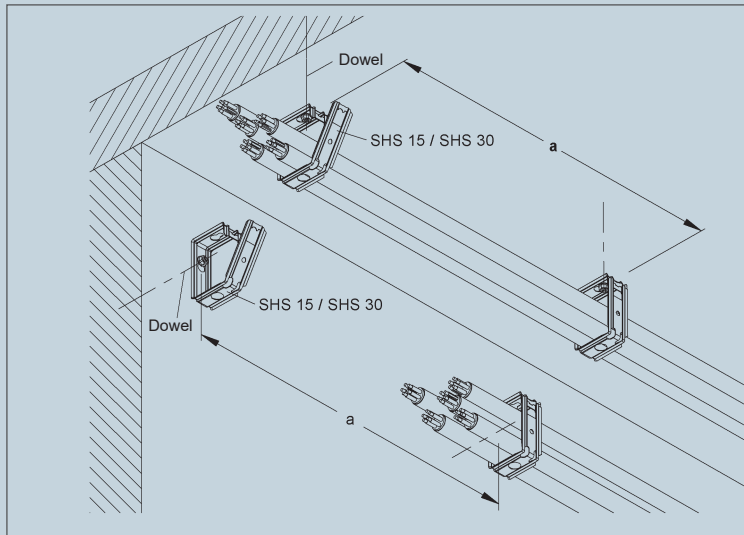
With this cable routing system for horizontal cable routing on walls and ceilings in accordance with DIN 4102 Part 12 for circuit integrity maintenance classes E30 to E90, SHS... collective holders are available in 3 sizes.

Depending on the quantity of cable to be laid, the SHS 15 and SHS 30 collective holders can be used for a fastening spacing of $a \leq 600$ mm and a cable dead weight of $q \leq 3$ kg/m or the SHS 80 collective holder for a fastening spacing of $a \leq 800$ mm and a cable dead weight of $q \leq 6$ kg/m.

The SHS... cable collective holders have keyholes for fastening to the wall or ceiling, which eliminates the need to remove the pre-assembled nut and washer from the fastener.

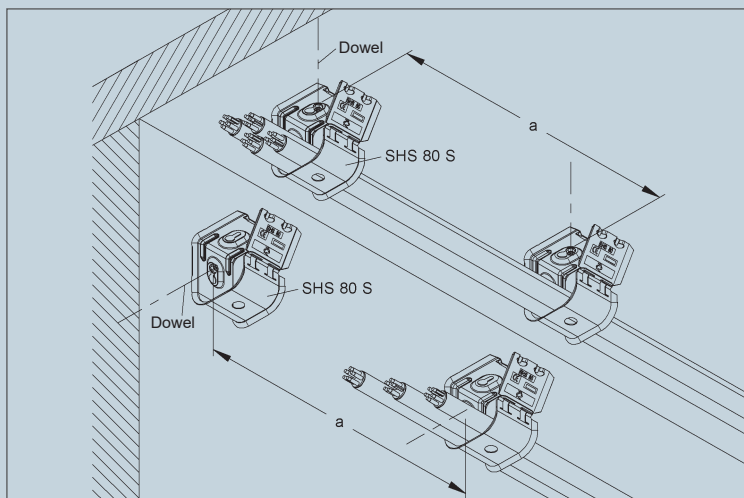
The mounting of the collective holders is done with suitable and tested fasteners $\geq M6$.

Ceiling and wall mounting



SHS 15 and SHS 30

Fastening spacing $a \leq 500 / 600$ mm;
Cable load $q \leq 3$ kg/m
see classification table on
the following page.



SHS 80 S

Fastening spacing $a \leq 600 / 800$ mm;
Cable load $q \leq 6$ kg/m
see classification table on
the following page.

The SHS... collective holders are fastened to the building ground with approved dowels $\geq M 6$ (see chapter "8 Fastening Elements" ➔ 256)

Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Collective holder SHS 15 und SHS 30		Collective holder SHS 80	
	Cable type	Ceiling mounting $q \leq 3 \text{ kg/m}$ $a \leq 600 \text{ mm}$	Wall mounting $q \leq 3 \text{ kg/m}$ $a \leq 600 \text{ mm}$	Ceiling mounting $q \leq 6 \text{ kg/m}$	Wall mounting $q \leq 6 \text{ kg/m}$
Dätwyler AG Kabel + Systeme	Pyrofil Keramik (N)HXH... E30 $n \times \geq 1,5 \text{ mm}^2$	E30 $n \times \leq 16 \text{ mm}^2$	E60 $n \times \leq 16 \text{ mm}^2$	E30 $a \leq 800 \text{ mm}$	-
	Pyrofil Keramik (N)HXCH... E30 $n \times \geq 1,5/1,5 \text{ mm}^2$	E60 $n \times \leq 16/16 \text{ mm}^2$	E30 $n \times \leq 16/16 \text{ mm}^2$	E60 $a \leq 800 \text{ mm}$	E30 $a \leq 800 \text{ mm}$
	Pyrofil Keramik (N)HXH... E90 $n \times \geq 1,5 \text{ mm}^2$	-	-	E90 $a \leq 600 \text{ mm}$	-
	Pyrofil Keramik (N)HXCH... E90 $n \times \geq 1,5/1,5 \text{ mm}^2$	E90 $a \leq 500 \text{ mm}$ $n \times \leq 16/16 \text{ mm}^2$	E90 $n \times \leq 16/16 \text{ mm}^2$	E90 $a \leq 600 \text{ mm}$	-
	Pyrofil JE-H(St)H... Bd E30L $n \times 2 \times 0,8 \text{ mm}$	E60	E30	E60 $a \leq 600 \text{ mm}$	-
	Pyrofil JE-H(St)H... Bd E30 - E90 $n \times 2 \times 0,8 \text{ mm}$	E30	E30	E60 $a \leq 600 \text{ mm}$	E60 $a \leq 600 \text{ mm}$
	Pyrofil JE-H(St)HRH... Bd E30 - E90 $n \times 2 \times 0,8 \text{ mm}$	E30	E30	-	-
Kabelwerk Eupen AG	Eucasafe (N)HXH... E30 $n \times \geq 1,5 \text{ mm}^2$	E60 $n \times \leq 16 \text{ mm}^2$	E30 $n \times \leq 16 \text{ mm}^2$	-	E30 $a \leq 800 \text{ mm}$
	Eucasafe (N)HXCH... E30 $n \times \geq 1,5/1,5 \text{ mm}^2$	E30 $n \times \leq 16/16 \text{ mm}^2$	E30 $n \times \leq 16/16 \text{ mm}^2$	E30 $a \leq 800 \text{ mm}$	E30 $a \leq 600 \text{ mm}$
	Eucasafe (N)HXH... E90 $n \times \geq 1,5 \text{ mm}^2$	-	-	-	-
	Eucasafe (N)HXCH... E90 $n \times \geq 1,5/1,5 \text{ mm}^2$	E90 $n \times \leq 16/16 \text{ mm}^2$	E90 $n \times \leq 16/16 \text{ mm}^2$	E90 $a \leq 600 \text{ mm}$	-
	Eucasafe JE-H(St)H... Bd E30 $n \times 2 \times 0,8 \text{ mm}$	E30	E60	E30 $a \leq 800 \text{ mm}$	E30 $a \leq 800 \text{ mm}$
	Eucasafe JE-H(St)H... Bd E90 $n \times 2 \times 0,8 \text{ mm}$	-	E90	E90 $a \leq 600 \text{ mm}$	E90 $a \leq 600 \text{ mm}$
Studer Cables AG	BETAflam (N)HXH... E30 $n \times \geq 1,5 \text{ mm}^2$	E30 $n \times \leq 16 \text{ mm}^2$	E30 $n \times \leq 16 \text{ mm}^2$	-	-
	BETAflam (N)HXCH... E30 $n \times \geq 1,5/1,5 \text{ mm}^2$	E30 $n \times \leq 16/16 \text{ mm}^2$	E60 $n \times \leq 16/16 \text{ mm}^2$	E30 $a \leq 800 \text{ mm}$	E30 $a \leq 800 \text{ mm}$
	BETAflam (N)HXH... E90 $n \times \geq 1,5 \text{ mm}^2$	-	-	-	-
	BETAflam (N)HXCH... E90 $n \times \geq 1,5/1,5 \text{ mm}^2$	E90 $a \leq 500 \text{ mm}$ $n \times \leq 16/16 \text{ mm}^2$	E90 $a \leq 500 \text{ mm}$ $n \times \leq 16/16 \text{ mm}^2$	-	E90 $a \leq 600 \text{ mm}$
	BETAflam JE-H(St)H... Bd E30 $n \times 2 \times 0,8 \text{ mm}$	E60	E30	E60 $a \leq 600 \text{ mm}$	E90 $a \leq 600 \text{ mm}$
	BETAflam JE-H(St)H... Bd E30 - E90 $n \times 2 \times 0,8 \text{ mm}$	E90	E90	E60 $a \leq 600 \text{ mm}$	E60 $a \leq 600 \text{ mm}$
	BETAflam JE-H(St)HRH... Bd E30 - E90 $n \times 2 \times 0,8 \text{ mm}$	E90	E60	-	-

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

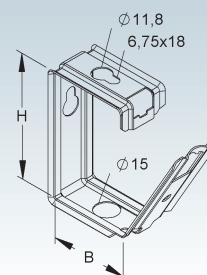
1.4 Collective Holder SHS...

Cable Bundler

Model No.	Inside height H mm	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S SHS 15	56	34	837908	3,44	50 pcs.
S SHS 30	81	50	837953	5,19	25 pcs.

for laying cable bundles on wall and ceiling

High mechanical strength

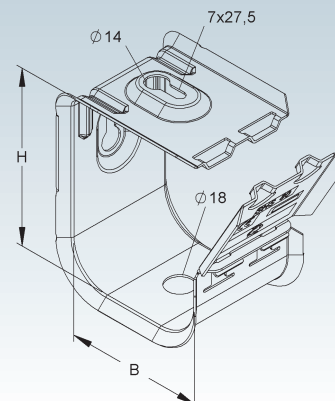


Cable Bundler

Model No.	Inside height H mm	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S SHS 80 S	114,5	90	092772	32,58	10 pcs.

for laying cable bundles on wall and ceiling

High mechanical strength



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

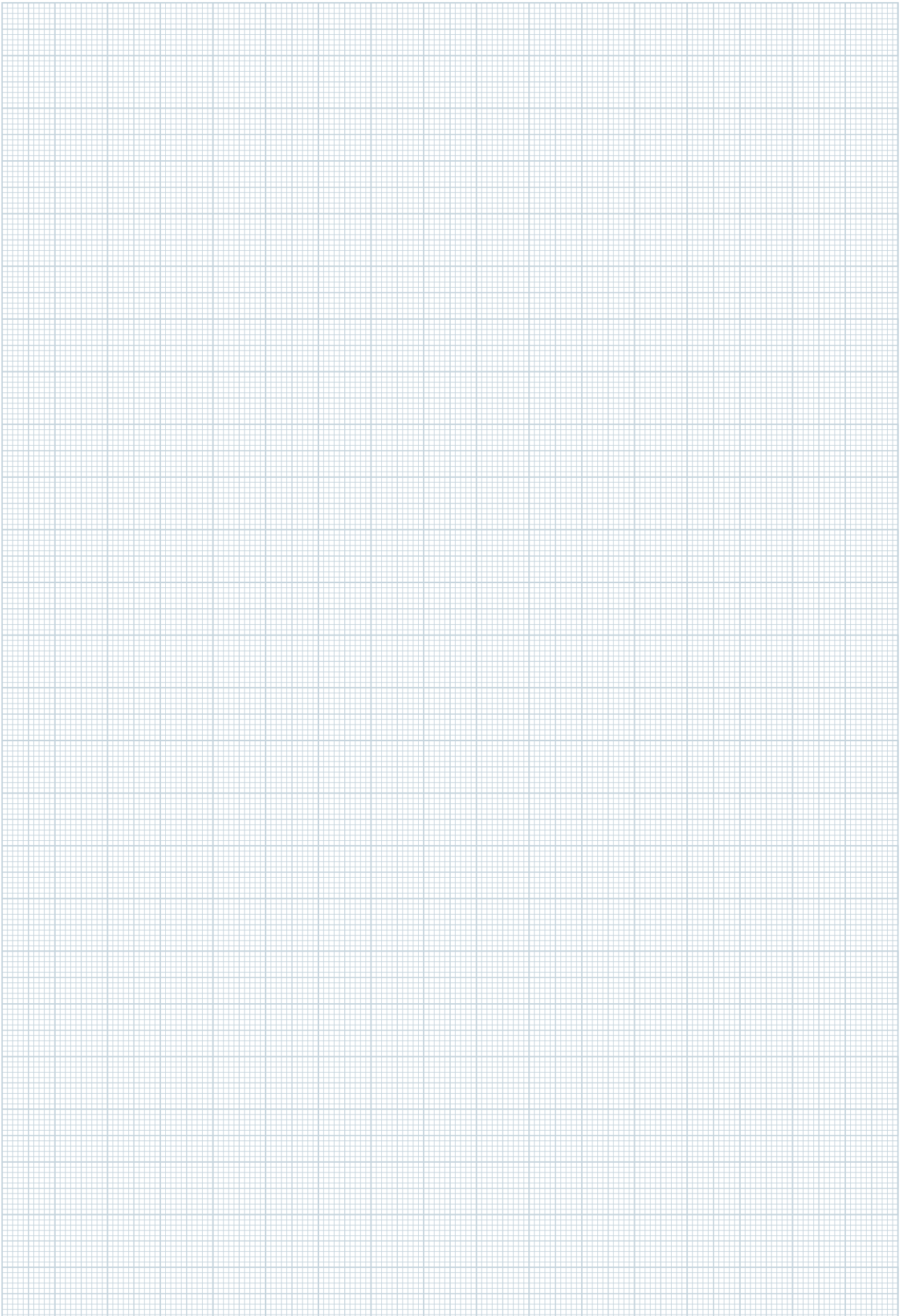
NIEDAX GROUP Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein Tel: +49 (0) 2644/5606-0 www.niedax.com		ACHTUNG! Trasse nur für elektrischen Funktionserhalt
Kabelanlage E _____ gemäß DIN 4102-12		
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		

Suitable dowels can be found in chapter "8 Fastening Elements".

➔ 256



NOTES



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.5 Cable Protection Duct LLK...



1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.5 Cable Protection Duct LLK...

The installation system for cable protection duct LLK... for circuit integrity maintenance in E30 and E90 in accordance with DIN 4102-12 is a rational way of discreetly

embedding what is required by building regulations in the interior design environment.

Fastening spacing $a \leq 0,5 \text{ m}$
Cable load $q \leq 0,3 \text{ resp. } 3 \text{ kg/m}$

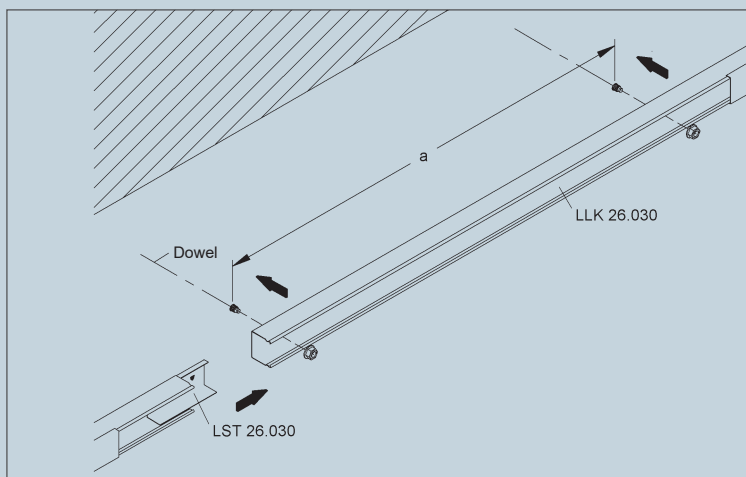
With this cable routing system for horizontal cable laying on walls and ceilings in accordance with DIN 4102 Part 12 for circuit integrity maintenance classes E30 to E90, cable protection ducts are available in 2 sizes. Depending on the amount of cable to be laid, the cable protection duct LLK 26.030 can be used with a fastening spacing of $a \leq 500 \text{ mm}$ and a cable dead weight of $q \leq 0.3 \text{ kg/m}$ or the cable protection duct LLK 60.100 with a fastening spacing of $a \leq 500 \text{ mm}$ and a cable dead weight of $q \leq 0.3 \text{ kg/m}$.

For cable retention in the cable protection duct LLK 60.100, cable support clamp LHS 60.100 are available, which are mounted offset from each other at a distance of 500 mm.

The continuous electrical conductivity can be ensured with the system-related accessories LST 26.030 or LST 60.

The cable protection ducts are fastened with suitable and tested fasteners $\geq \text{M6}$.

Wall and ceiling mounting LLK 26.030



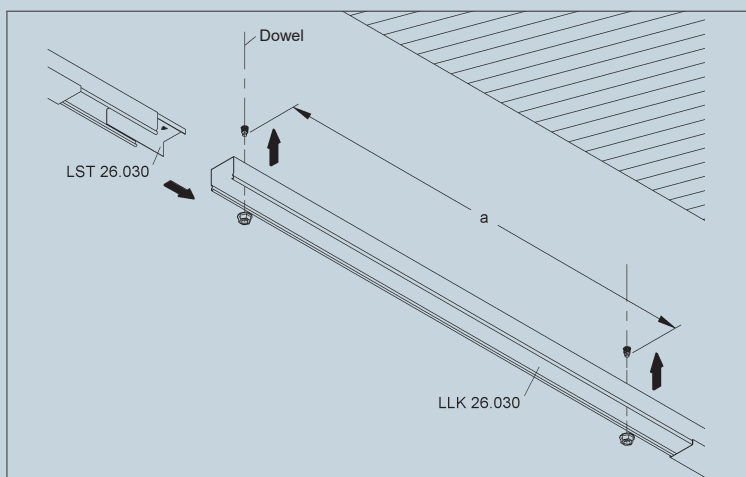
Wall mounting

cable protection duct LLK 26.030

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq$ M6 per 500 mm

Dead weight of cable: $q \leq 0.3$ kg/m



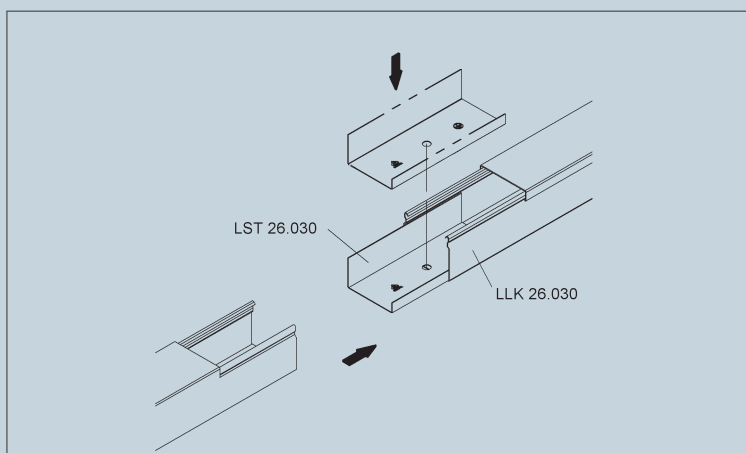
Wall mounting

cable protection duct LLK 26.030

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq$ M6 per 500 mm

Dead weight of cable: $q \leq 0.3$ kg/m



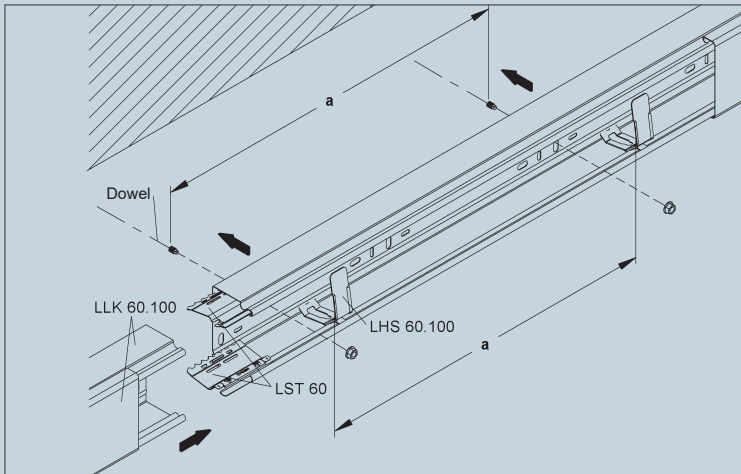
Installation

splice plate LST 26.030

The cable protection duct must be included in the equipotential bonding. The electrical and mechanical connection is made via the splice plate LST 26.030 and by snapping on the cover.

The cable protection ducts LLK... are fastened to the ground with approved dowels $\geq$ M 6 (see chapter "8 Fastening Elements" ➔ 256).

Wall and ceiling mounting LLK 60.100



Wall mounting

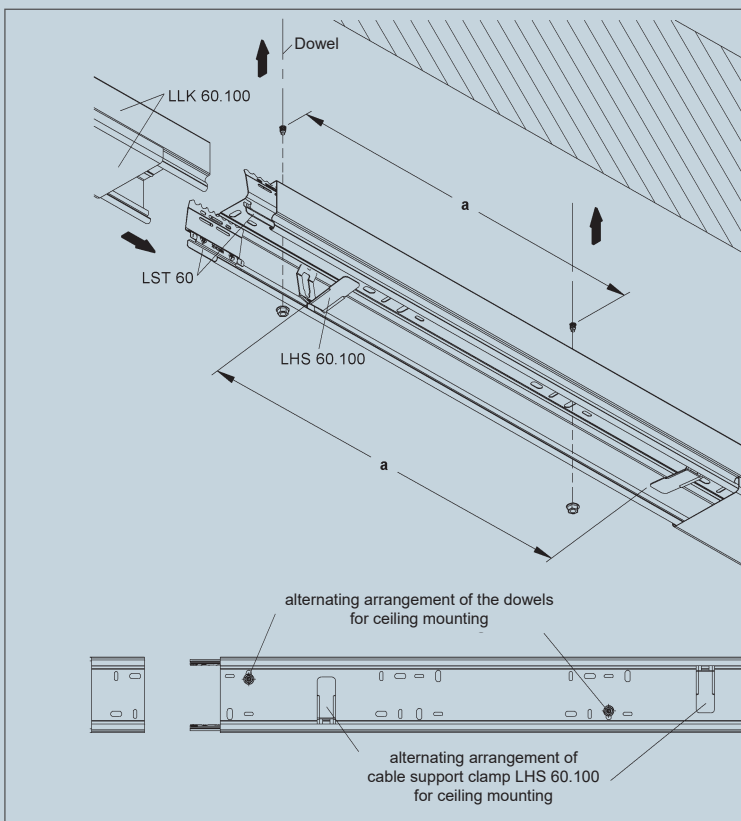
cable protection duct LLK 60.100

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq M6$ per 500 mm

Dead weight of cable: $q \leq 3$ kg/m

Cable support clamp: 1 piece per 500 mm according to illustration



Ceiling mounting

cable protection duct LLK 60.100

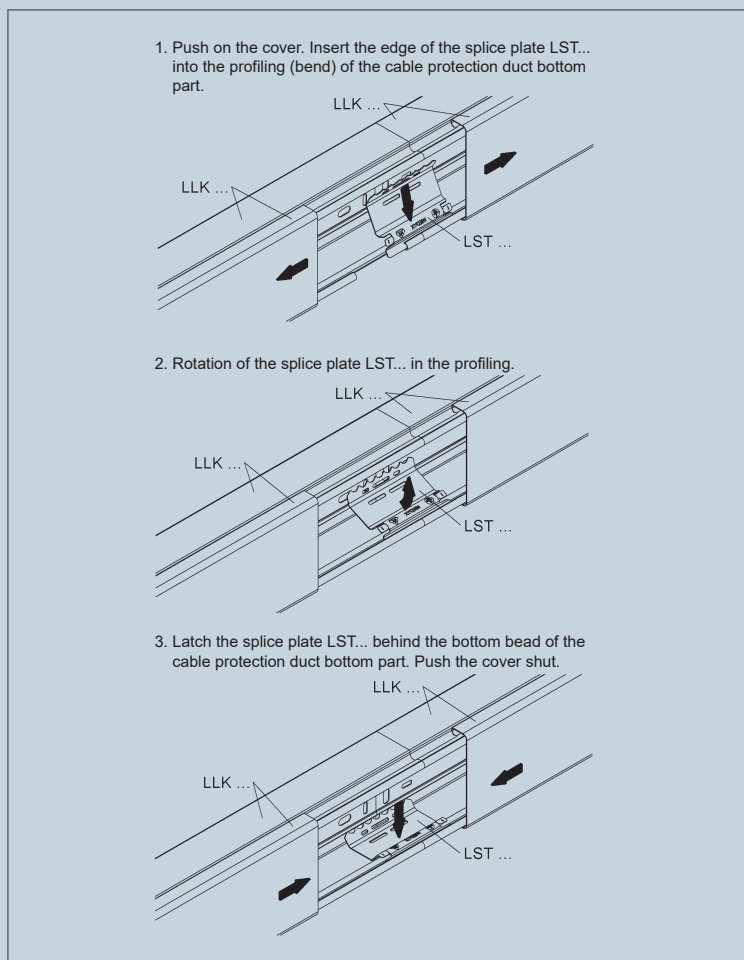
Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq M6$ per 500 mm alternately according to illustration

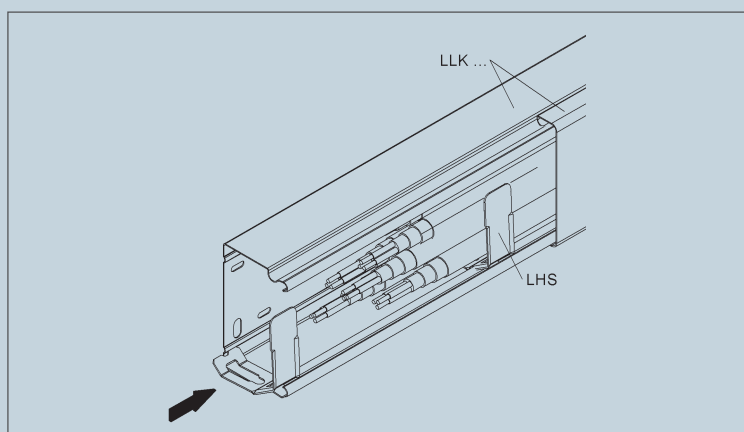
Dead weight of cable: $q \leq 3$ kg/m

Cable support clamp: 1 piece per 500 mm alternately against each other according to illustration

The cable protection ducts LLK... are fastened to the ground with approved dowels $\geq M6$ (see chapter "8 Fastening Elements" ➔ 256).



**Installation
splice plate LST...**



**Use of the
cable support clamp LHS...**

Clamping function of the cable support clamp LHS... by the bottom bead 1 m cable protection duct bottom part and by the profiling 2 of the cable protection duct bottom part for holding the cover.

The cable protection ducts LLK... are fastened to the ground with approved dowels $\geq M 6$ (see chapter "8 Fastening Elements" ➔ 256).

Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type Cable type	Cable protection duct LLK 26.030		Cable protection duct LLK 60.100	
		Ceiling mounting $q \leq 0,3 \text{ kg/m}$ $a \leq 500 \text{ mm}$	Wall mounting $q \leq 0,3 \text{ kg/m}$ $a \leq 500 \text{ mm}$	Ceiling mounting $q \leq 3 \text{ kg/m}$ $a \leq 500 \text{ mm}$	Wall mounting $q \leq 3 \text{ kg/m}$ $a \leq 500 \text{ mm}$
Kabelwerk Eupen AG	Eucasafe (N)HXH... E30 $n \times 16 \text{ mm}^2$	-	-	E30 $x \leq 16 \text{ mm}^2$	E30 $x \leq 16 \text{ mm}^2$
	Eucasafe (N)HXCH... E30 $n \times \geq 1,5/1,5 \text{ mm}^2$	-	-	-	-
	Eucasafe (N)HXH... E90 $n \times \geq 1,5 \text{ mm}^2$	-	-	-	-
	Eucasafe (N)HXCH... E90 $n \times \geq 1,5/1,5 \text{ mm}^2$	-	-	-	-
	Eucasafe JE-H(St)H... Bd E30 $n \times 2 \times 0,8 \text{ mm}$	E30	E30	E30	E30
	Eucasafe JE-H(St)H... Bd E90 $n \times 2 \times 0,8 \text{ mm}$	E90	E90	E90	-

1 CABLE-SPECIFIC INSTALLATION SYSTEMS

1.5 Cable Protection Duct LLK...

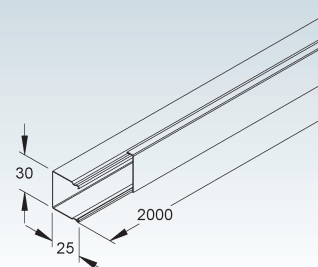
Mini-Cable Protection Duct

with perforated bottom, incl. cover

Model No.	RAL colour	Height H	Width B	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm			
S LLK 26.030	—	26	30	506903	50,02	18 x 2 m

Please order the necessary splice plates separately.
Requirement: 1 piece LST 26.030 per joint

26

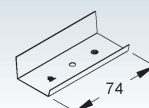


Splice Plate

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
MS LST 26.030	74	516407	1,30	20 pcs.

connects the trunking bases electrically and mechanically in one operation

26



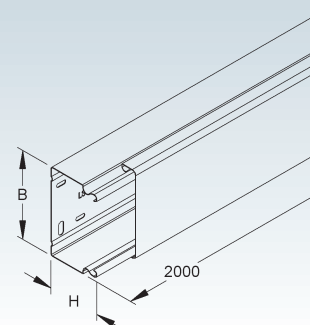
Cable Protection Duct

with perforated bottom, incl. cover

Model No.	RAL colour	Height H	Width B	Centered hole distance A	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm			
S LLK 60.100	—	60	100	50	509201	235,04	4 x 2 m

Please order the necessary splice plates separately.
Requirement: 2 pieces LST 60 per joint

60



Splice Plate

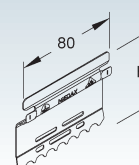
with flat plug 6,3 mm

Model No.	Height H	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
S LST 60	60	516605	2,71	20 pcs.

connects the trunking bases electrically and mechanically in one operation

Requirement: 2 pieces per joint

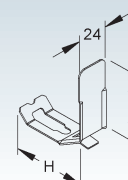
60



Cable Support Clamp

Model No.	Height H	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
E2 LHS 60.100 E2	60	517206	2,03	20 pcs.

60



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

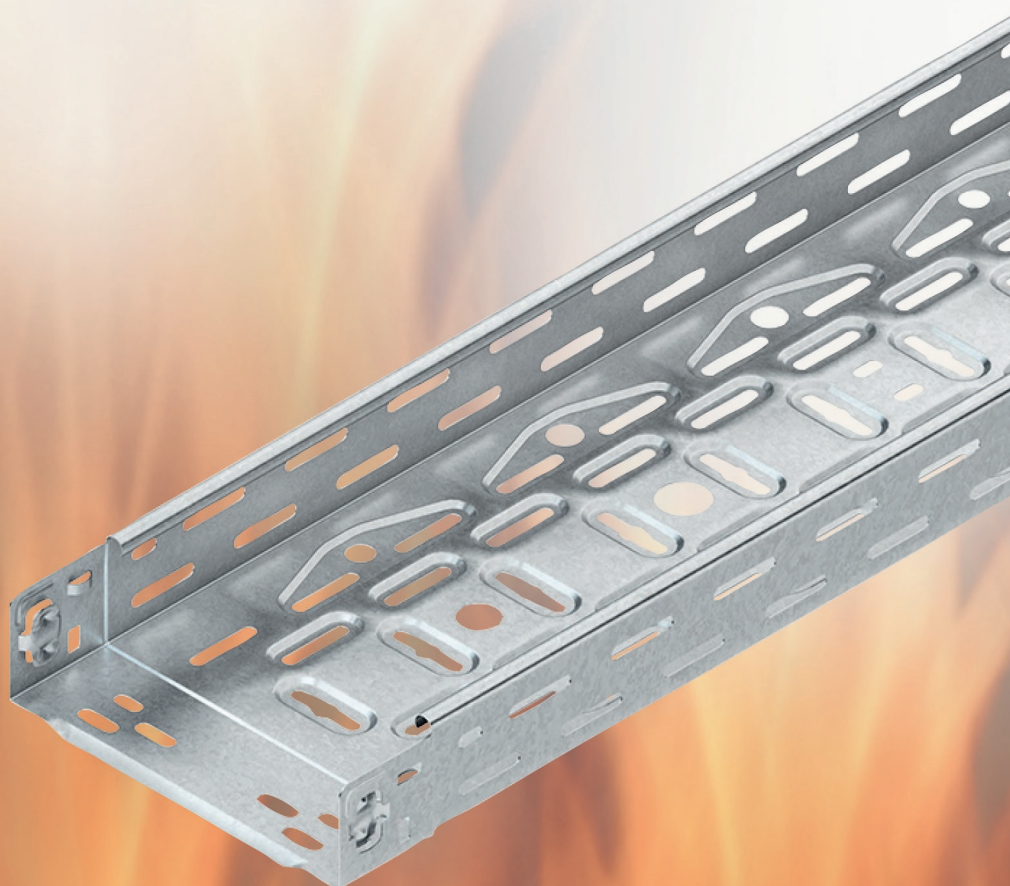
for marking functional maintenance cable trays

		Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E gemäß DIN 4102-12					
Errichtungsdatum: _____					
Errichter der Anlage: _____					
Prüfzeugnis-Nr.: _____					
Prüfzeugnis Inhaber: _____					
ACHTUNG! Trasse nur für elektrischen Funktionserhalt					



Suitable dowels can be found in chapter "8 Fastening Elements".

➡ 256



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.1 Cable Tray RLVC... E5 and Ceiling Suspensions TAH... E6/E7

With the diverse E30 - E90 circuit integrity maintenance installation systems made of stainless steel in corrosion protection classes C II to C V according to EN 1993-1-4, the needs of industries with increased hygiene requirements such as the beverage, food, pharmaceutical or cosmetics industries can be met just as well as the requirements in highly corrosive environments such as traffic tunnels, the petrochemical industry, offshore, etc. An application-oriented selection of accessories in every corrosion

protection class enables fast and smooth installation in almost any structural situation.

With our stainless steel installation system RLVC ... E5 and the tunnel suspensions TAH ... E6 or TAH ... E7 we fulfil the high requirements for corrosion resistance of the ZTV-ING part 5 in German traffic tunnels.

Tested and certified with all cable construction types of the most important cable manufacturers.

Support span $a \leq 1,5$ resp. 1,8 m
Cable load $q \leq 15, 20$ resp. 30 kg/m

For this installation system for circuit integrity maintenance in E30 - E90 according to DIN 4102 Part 12, RLVC cable trays with an rail height of 60 mm in widths of 100 to 300 mm in stainless steel quality 1.4571 (E5) are used.

The connection of two lengths or one length and one fitting is made using the integrated connector and an additional 4 FLM 6X12 E5 mushroom-head bolts. Alternatively, in the case of cut cable trays, the connection can be made using two internal universal splice plates RVVF 50 E5 and the joint bar RSLB... E5.

With the fittings and the connectors (from  84), any horizontal and vertical change of direction can be realised on site. All changes of direction must be supported in the immediate vicinity of the joint (distance ≤ 150 mm) by an appropriate supporting structure.

In the case of horizontal routing with height offsets, the cable tray running at an angle must be fastened to the bracket KTAW... E6/E7 using cable tray fasteners KLAF 6 E5.

In doing so, the fastening plate of the KLAF 6 E5 can be adapted to any slope angle by bending it by hand. To protect the cables, the cable tray ends must be provided with edge protection plate RKB... E5.

For ceiling installations, TAH... E6/E7 ceiling suspensions with suspension lengths of 200, 400 or 600 mm are available in stainless steel qualities 1.4529 (E6) or 1.4547 (E7) for single or double-layer cable tray leads.

For wall mounting, the bracket KTAW 100 ... E6/E7 to KTAW 350 E6/E7 are used. The bracket length may be max. 50 mm greater than the cable tray width.

The suspension construction

consists for the:

single-layer suspension made of **TAH-A ... E6 / E7** or **TAH-B ... E6 / E7**

and for

two-layer suspension made of **TAH-D ... E6 / E7** or **TAH-E ... E6 / E7**

Other suspension lengths and variants for installation on slopes are available on request.

Please order the bolts for fastening the channel to the suspensions (2 FLM 6X12 E5 per layer) separately.

Fittings must be supported in the immediate vicinity of the joints by an appropriate support structure.

The fastening

of the suspension construction is carried out with:

screws/dowels M 8 approved by the building authorities

The material requirement

of the suspension construction per suspension unit:

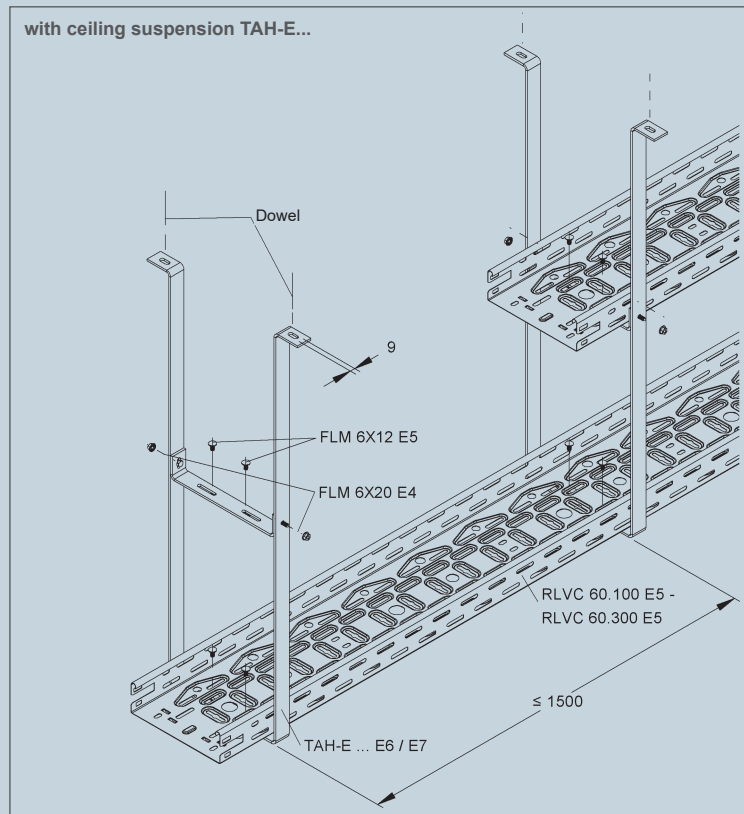
Designation	Model No.	
Ceiling suspension	TAH-A... resp. TAH-B...	1
Mushroom-head bolt	FLM 6X12 E5	2
Dowel	M8	2

Designation	Model No.	
Ceiling suspension	TAH-D... resp. TAH-E...	1
Mushroom-head bolt	FLM 6X12 E5	4
Dowel	M8	2

Ceiling mounting



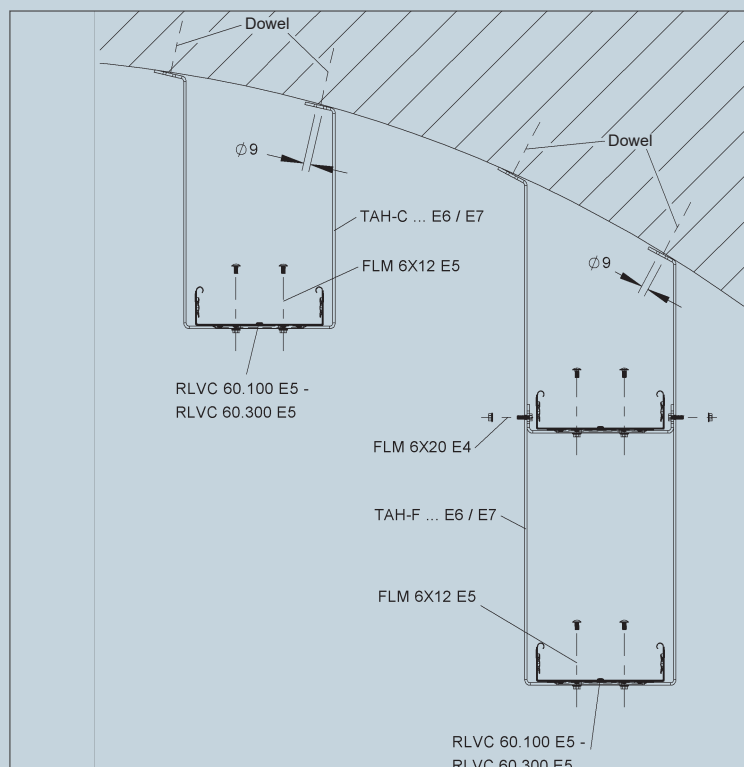
Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span a $\leq$ 1.5 m or 1.8 m . Cable load q $\leq$ 15, 20 or 30 kg/m



Cable trays with a rail height of 60 mm, in widths 100 to 300 mm (RLVC 60.100 E5 - RLVC 60.300 E5) can be used for ceiling mounting.

The cable trays are fixed to each suspension with 2 FLM 6X12 E5 mushroom-head bolts.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



Deviating suspension lengths and variants for installation in slopes on request.

The wall mounting

consists of:

Wall brackets **KTAW 100 E6 / E7 – KTAW 350 E6 / E7**

Please order the screws for fixing the tray to the brackets (2 FLM 6X12 E5 per bracket) separately.

The fastening

to the wall is carried out with:

Building authority approved dowel M 8

The material requirement

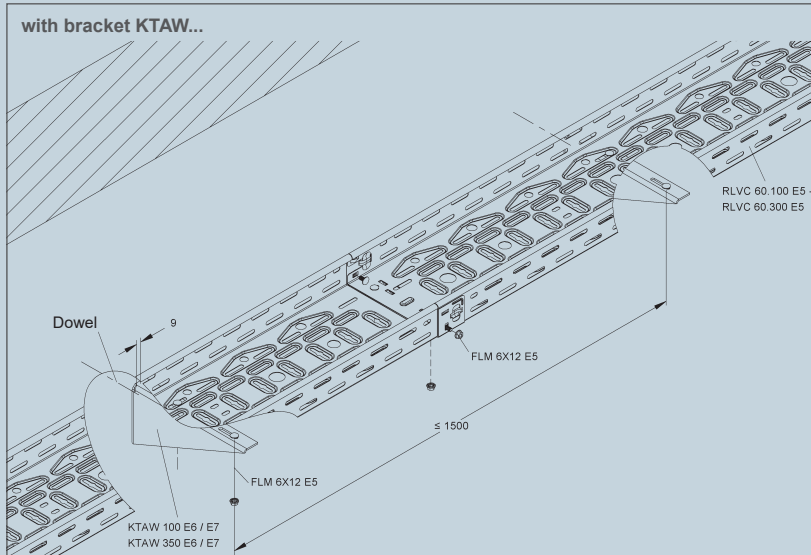
of the wall fastening per suspension unit:

Designation	Model No.	
Wall bracket	KTAW 100... KTAW 350...	1
Mushroom-head bolt	FLM 6X12 E5	2
Dowel	M8	1

Wall mounting

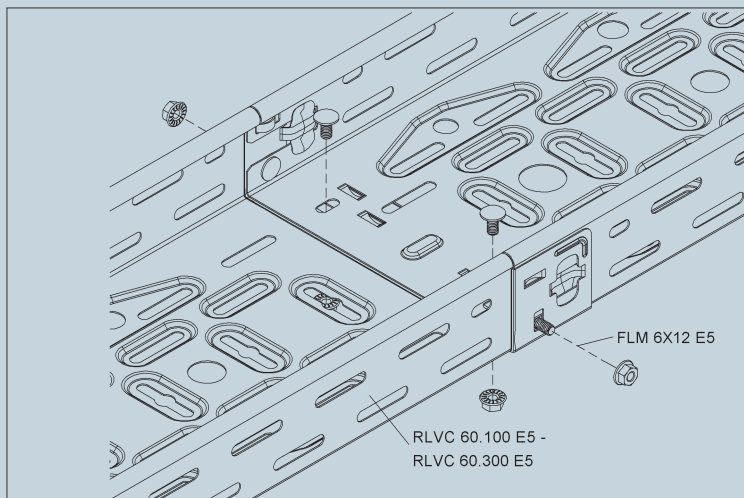


Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span a ≤ 1.5 m or 1.8 m . Cable load q ≤ 15, 20 or 30 kg/m

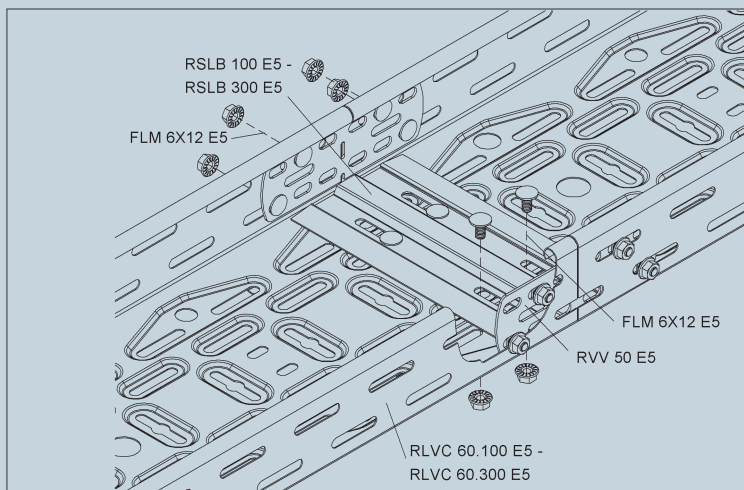


Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RLVC 60.100 E5 - RLVC 60.300 E5) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 FLM 6X12 E5 mushroom-head bolts.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



The joint connection is made using the integrated connector and an additional 4 FLM 6X12 E5 mushroom-head bolts.

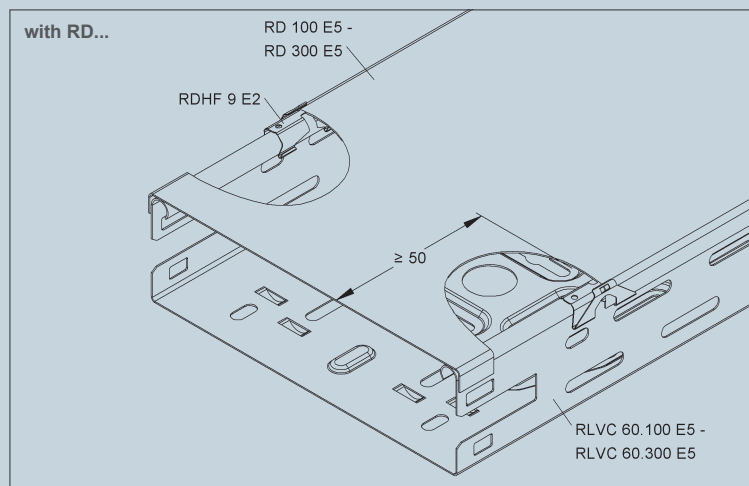


Alternatively, in the case of cut cable trays, the connection can be made via two internal universal splice plates RVV 50 and a joint bar RSLB...

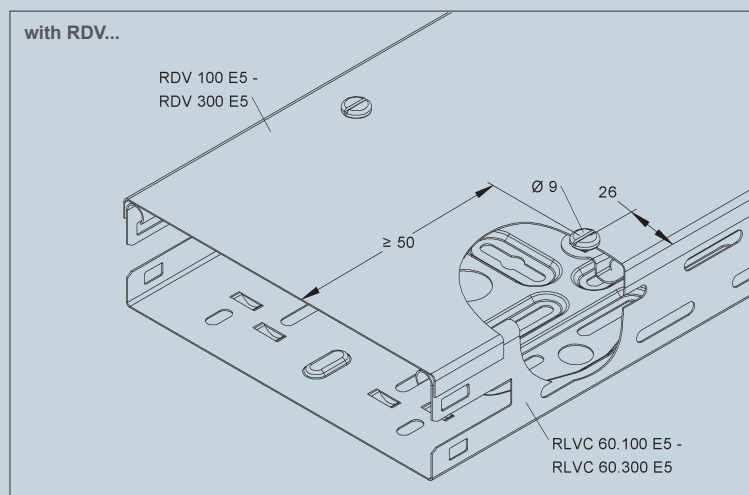
The position of the joints is not tied to a specific position.

2.1 Cable Tray RLVC... E5 and Ceiling Suspensions TAH... E6 / E7

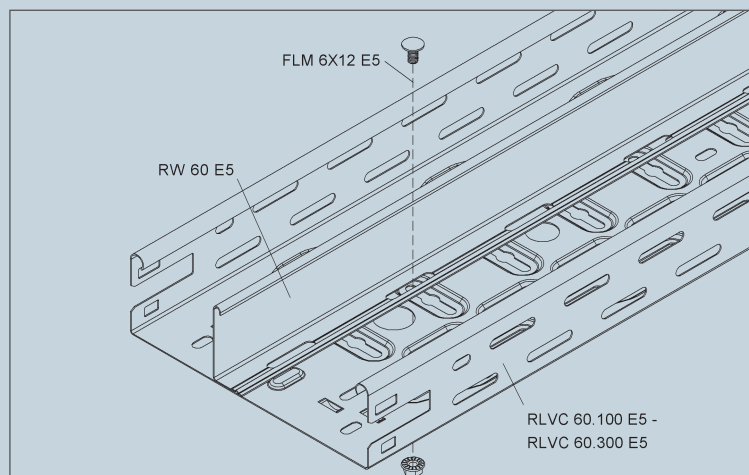
Cover fastening



If RD... E5 covers with cover clamp RDHF 9 E2 or RDV ... E5 and RTADV ... E5, RBADV ... E5, RESDV ... E5 and RTSDV ... E5 fitting covers are used, the max. permissible cable weight must be reduced by the weight of the cover.



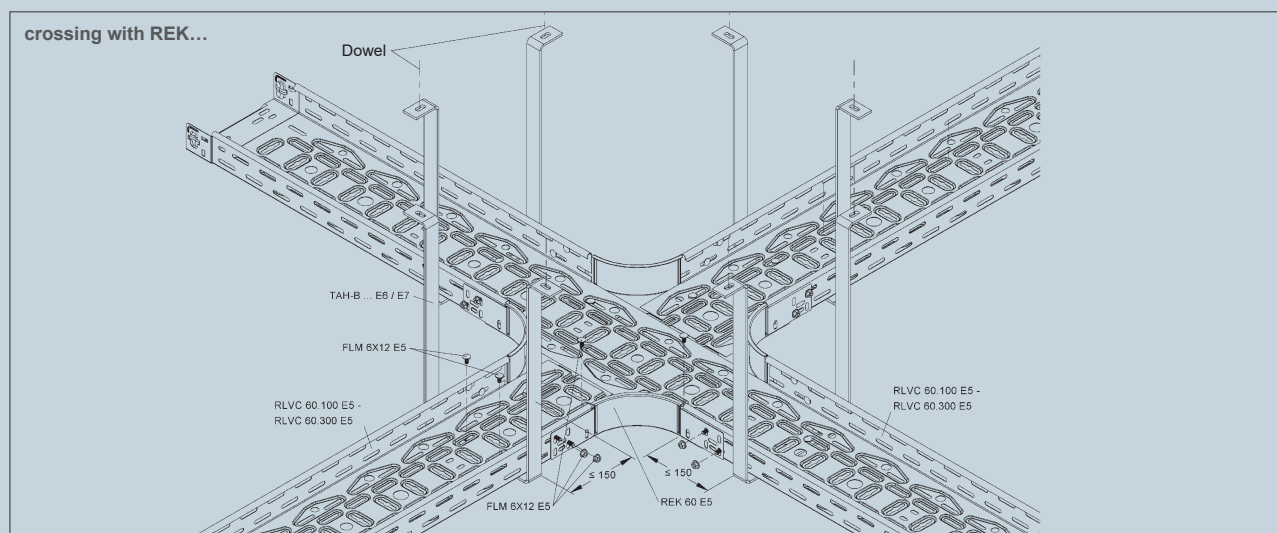
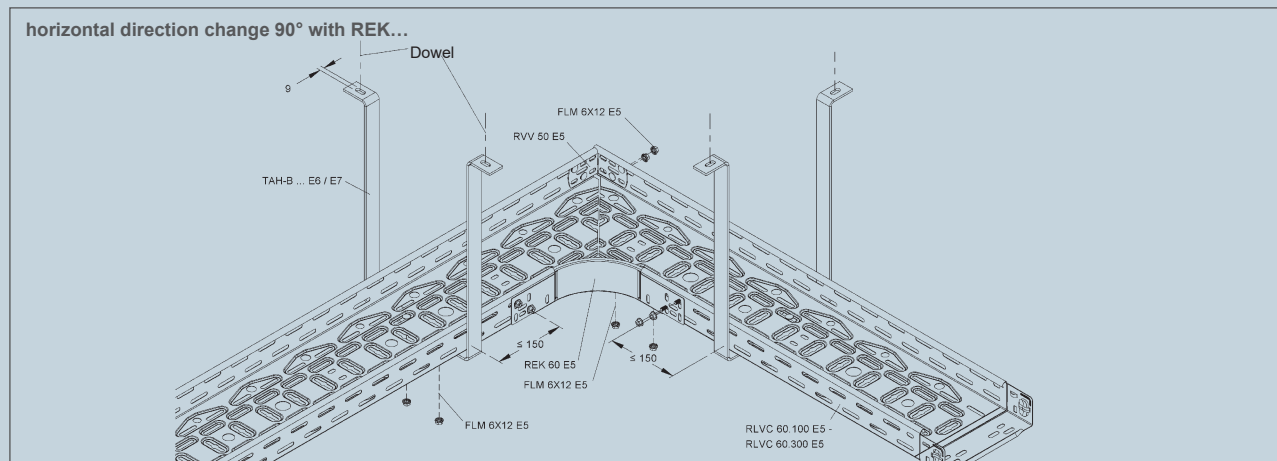
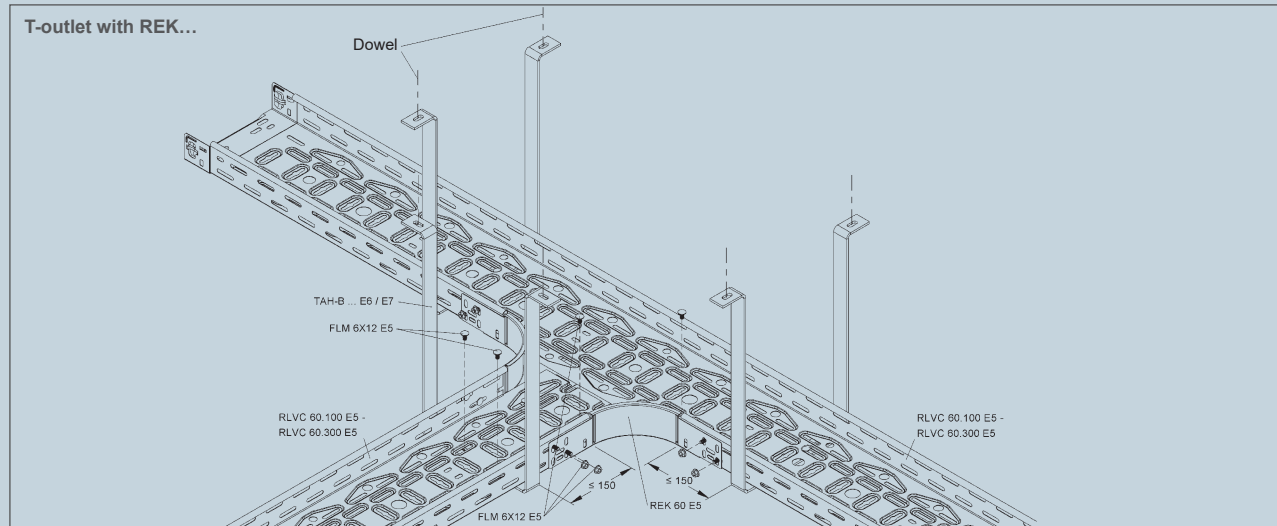
Barrier strip assembly



To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW 60 E5 can be used.

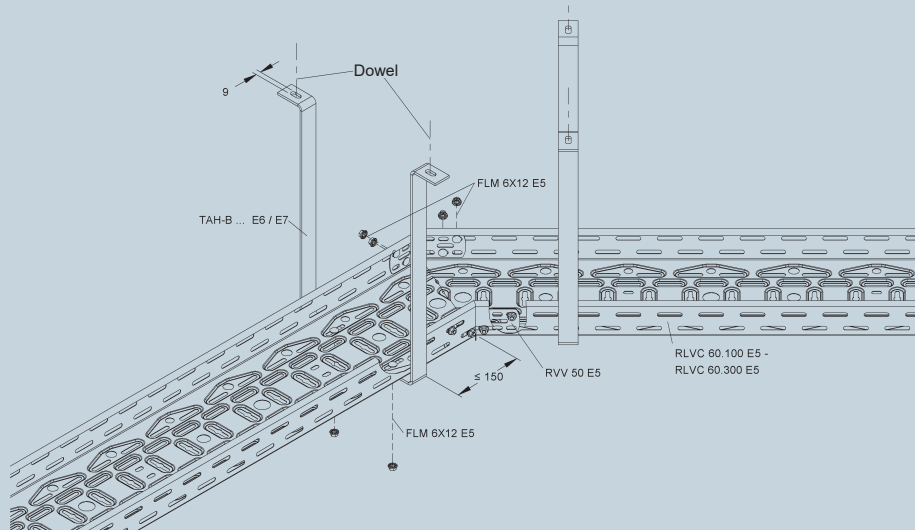
➡ 4

Overhead hanger and wall mounting of fittings for KFO RLVC... E5

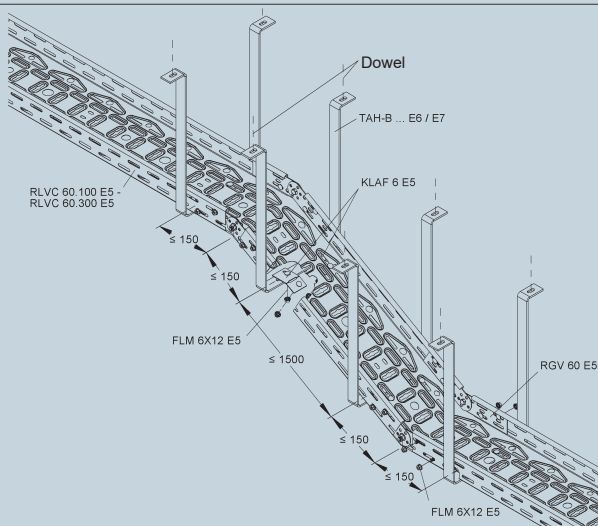
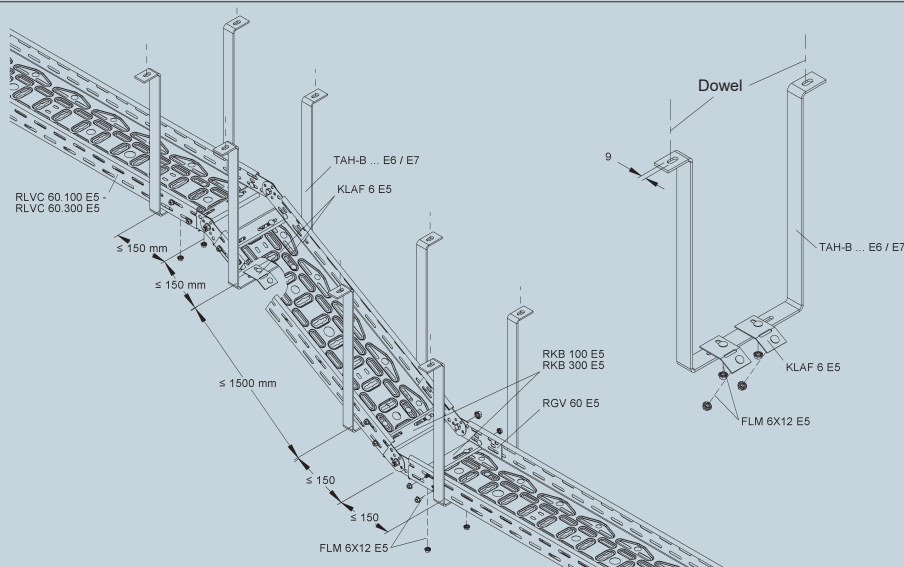


Overhead hanger and wall mounting of fittings for KFO RLVC... E5

with RVV...



with RGV...



Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Ceiling mounting Ceiling suspension TAH - ... E6/E7 B ≤ 300 mm q ≤ 20 kg/m a ≤ 1500 mm	Wall mounting Bracket KTAW... E6/E7 B ≤ 300 mm q ≤ 20 kg/m a ≤ 1500 mm
	Cable type		
Dätwyler AG Kabel + Systeme	Pyrofil Keramik (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	-	E60
	Pyrofil Keramik (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E60
	Pyrofil Keramik (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90 q ≤ 15 kg/m	E90 q ≤ 15 kg/m
	Pyrofil Keramik (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90 q ≤ 30 kg/m a ≤ 1800 mm	E90 q ≤ 30 kg/m a ≤ 1800 mm
	Pyrofil Keramik JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 30 kg/m	E30 q ≤ 30 kg/m
	Pyrofil Keramik JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 30 kg/m a ≤ 1800 mm	-
Kabelwerk Eupen AG	Eucasafe (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E60	E30
	Eucasafe (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	-
	Eucasafe (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90	E90 q ≤ 30 kg/m a ≤ 1800 mm
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90 q ≤ 30 kg/m a ≤ 1800 mm	E90 q ≤ 30 kg/m a ≤ 1800 mm
	Eucasafe JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	-	E30 q ≤ 20 kg/m
PRYSMIAN Kabel + Systeme GmbH	Sienopyr (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	-	E30
	Sienopyr (N)HXCH... FE180 E90 n x ≥ 2,5/2,5 mm ²	E90 q ≤ 30 kg/m a ≤ 1800 mm	-
	Sienopyr JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	E60 q ≤ 30 kg/m a ≤ 1800 mm	E60 q ≤ 30 kg/m a ≤ 1800 mm
Studer Cables AG	BETAflam (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	-	E30
	BETAflam (N)HXCH... FE180 E30 - E60 n x ≥ 16/16 mm ²	E30	E30
	BETAflam (N)HXH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90 q ≤ 15 kg/m n x ≤ 16/16 mm ²	E90 q ≤ 15 kg/m n x ≤ 16/16 mm ²
	BETAflam JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	-	E30
	BETAflam JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E90	E90
	BETAflam JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30

2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

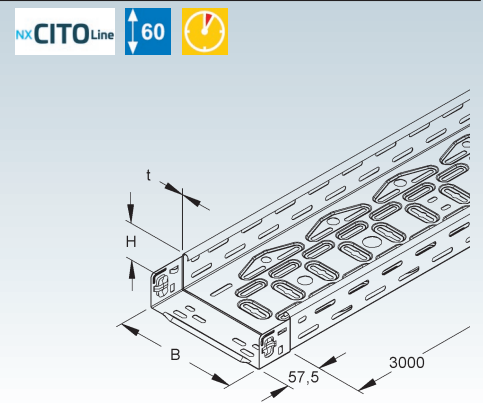
2.1 Cable Tray RLVC... E5 and Ceiling Suspensions TAH... E6 / E7

Cable Tray, light

perforated, with embossed splice plate

Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
E5 RLVC 60.100 E5	60	100	0,8	113088	139,70	2 x 3 m
E5 RLVC 60.200 E5	60	200	0,8	113071	203,05	2 x 3 m
E5 RLVC 60.300 E5	60	300	0,8	071470	264,50	2 x 3 m

Please order the necessary screws for the joint separately.
Requirement: 4 pieces FLM 6X12 E5

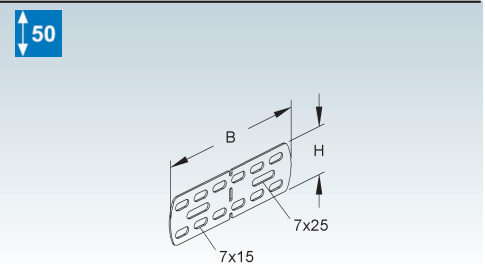


Universal-Splice Plate

Model No.	Height H	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E5 RVV 50 E5	44	135	4 FLM 6X12 E5	729906	8,86	20 pcs.

Requirement: 2 pieces per joint

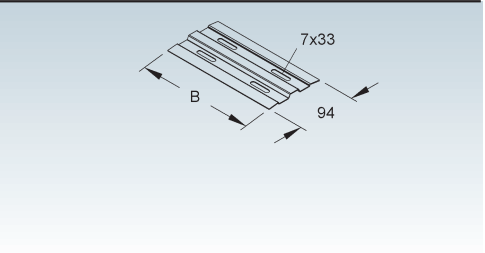
Can be used as T-connector, angle connector, joint connector and splice plate



Joint Bar

Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E5 RSLB 100 E5	90	4 FLM 6X12 E5	891344	9,76	10 pcs.
E5 RSLB 200 E5	189	4 FLM 6X12 E5	891368	18,63	50 pcs.
E5 RSLB 300 E5	289	4 FLM 6X12 E5	900398	25,56	50 pcs.

Requirement: 1 piece per joint

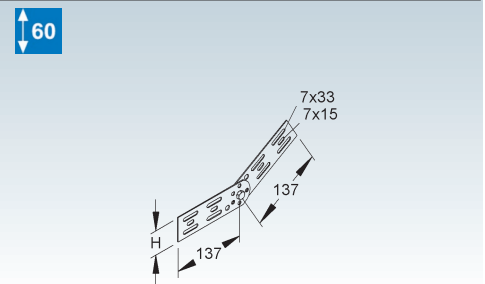


Joint Connector

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E5 RGV 60 E5	47	4 FLM 6X12 E5	107384	15,48	20 pcs.

for simple on-site creation of height offsets in horizontal cable systems

Requirement: 2 pieces per joint

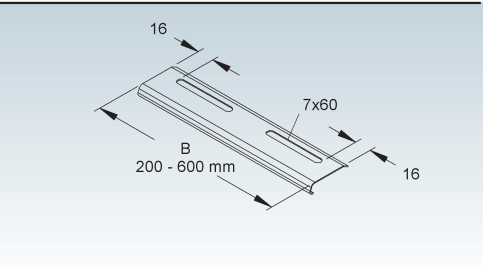


Edge Protection Plate

welded rounded edges

Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E5 RKB 100 E5	92	1 FLM 6X12 E5	201365	4,33	10 pcs.
E5 RKB 200 E5	192	2 FLM 6X12 E5	201372	8,99	10 pcs.
E5 RKB 300 E5	292	2 FLM 6X12 E5	122042	13,20	10 pcs.

to reinforce the cable tray bottom and protect the cables at the cable tray end

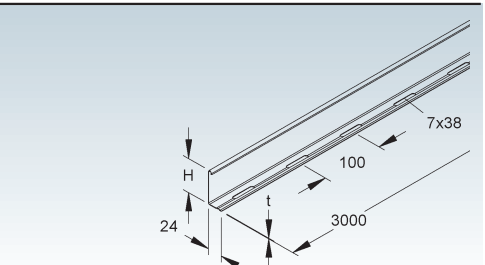


Barrier Strip

Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm				
E5 RW 60 E5	55	0,8	4 FLM 6X12 E5	729401	54,46	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.



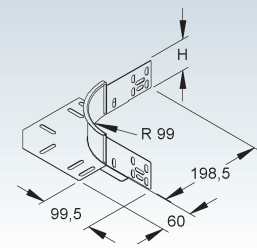
Extension Elbow

with unperforated side profile, but with connector perforations, with integrated splice plates, with continuous cable support through overlapping base plate

Model No.	Height H mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 REK 60 E5	60	6 FLM 6X12 E5	729500	30,97	10 pcs.

for creating horizontal 90° elbow and T-connections of cable trays

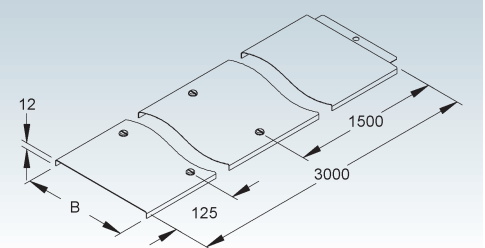
60



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
E5 RDV 100 E5	102	891009	80,80	2 x 3 m
E5 RDV 200 E5	202	891023	145,08	2 x 3 m
E5 RDV 300 E5	302	891047	208,07	2 x 3 m



Ceiling Suspension, single-layer

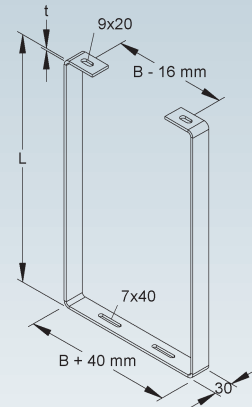
C-bracket

Model No.	Width B mm	Length L mm	Material thickness (t) mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E6 TAH-A 100/200 E6	100	200	4	119332	56,32	1 pc.
E6 TAH-A 100/400 E6	100	400	4	119370	94,63	1 pc.
E6 TAH-A 100/600 E6	100	600	4	119394	132,93	1 pc.
E6 TAH-A 200/200 E6	200	200	4	119424	65,90	1 pc.
E6 TAH-A 200/400 E6	200	400	4	119448	104,20	1 pc.
E6 TAH-A 200/600 E6	200	600	4	119462	142,51	1 pc.
E6 TAH-A 300/200 E6	300	200	4	119486	75,48	1 pc.
E6 TAH-A 300/400 E6	300	400	4	119516	113,78	1 pc.
E6 TAH-A 300/600 E6	300	600	4	119523	152,08	1 pc.
E7 TAH-A 100/200 E7	100	200	4	119356	56,47	1 pc.
E7 TAH-A 100/400 E7	100	400	4	119387	94,87	1 pc.
E7 TAH-A 100/600 E7	100	600	4	119417	133,27	1 pc.
E7 TAH-A 200/200 E7	200	200	4	119431	66,07	1 pc.
E7 TAH-A 200/400 E7	200	400	4	119455	104,47	1 pc.
E7 TAH-A 200/600 E7	200	600	4	119479	142,87	1 pc.
E7 TAH-A 300/200 E7	300	200	4	119493	75,67	1 pc.
E7 TAH-A 300/400 E7	300	400	4	119530	114,07	1 pc.
E7 TAH-A 300/600 E7	300	600	4	119547	152,47	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E5 per suspension



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.1 Cable Tray RLVC... E5 and Ceiling Suspensions TAH... E6 / E7

Ceiling Suspension, single-layer

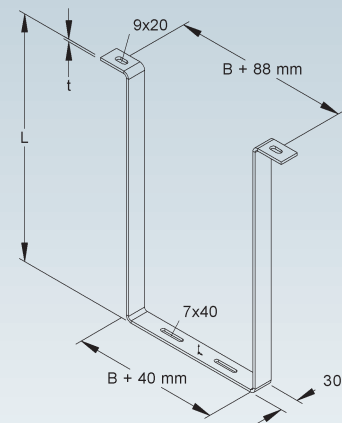
C-bracket

	Model No.	Width B	Length L	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm			
E6	TAH-B 100/200 E6	100	200	4	119554	56,32	1 pc.
E6	TAH-B 100/400 E6	100	400	4	119578	94,63	1 pc.
E6	TAH-B 100/600 E6	100	600	4	119592	132,93	1 pc.
E6	TAH-B 200/200 E6	200	200	4	119622	65,90	1 pc.
E6	TAH-B 200/400 E6	200	400	4	119646	104,20	1 pc.
E6	TAH-B 200/600 E6	200	600	4	119660	142,51	1 pc.
E6	TAH-B 300/200 E6	300	200	4	119684	75,48	1 pc.
E6	TAH-B 300/400 E6	300	400	4	119714	113,78	1 pc.
E6	TAH-B 300/600 E6	300	600	4	119745	152,08	1 pc.
E7	TAH-B 100/200 E7	100	200	4	119561	56,47	1 pc.
E7	TAH-B 100/400 E7	100	400	4	119585	94,87	1 pc.
E7	TAH-B 100/600 E7	100	600	4	119615	133,27	1 pc.
E7	TAH-B 200/200 E7	200	200	4	119639	66,07	1 pc.
E7	TAH-B 200/400 E7	200	400	4	119653	104,47	1 pc.
E7	TAH-B 200/600 E7	200	600	4	119677	142,87	1 pc.
E7	TAH-B 300/200 E7	300	200	4	119691	75,67	1 pc.
E7	TAH-B 300/400 E7	300	400	4	119738	114,07	1 pc.
E7	TAH-B 300/600 E7	300	600	4	119752	152,47	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E5 per suspension



Ceiling Suspension, two-layer

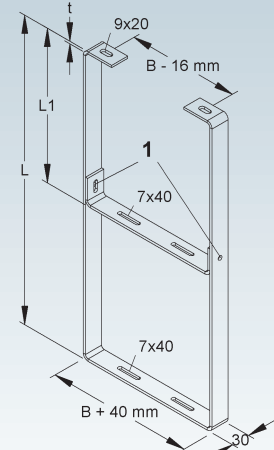
C-bracket with intermediate layer

	Model No.	Width B	Total length L	length L1	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm			
E6	TAH-D 100/500/250 E6	100	500	250	4	164059	130,65	1 pc.
E6	TAH-D 100/800/400 E6	100	800	400	4	164073	188,11	1 pc.
E6	TAH-D 200/500/250 E6	200	500	250	4	164097	149,63	1 pc.
E6	TAH-D 200/800/400 E6	200	800	400	4	164127	207,08	1 pc.
E6	TAH-D 300/500/250 E6	300	500	250	4	164141	168,68	1 pc.
E6	TAH-D 300/800/400 E6	300	800	400	4	164165	226,14	1 pc.
E7	TAH-D 100/500/250 E7	100	500	250	4	164066	130,94	1 pc.
E7	TAH-D 100/800/400 E7	100	800	400	4	164080	188,54	1 pc.
E7	TAH-D 200/500/250 E7	200	500	250	4	164110	149,93	1 pc.
E7	TAH-D 200/800/400 E7	200	800	400	4	164134	207,53	1 pc.
E7	TAH-D 300/500/250 E7	300	500	250	4	164158	169,01	1 pc.
E7	TAH-D 300/800/400 E7	300	800	400	4	164172	226,61	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E5 per suspension



Ceiling Suspension, two-layer

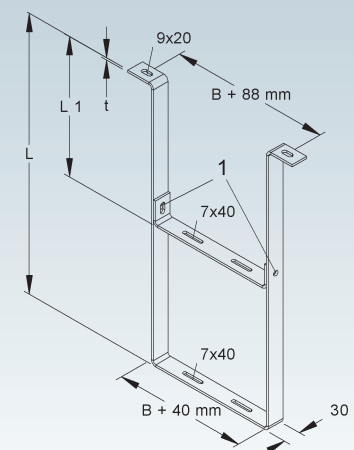
C-bracket with intermediate layer

	Model No.	Width B	Total length L	length L1	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm			
E6	TAH-E 100/500/250 E6	100	500	250	4	164189	130,65	1 pc.
E6	TAH-E 100/800/400 E6	100	800	400	4	164219	188,11	1 pc.
E6	TAH-E 200/500/250 E6	200	500	250	4	164233	149,63	1 pc.
E6	TAH-E 300/800/400 E6	300	800	400	4	164295	226,14	1 pc.
E6	TAH-E 200/800/400 E6	200	800	400	4	164257	207,08	1 pc.
E6	TAH-E 300/500/250 E6	300	500	250	4	164271	168,68	1 pc.
E7	TAH-E 100/500/250 E7	100	500	250	4	164196	130,94	1 pc.
E7	TAH-E 100/800/400 E7	100	800	400	4	164226	188,54	1 pc.
E7	TAH-E 200/500/250 E7	200	500	250	4	164240	149,93	1 pc.
E7	TAH-E 200/800/400 E7	200	800	400	4	164264	207,53	1 pc.
E7	TAH-E 300/500/250 E7	300	500	250	4	164288	169,01	1 pc.
E7	TAH-E 300/800/400 E7	300	800	400	4	164318	226,61	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

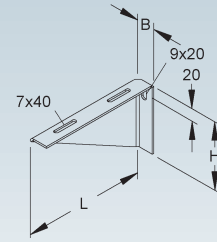
Requirement: 2 FLM 6X12 E5 per suspension



Wall Bracket

Model No.	Height H	Width B	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm			
E6 KTAW 100 E6	110	30	100	163953	24,87	1 pc.
E6 KTAW 150 E6	110	30	150	163960	34,81	1 pc.
E6 KTAW 200 E6	110	30	200	163984	44,76	1 pc.
E6 KTAW 250 E6	110	30	250	163991	54,70	1 pc.
E6 KTAW 300 E6	140	30	300	164028	77,43	1 pc.
E6 KTAW 350 E6	140	30	350	164035	89,17	1 pc.
E7 KTAW 100 E7	110	30	100	120499	24,93	1 pc.
E7 KTAW 150 E7	110	30	150	163977	34,90	1 pc.
E7 KTAW 200 E7	110	30	200	120505	44,87	1 pc.
E7 KTAW 250 E7	110	30	250	164011	54,84	1 pc.
E7 KTAW 300 E7	140	30	300	120512	77,62	1 pc.
E7 KTAW 350 E7	140	30	350	164042	89,39	1 pc.

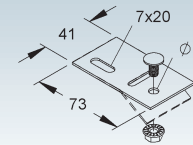
Please order the necessary fastening accessories separately for cable trays.
Requirement: 2 FLM 6X12 E5 per bracket



Cable Tray Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 KLAF 6 E5	1 FLM 6X12 E5	207947	4,07	1 pc.

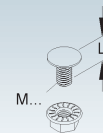
for fastening vertical cable trays to the bracket



Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

Model No.	Thread M	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm			
E5 FLM 6X12 E5	6	12	729104	0,79	50 pcs.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

	Niedax GmbH & Co.KG Asbacher Straße 141 D-53545 Linz am Rhein	Tel: +49 (0) 2644/5606-0 www.niedax.com	ACHTUNG! Trasse nur für elektrischen Funktionserhalt 
Kabelanlage E _____ gemäß DIN 4102-12			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			

For further installation systems in stainless steel such as vertical cable ladders, U-clamps and screw distance clamps, see chapter
"3 Standard Support Construction".

➡ 120

2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

◀ 45
◀ 241



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

With the E30 - E90 circuit integrity maintenance installation system KFO KL (without additional threaded rod) made of stainless steel of corrosion protection classes C III according to EN 1993-1-4, we offer you a unique installation option.

With this installation system, the needs of industry with increased hygiene requirements or the requirements in highly corrosive environments can be met, combined with the advantages such as high load-bearing capacity,

standard fastening spacing, cable installation without threading and E30 - E90 classifications with the circuit integrity maintenance cables from Dätwyler, Eupen or Studer Cables AG.

A practical range of accessories enables fast and smooth installation in almost any structural situation.

Cable ladders, overhead hangers, brackets and other system-related accessories are directly available.

Support span $a \leq 1,5 \text{ m}$
Cable load $q \leq 20 \text{ resp. } 25 \text{ kg/m}$

For this cable-specific installation option in accordance with DIN 4102 Part 12 for circuit integrity maintenance classes E30 to E90, the stainless steel cable ladder KL 60... E5 with a rail height of 60 mm is used in widths of 200 to 400 mm. To increase the support surface, these cable ladders have C-profile rungs of type 2970... E5 at a distance of 150 mm. Type B... E5 cable U-clamps can be used for cable fastening.

The joint connections are made with two KLVB 60/4 E5 splice plates and 4 SKM 8X16 E5 hexagon head screws each. The position of the joints is not bound to a specific position.

With angle connectors KWV 60 E5 and adjustable vertical splice plates KGV 60 E5, horizontal and vertical changes of direction can be realised on site. All changes of direction must be supported in the immediate vicinity of the joint

(distance $\leq 150 \text{ mm}$) by an appropriate supporting structure.

In the case of horizontal routing with height offsets, the cable ladders running at an angle must be fastened to the bracket KTAS... E5 using cable tray fasteners KLA 6 E5. The mounting plate of the KLA 6 E5 can be adjusted to any angle of inclination by bending it by hand.

For ceiling mounting, the HU 5050/... E5 or HU 6040/... E5 overhead hangers are available or, for greater flexibility on site, corresponding U-profiles and head plates.

When mounting the bracket KTAS... E5 on the overhead hanger or U-profile, the overhead hanger-distance profile HDS... must be used.

2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

The suspension construction

consists of:

- overhead hangers **HU 5050/... E5**
- or the profile **U 5050/... E5**
- with a screw head plate **KU 5050 E5, KUGH 5050 E5, KUGV 5050 E5**
- as well as the overhead hanger/wall bracket **KTAS 200 - 400 E5**

When mounting the brackets on the overhead hanger, it is essential to use the overhead hanger-distance profile HDS 50.50 E5 with screw SKM 10X80 E5 for both one-sided and two-sided mounting (see illustrations on the following pages). The cable ladders are fastened to the brackets with cable ladder fasteners KLTB 6 E5 (2 pieces per bracket), please order separately.

Fittings must be supported in the immediate vicinity of the joints by an appropriate support structure.

The fastening

of the suspension construction is carried out with:

- screws/dowels M 10 or M 12 (depending on the version) approved by the building authorities

The material requirement

of the suspension construction per suspension unit:

Designation	Model No.					
Overhead hanger or profile with head plate	HU 5050/... E5	1	1	1	1	1
	U 5050/... E5	1	1	1	1	1
	KU 5050 E5, KUGH 5050 E5	1	1	1	1	1
	resp. KUGV 5050 E5	1	1	1	1	1
Overhead hanger- and wall bracket	KTAS 200 - 400 E5	1	2	2	3	4
Overhead hanger- distance profile	HDS 50.50 E5	1	2	1	2	2
Cable ladder fastening	KLTB 6 E5	2	4	4	6	8
Dowels for KL 60.215 E5	M10	2	2	2	2	2
Dowels for KL 60.315 KL 60.415 E5	M12	2	2	2	2	2

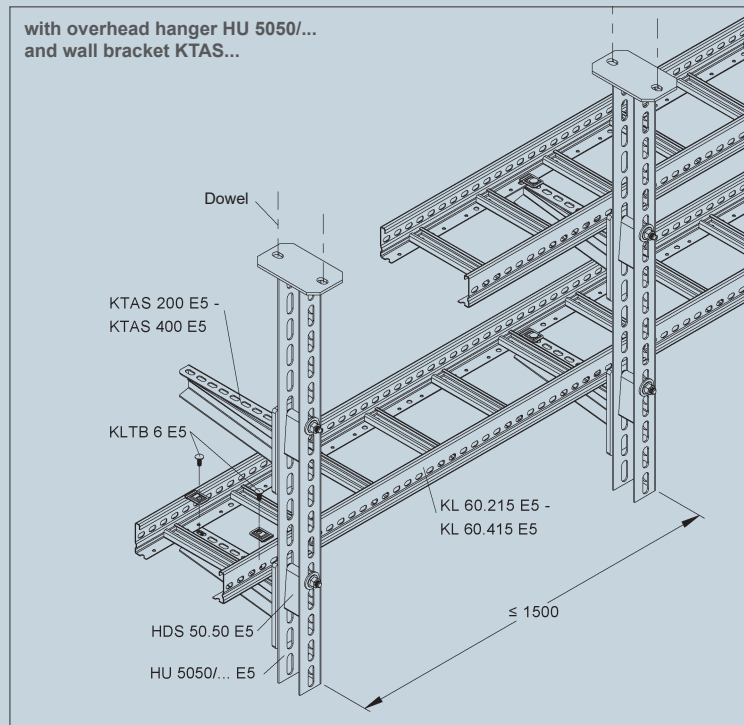
Other suspension variants on request!

Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256

Ceiling mounting

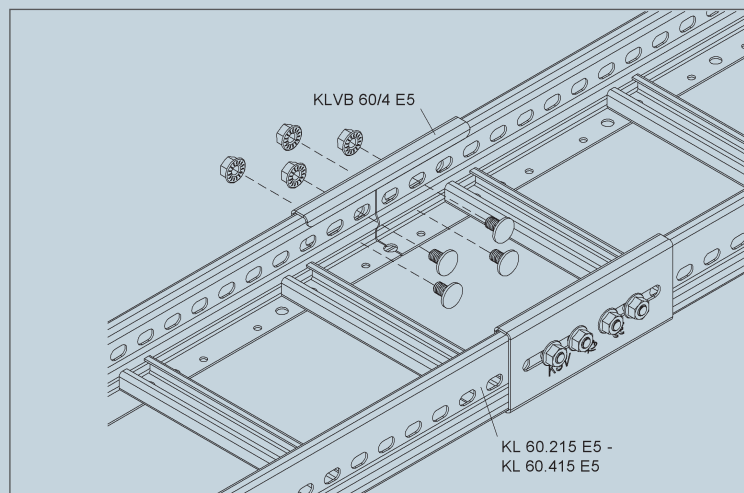


Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.5$ m . Cable load $q \leq 20$ or 25 kg/m



Cable ladders with a rail height of 60 mm, in widths 200 to 400 mm with a rung spacing of 150 mm (KL 60.215 - KL 60.415 E5) are used for ceiling installation. The cable ladders are fixed to the brackets with 2 cable ladder fasteners KLTB 6 E5.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.



The connection of two cable ladders KL 60... E5 is made via the cable ladder longitudinal splice plates KLV 60/4 E5 with 4 mushroom-head bolts SKM 8X16 E5 per splice plate.

Alternatively, the suspensions for this installation system can also be made with **HU 6040/... E5** overhead hanger, **U6040/... E5** U-profile, **KU 6040 E5** head plate and **HDS 60.40 E5** overhead hanger-distance profile (see products from ➡ 98).

2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

The wall mounting

consists of:

Overhead hanger/wall bracket **KTAS 200 - 400 E5**

The cable ladders are fixed to each bracket with 2 cable ladder fasteners KLTB 6 E5.

The fastening

to the wall with:

screws/dowels M 10 approved by the building authorities

The material requirement

of the wall fastening per suspension unit:

Designation	Model No.	
Overhead hanger- and wall bracket	KTAS 200 - 400 E5	1
Cable ladder fastening	KLTB 6 E5	2
Dowels for KL 60.215 - 415 E5	M10	1

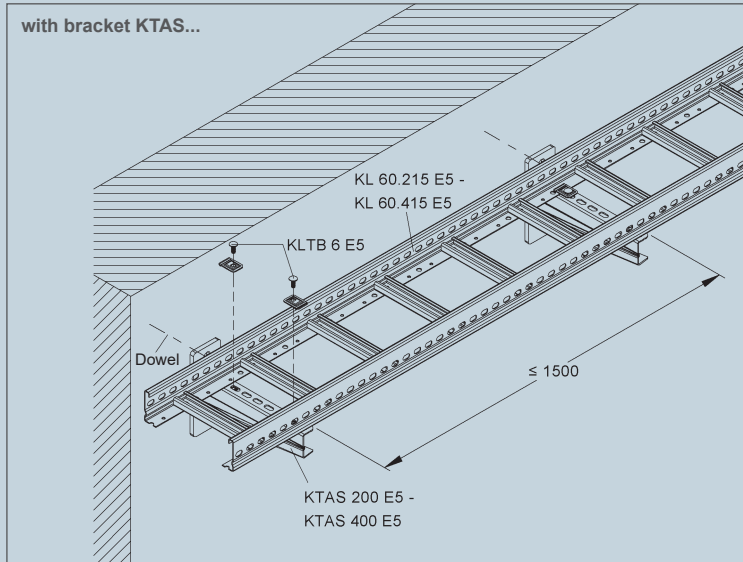
Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256



Wall mounting



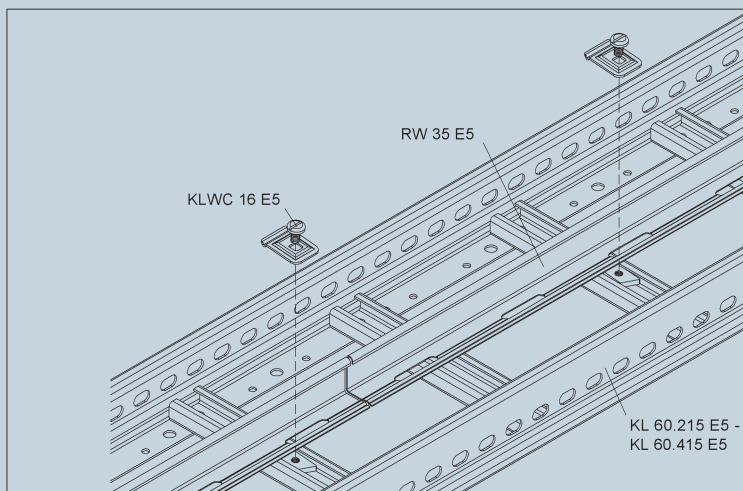
Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support spacing $a \leq 1.5$ m . Cable load $q \leq 20$ or 25 kg/m



Cable ladders with a rail height of 60 mm, in widths 200 to 400 mm with a rung spacing of 150 mm (KL 60.215 - KL 60.415 E5) are used for wall mounting. The cable ladders are fixed to the brackets with 2 cable ladder fasteners KLTB 6 E5.

The designs and instructions of the respective valid german classification report for electric cable systems with circuit integrity maintenance (abP) must be taken into account.

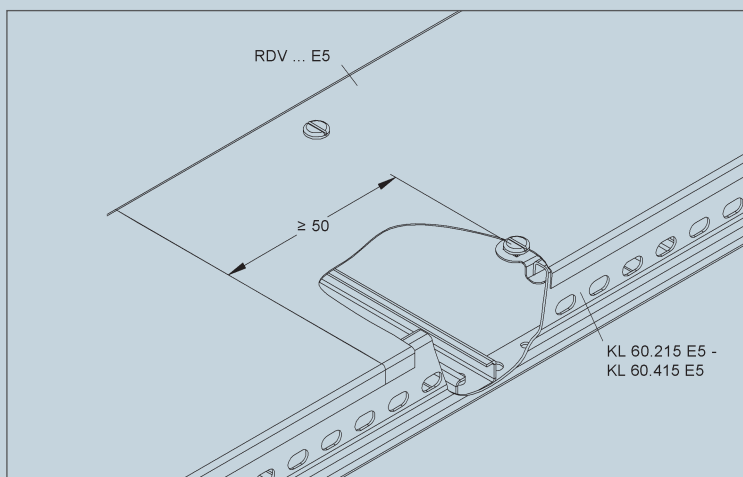
The connection of two cable ladders KL 60... E5 is made via the cable ladder longitudinal splice plate KLVB 60/4 E5 with 4 hexagon screws SKM 8X16 E5 per splice plate.



To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW... can be used.

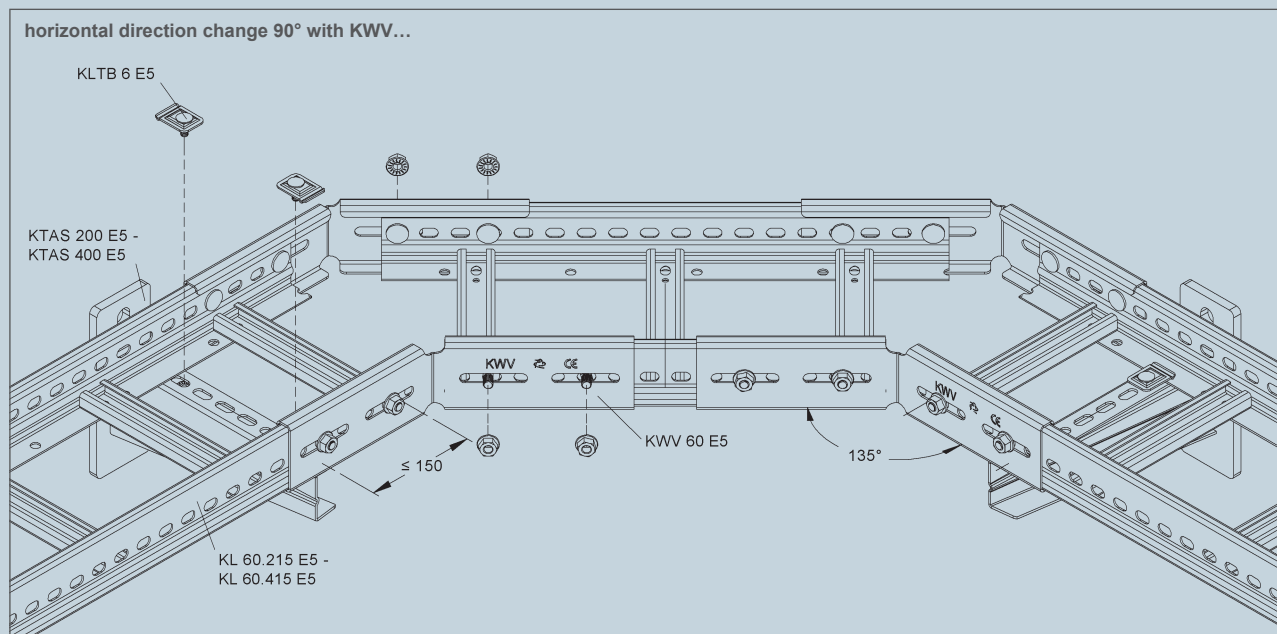
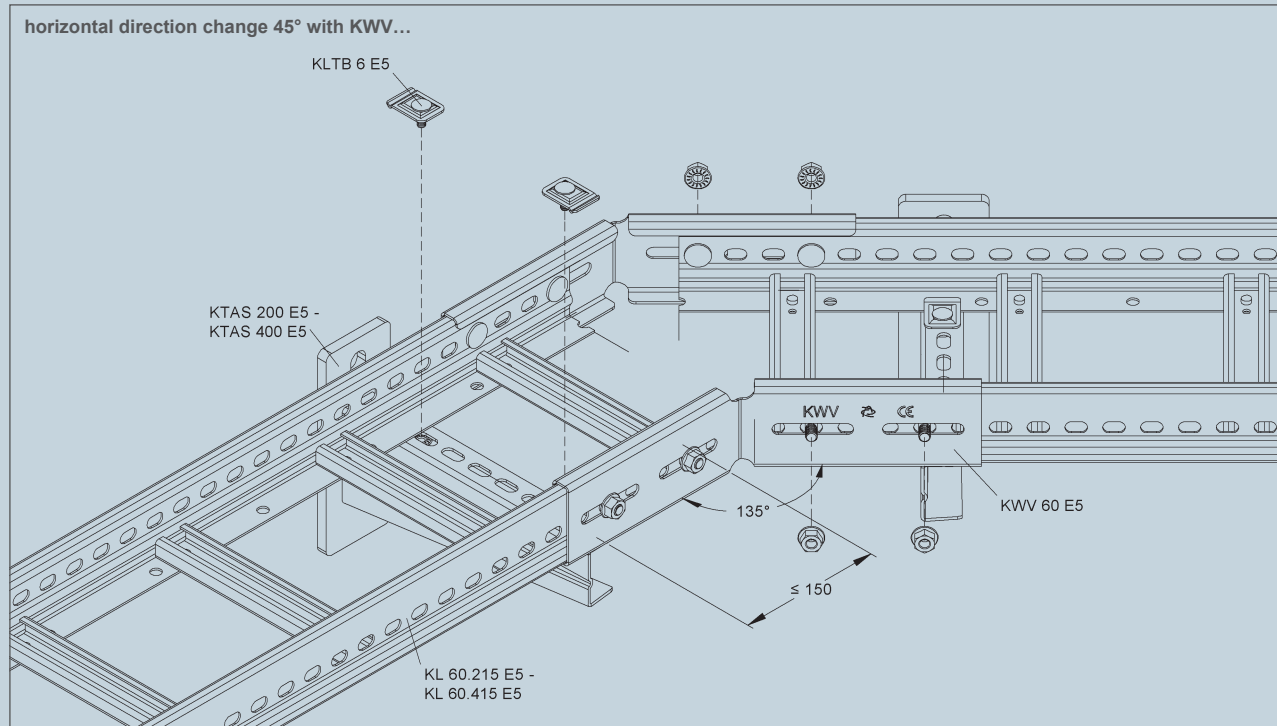
This is fastened in the rung using the KLWC 16 E5 barrier strip fastening clamp.

➡ 4

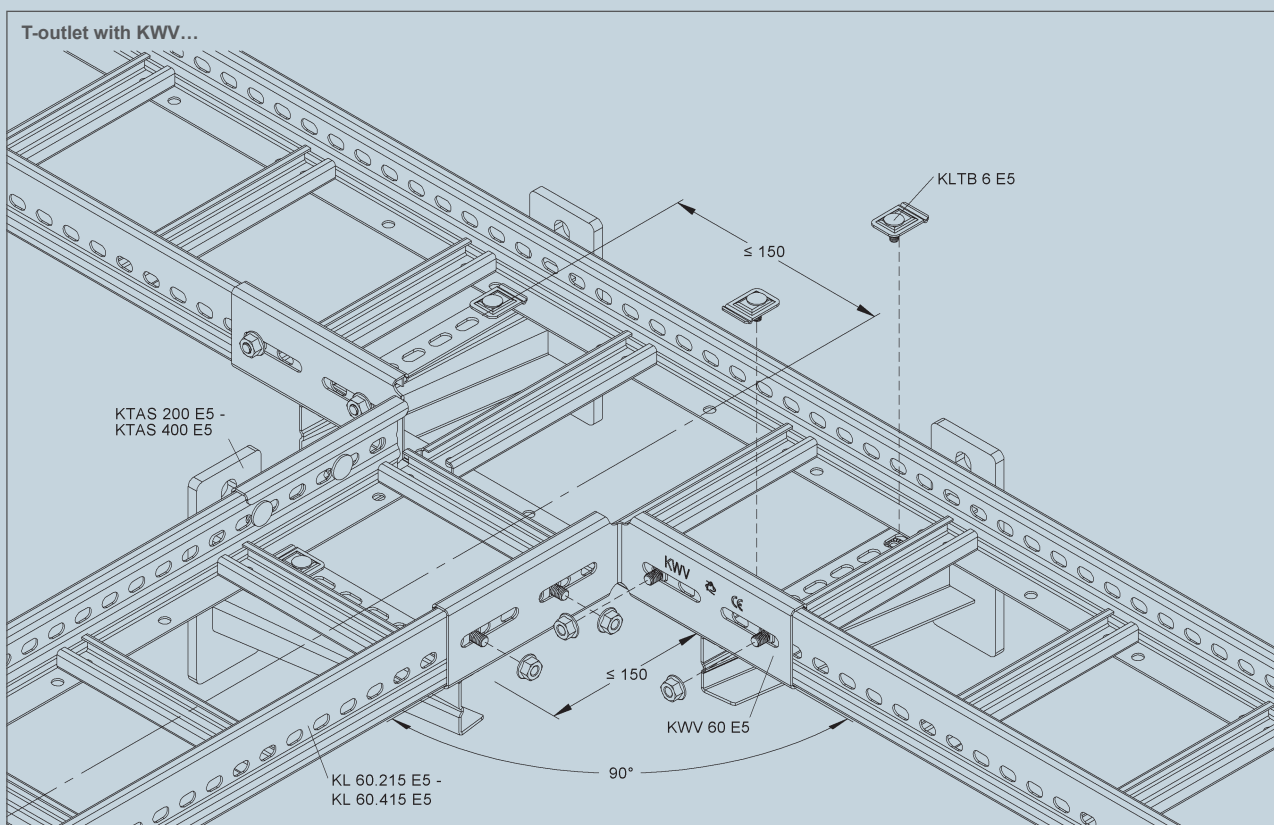
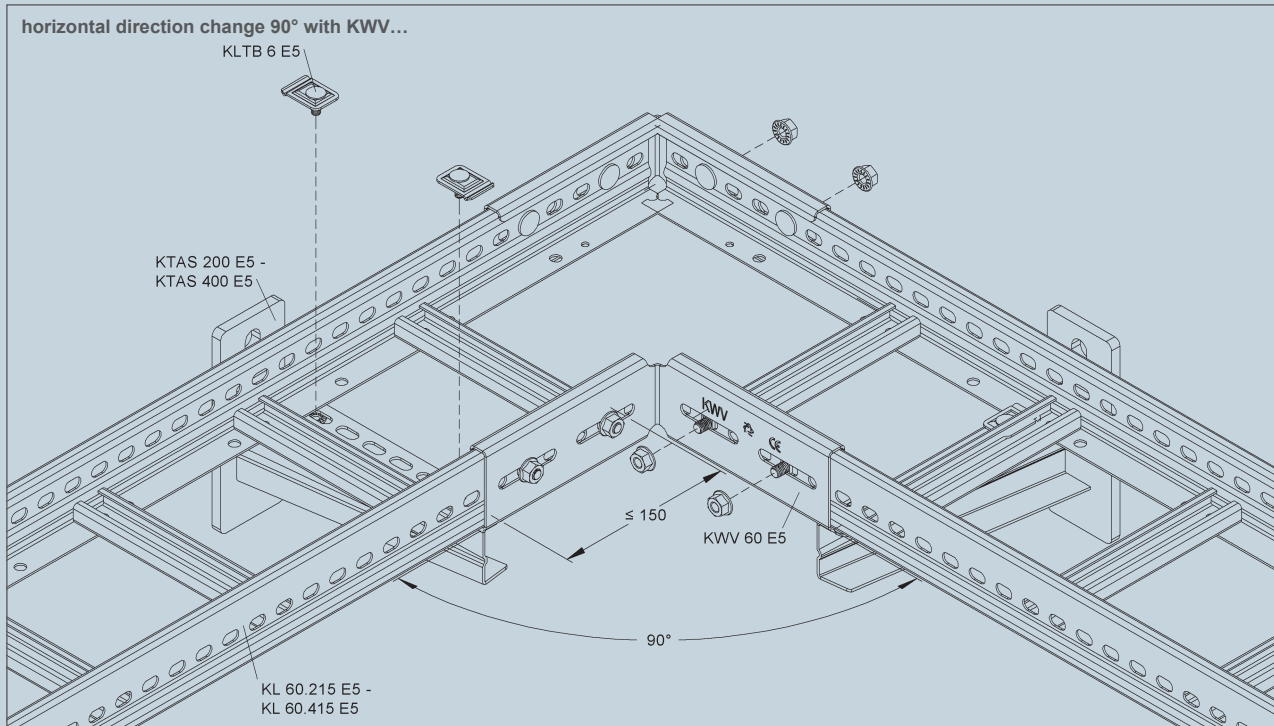


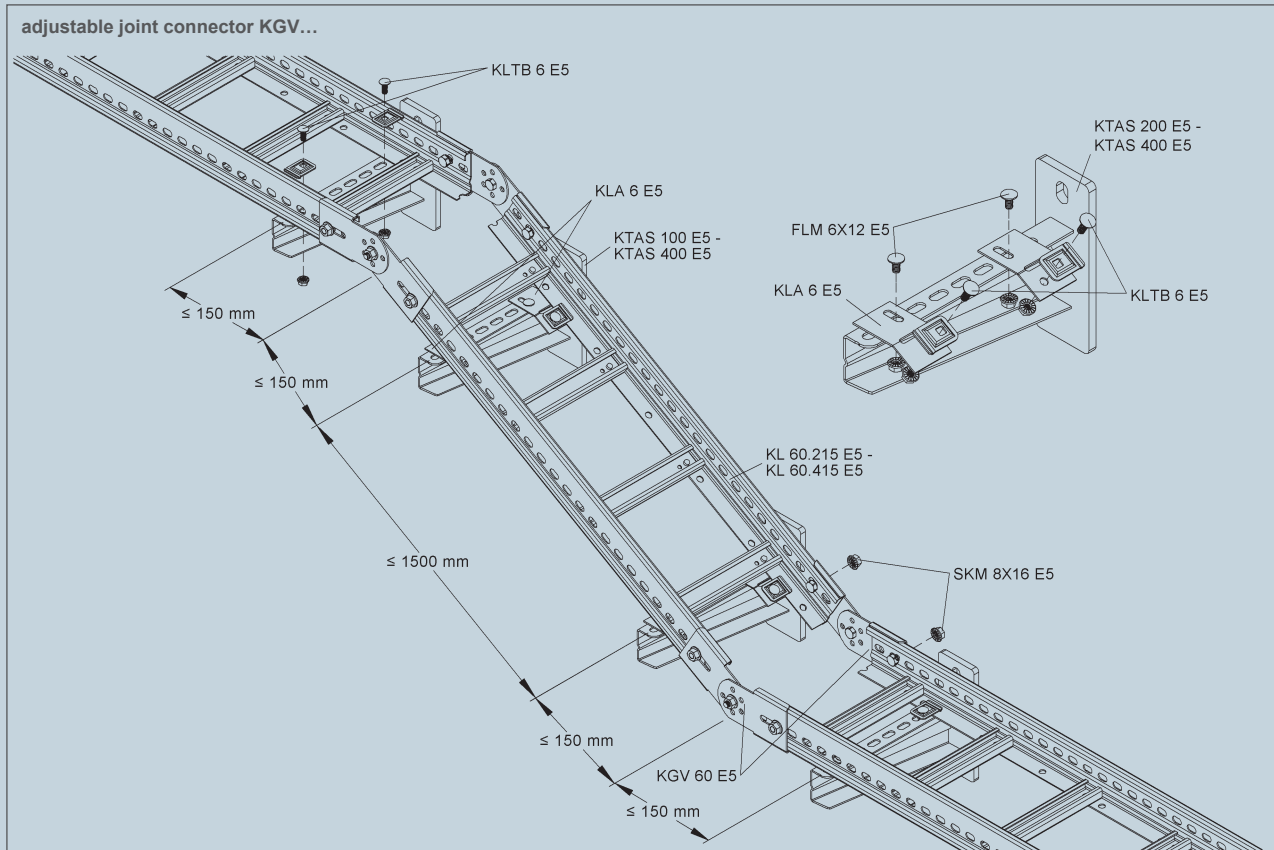
If RDV... E5 covers are used, the max. permissible cable weight must be reduced by the weight of the cover.

Overhead hanger and wall mounting of fittings for KL...



Overhead hanger and wall mounting of fittings for KL...





Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Ceiling mounting Overhead hanger HU5050/... E5 & HU 6040/... E5 B ≤ 400 mm q ≤ 20 kg/m a ≤ 1500 mm	Wall mounting Bracket KTAS... E5 B ≤ 400 mm q ≤ 20 kg/m a ≤ 1500 mm
	Cable type		
Dätwyler AG Kabel + Systeme	Pyrofil Keram (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30
	Pyrofil Keram (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30 q ≤ 25 kg/m	E30 q ≤ 25 kg/m
	Pyrofil Keram JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30 q ≤ 25 kg/m	E30 q ≤ 25 kg/m
Kabelwerk Eupen AG	Eucasafe (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E30
	Eucasafe (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30
	Eucasafe (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90	E90
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90
	Eucasafe JE-H(St)H... Bd FE180 E30 n x 2 x 0,8 mm	E30	E30
	Eucasafe JE-H(St)H... Bd FE180 E90 n x 2 x 0,8 mm	E90	E90
Studer Cables AG	BETAflam (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30 q ≤ 25 kg/m	E30 q ≤ 25 kg/m
	BETAflam (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E30	E30
	BETAflam JE-H(St)H... Bd FE180 E30 SIR n x 2 x 0,8 mm	E30 q ≤ 25 kg/m	E30 q ≤ 25 kg/m
	BETAflam JE-H(St)H... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30
	BETAflam JE-H(St)HRH... Bd FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30

2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

Cable Ladder

with rung spacing 150 mm and continuously perforated side profiles

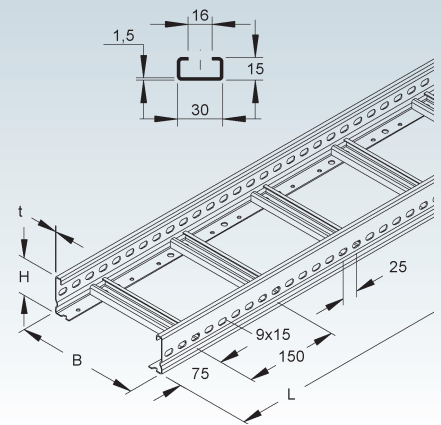
Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
E5 KL 60.215 E5	60	200	1,5	172580	321,78	6 m
E5 KL 60.315 E5	60	300	1,5	172597	372,93	6 m
E5 KL 60.415 E5	60	400	1,5	172627	424,07	6 m

Cable ladder length also available in 3 m (same price per meter).

Please order the necessary splice plates separately.

Requirement: 2 pieces KLVB 60/4 per joint

60

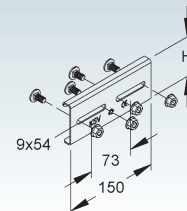


Splice Plate

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E5 KLVB 60/4 E5	60	4 SKM 8X16 E5	188215	22,58	20 pcs.

Requirement: 2 pieces per joint

60



Angle Connector

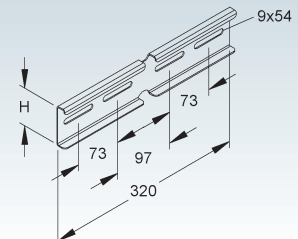
Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E5 KWV 60 E5	60	320	4 SKM 8X16 E5	730384	39,50	20 pcs.

for a form-fit connection of cable ladders and fittings with 60 mm edge height, aligned in longitudinal direction

Requirement: 2 pieces per joint

Equipotential bonding is achieved by screwing to the cable ladder and fitting beams.

60



Joint Connector

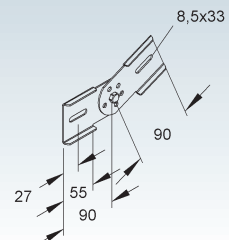
Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E5 KGV 60 E5	60	2 SKM 8X16 E5	730353	26,87	10 pcs.

for creating vertical angle connections of continuous cable ladders with 60 mm edge height

Requirement: 2 pieces per joint

Equipotential bonding is achieved by screwing to the cable ladder and fitting beams.

60



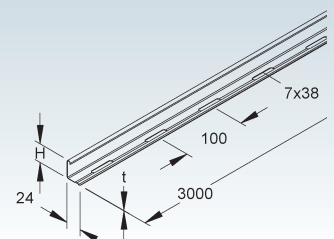
Barrier Strip

Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm				
E5 RW 35 E5	30	0,8	4 FLM 6X12 E5	082926	37,85	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.

35

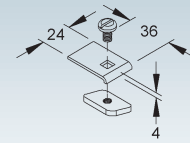


Barrier Strip Fastening Clamp

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 KLWC 16 E5	1 FK 6X10 E5, GSM 406 E5	945603	3,03	50 pcs.

for fastening barrier strips on cable ladder rungs with 16 mm slot width

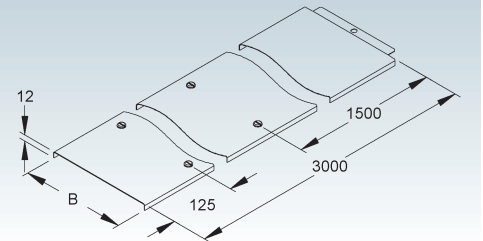
Insertable at any position in the profile slot.



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
E5 RDV 200 E5	202	891023	145,08	2 x 3 m
E5 RDV 300 E5	302	891047	208,07	2 x 3 m
E5 RDV 400 E5	402	891061	273,61	2 x 3 m



Overhead Hanger

U-profile

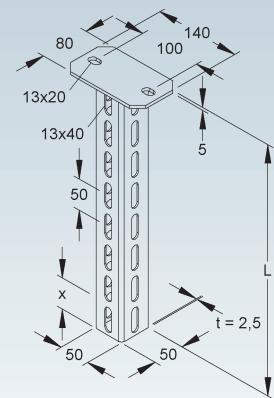
Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 HU 5050/300 E5	305	945702	108,47	1 pc.
E5 HU 5050/400 E5	405	945764	130,93	1 pc.
E5 HU 5050/500 E5	505	945771	153,38	1 pc.
E5 HU 5050/600 E5	605	945788	175,84	1 pc.
E5 HU 5050/700 E5	705	125166	198,29	1 pc.
E5 HU 5050/800 E5	805	965953	220,75	1 pc.
E5 HU 5050/900 E5	905	092567	243,20	1 pc.
E5 HU 5050/1000 E5	1005	965960	265,66	1 pc.
E5 HU 5050/1100 E5	1105	092642	284,09	1 pc.
E5 HU 5050/1200 E5	1205	113552	310,57	1 pc.

Total length = U profile length, included fixing plate.

Serie of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, overhead hanger-distance profile HDS 50.50 E5 must generally be used in circuit integrity maintenance.

Other lengths on request.



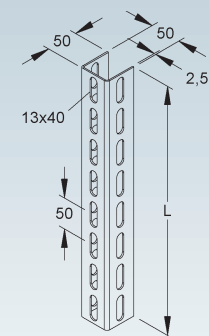
Profile U 5050

Model No.	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 U 5050/300 E5L	300	965977	67,37	1 pc.
E5 U 5050/400 E5L	400	965984	89,82	1 pc.
E5 U 5050/500 E5L	500	965991	112,28	1 pc.
E5 U 5050/600 E5L	600	966004	134,73	1 pc.
E5 U 5050/700 E5L	700	122097	157,19	1 pc.
E5 U 5050/800 E5L	800	966011	179,64	1 pc.
E5 U 5050/900 E5L	900	201341	202,10	1 pc.
E5 U 5050/1000 E5L	1000	966028	224,55	1 pc.
E5 U 5050/1100 E5L	1100	163946	242,98	1 pc.
E5 U 5050/1200 E5L	1200	153947	269,46	1 pc.

For mounting the brackets, overhead hanger-distance profile HDS 50.50 E5 must generally be used in circuit integrity maintenance.

Serie of oblong holes (13x40 mm) on 3 profile sides

Other lengths on request.

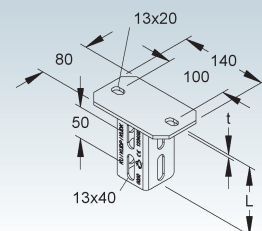


Screw Head Plate

Model No.	Total length L mm	Thickness of head plates (t) mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 KU 5050 E5	105	5	2 SKM 10X25 E5	967322	80,39	1 pc.

for mounting on straight ceilings

Three-sided slotted hole arrangement 13x40 mm in the connecting profile.



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

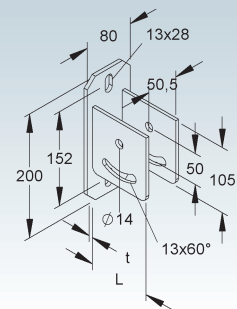
2.2 KFO Cable Ladder KL... E5 and Suspensions in E5

Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E5 KUGH 5050 E5	106	6	2 SKM 10X80 E5	105335	162,04	1 pc.

for mounting on sloping walls

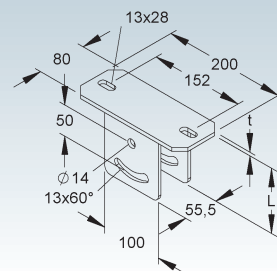


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

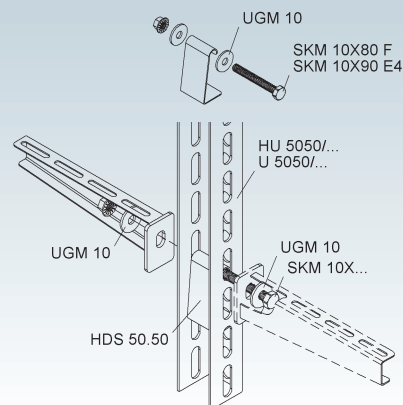
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E5 KUGV 5050 E5	111	6	2 SKM 10X80 E5	089215	162,04	1 pc.

for mounting on sloping walls



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 HDS 50.50 E5	1 SKM 10X90 E4, 2 UGM 10 E5	962266	16,37	50 pcs.



Overhead Hanger

U-profile

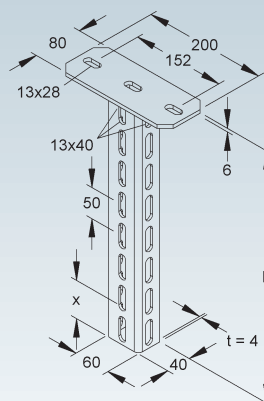
Model No.	Total length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
E5 HU 6040/300 E5	306	177257	163,64	1 pc.
E5 HU 6040/400 E5	406	189526	194,94	1 pc.
E5 HU 6040/500 E5	506	127825	226,24	1 pc.
E5 HU 6040/600 E5	606	121304	257,54	1 pc.
E5 HU 6040/700 E5	706	133277	288,84	1 pc.
E5 HU 6040/800 E5	806	201273	320,14	1 pc.
E5 HU 6040/900 E5	906	177752	351,44	1 pc.
E5 HU 6040/1000 E5	1006	093649	382,74	1 pc.
E5 HU 6040/1100 E5	1106	195947	414,04	1 pc.
E5 HU 6040/1200 E5	1206	175918	445,34	1 pc.

Total length = U profile length, included fixing plate.

Serie of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 E5 overhead hanger-distance profile must generally be used.

Other lengths on request.



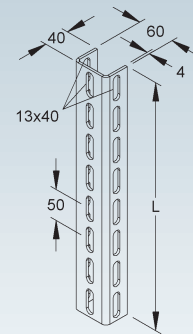
Profile U 6040

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
E5 U 6040/300 E5L	300	201327	93,90	1 pc.
E5 U 6040/400 E5L	400	086689	125,20	1 pc.
E5 U 6040/500 E5L	500	127870	156,50	1 pc.
E5 U 6040/600 E5L	600	086696	187,80	1 pc.
E5 U 6040/700 E5L	700	201310	219,09	1 pc.
E5 U 6040/800 E5L	800	201280	250,39	1 pc.
E5 U 6040/900 E5L	900	201297	281,69	1 pc.
E5 U 6040/1000 E5L	1000	116263	312,99	1 pc.
E5 U 6040/1100 E5L	1100	201334	344,29	1 pc.
E5 U 6040/1200 E5L	1200	160556	375,59	1 pc.

For mounting the brackets, in circuit integrity maintenance, the HDS 60.40 E5 overhead hanger-distance profile must generally be used.

Series of oblong holes (13x40 mm) on 3 profile sides.

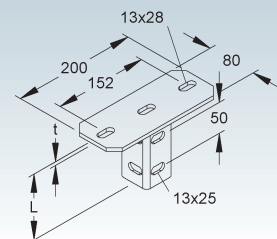
Other lengths on request.



Screw Head Plate

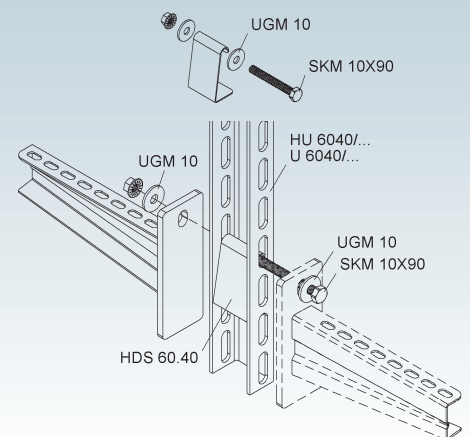
Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E5 KU 6040 E5	106	6	2 SKM 10X25 E5	171699	111,58	1 pc.

for mounting on straight ceilings



Overhead Hanger-Distance Profile

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 HDS 60.40 E5	1 SKM 10X90 E4, 2 UGM 10 E5	201358	17,50	50 pcs.



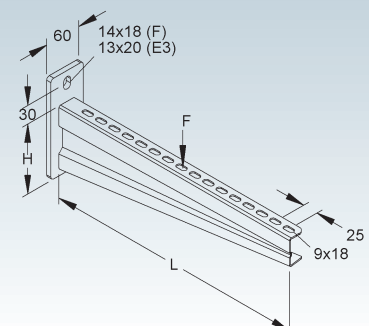
Overhead Hanger- and Wall Bracket

heavy

Model No.	Height H	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm			
E5 KTAS 200 E5	113	230	143832	100,32	1 pc.
E5 KTAS 300 E5	113	330	142972	120,93	1 pc.
E5 KTAS 400 E5	113	430	106844	143,69	1 pc.

Please order the necessary fastening accessories separately for cable ladders.

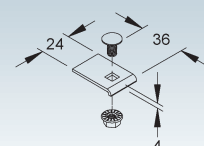
Requirement: 2 pieces KLTB 6 E5 per bracket



Cable Ladder Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 KLTB 6 E5	1 FLM 6X12 E5	730407	2,40	50 pcs.

Clamping piece for fastening the cable ladders on brackets



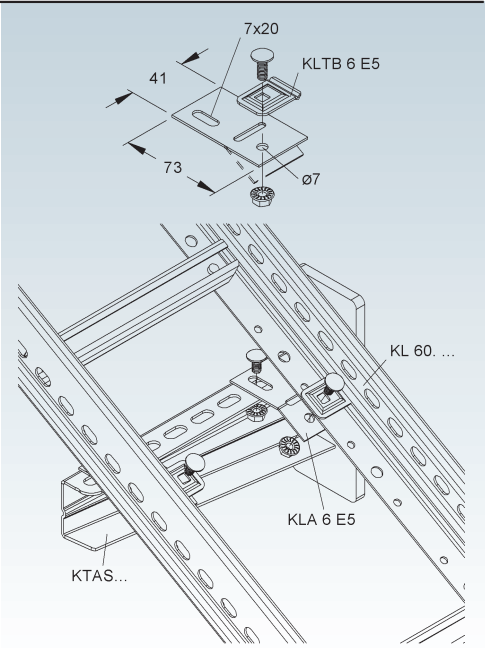
Cable Tray Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E5 KLA 6 E5	1 FLM 6X12 E5, 1 KLTB 6 E5	188468	5,44	25 pcs.

for fastening cable ladders running at an angle to the bracket

Requirement: 2 pieces per bracket

By bending the fastening tongue by hand, the cable tray fastening is adapted to the gradient angle.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

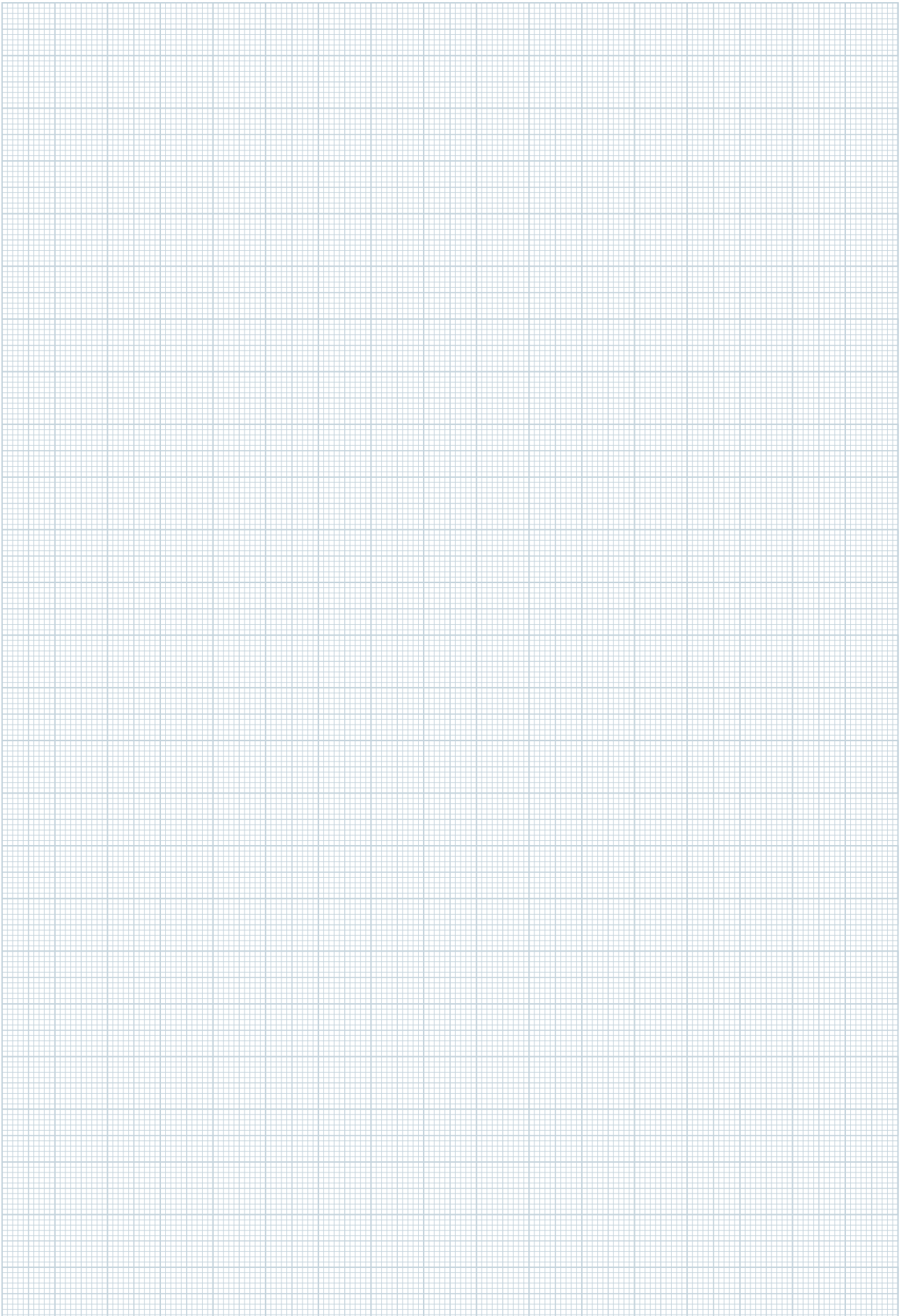
		Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein	Tel: +49 (0) 2644/5606-0 www.niedax.com
Kabelanlage E _____ gemäß DIN 4102-12 			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
			ACHTUNG! Trasse nur für elektrischen Funktionserhalt 

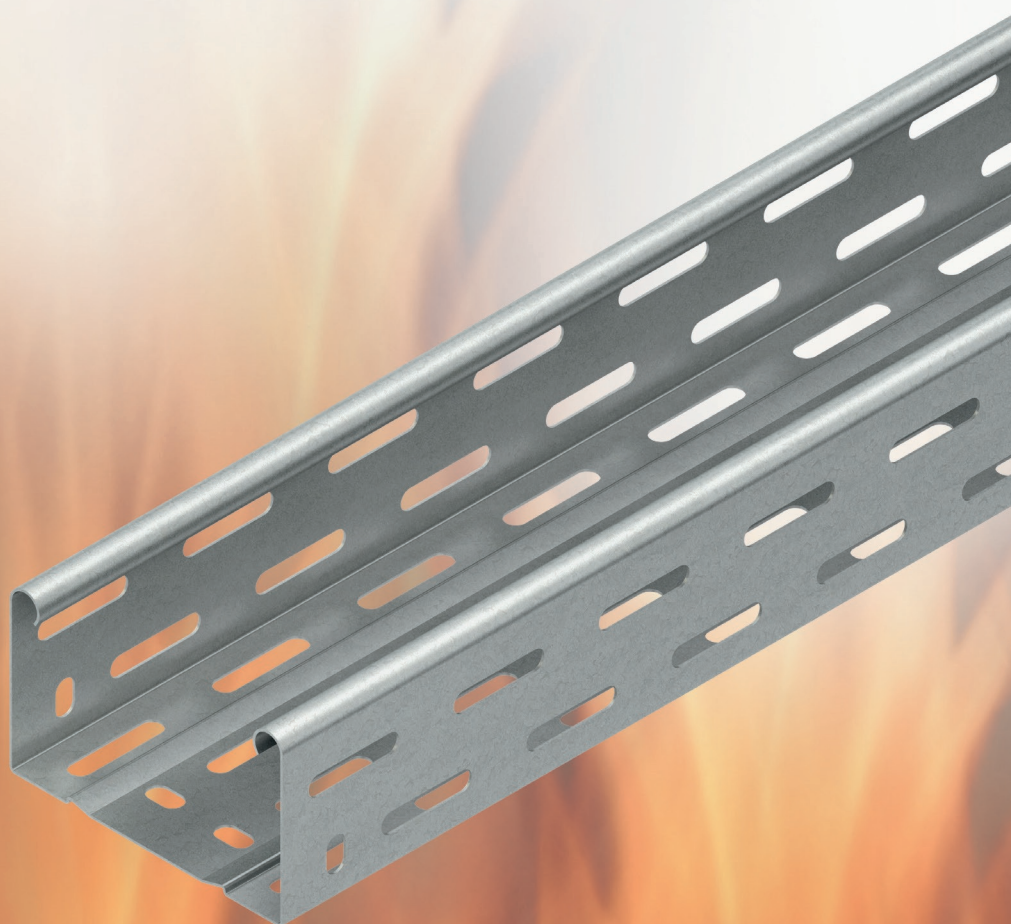
For further installation systems in stainless steel such as vertical cable ladders, U-clamps and screw distance clamps, see chapter "3 Standard Support Construction".

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NOTES





2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.3 Cable Tray RLC... E3 and Suspensions in E3

This E30 - E90 circuit integrity maintenance installation system made of stainless steel of corrosion protection classes C II according to EN 1993-1-4 meets the needs of industries with increased hygiene requirements such as the beverage, food, pharmaceutical or cosmetics industries.

A practice-oriented range of accessories of corrosion

protection class C II enables fast and smooth installation in almost any structural situation.

The well-known advantages such as high loads, large fastening spacings and a wide range of cable manufacturers and types are self-evident.

Support span $a \leq 1,5 \text{ m}$
Cable load $q \leq 10 \text{ kg/m}$

For this installation system for circuit integrity maintenance in E30 - E90 according to DIN 4102 Part 12, cable trays RLC... E3 with an rail height of 60 mm in widths of 100, 200 and 300 mm in stainless steel quality 1.4301 (E3) are used. Two lengths are connected using the splice plate RVC 60/2 E3 and the joint bar RSLC ... E3, each with 4 mushroom-head bolts FLM 6X12 E3.

With the fittings and the connectors (from  114), any horizontal and vertical changes of direction can be realised on site. All changes of direction must be supported by an appropriate supporting structure in the immediate vicinity of the joint (distance $\leq 150 \text{ mm}$).

In the case of horizontal routing with height offsets, the cable tray running at an angle must be fastened to the bracket KTAW ... E3 using cable tray fasteners KLAF 6 E3. In doing so, the fastening plate of the KLAF 6 E3 can be adapted to any slope angle by bending it by hand. To protect the cables, the cable tray ends must be provided with edge protection plate RKB ... E3.

If RDV ... E3 covers and RTADV ... E3 and RESDV ... E3 fitting covers are used, the max. permissible cable weight must be reduced by the weight of the cover.

For ceiling installations, TAH ... E3 ceiling suspension with suspension lengths of 200, 400 or 600 mm are available for cable trays of widths 100 - 300 mm in stainless steel quality 1.4301 (E3).

For wall mounting the brackets KTAW 100... E3 to KTAW 350 E3 are used. The bracket length may be max. 50 mm greater than the cable tray width.

2.3 Cable Tray RLC... E3 and Suspensions in E3

The suspension construction

consists for the:

single-layer suspension made of **TAH-A ... E3** or **TAH-B ... E3**

and for

two-layer suspension **TAH-D ... E3** or **TAH-E ... E3**

Other suspension lengths and variants for installation on slopes are available on request.

Please order the screws for fastening the channel to the suspensions (2 FLM 6X12 E3 per layer) separately.

Fittings must be supported in the immediate vicinity of the joints by an appropriate supporting structure.

The fastening

of the suspension construction is carried out with:

building authority approved dowel $\geq M 8$

The material requirement

of the suspension construction per suspension unit:

Designation	Model No.	
Suspension	TAH-A... E3 resp. TAH-B... E3	1
Mushroom-head bolt	FLM 6X12 E3	2
Dowel	M8	2

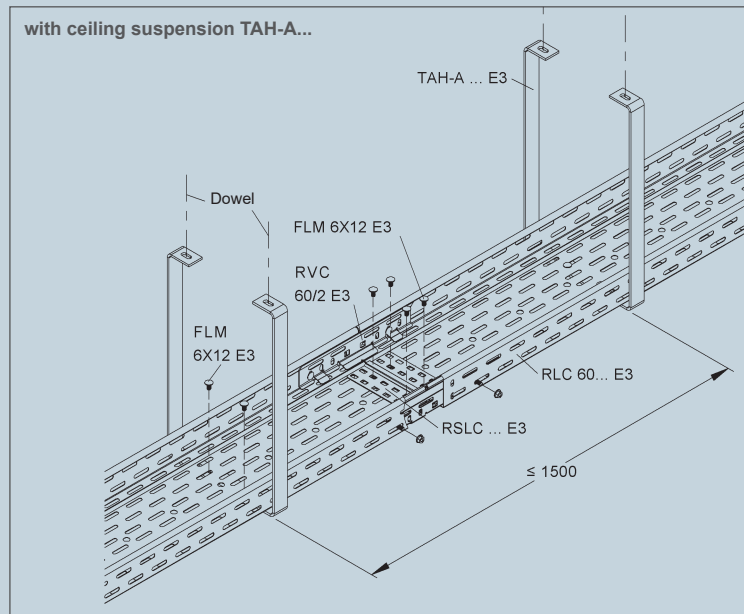
Designation	Model No.	
Suspension	TAH-D... E3 resp. TAH-E... E3	1
Mushroom-head bolt	FLM 6X12 E3	4
Dowel	M8	2

Other suspension variants on request!

Ceiling mounting



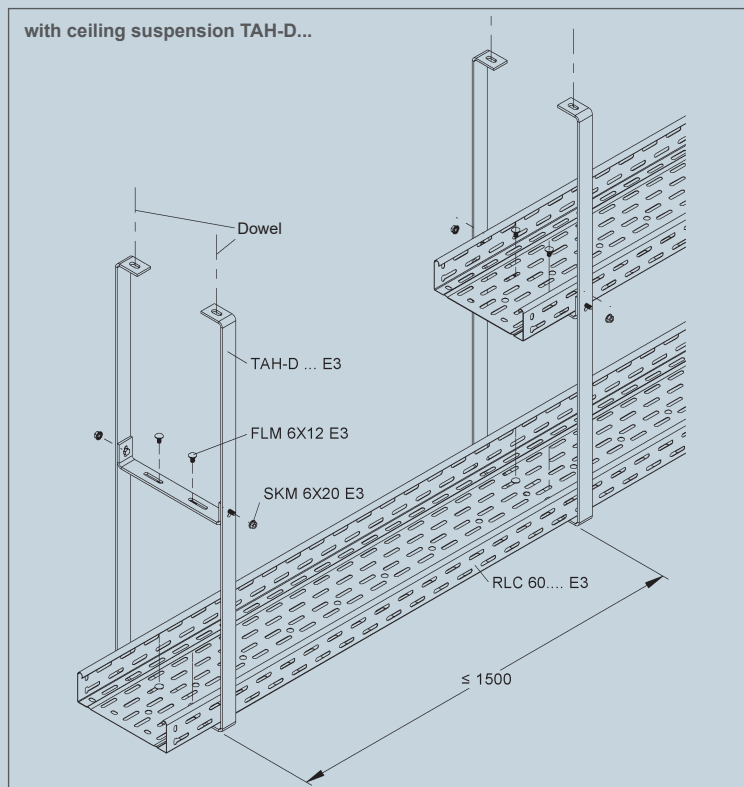
Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span a ≤ 1.5 m . Cable load q ≤ 10 kg/m



Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RLC 60.100 E3 OV - RLC 60.300 E3 OV) are used for ceiling installation. The connection of two cable trays RLC 60... is made via the splice plates RVC 60/2 E3 (2 FLM 6X12 E3 per splice plate) and the joint bar RSLC... (4 FLM 6X12 E3). The cable trays are fixed to the suspension or intermediate layer with 2 mushroom-head bolts (FLM 6X12 E3).

Other suspension lengths and variants for sloping ceilings on request.

The designs and instructions can be found in the "German classification report for electric cable systems with circuit integrity maintenance" stainless steel installation system.



2.3 Cable Tray RLC... E3 and Suspensions in E3

The wall mounting

consists of:
Wall brackets **KTAW 100 - 350... E3**

Please order the screws for fixing the channel to the brackets (2 FLM 6X12 E5 per bracket) separately.

The fastening

to the wall with:
Building authority approved dowel $\geq$ M 8

The material requirement

of the wall fastening per suspension unit:

Designation	Model No.	
Overhead hanger- and wall bracket	KTAW 100 - 350 E3	1
Mushroom-head bolt	FLM 6X12 E3	2
Dowels for RLC 60.100 E3 - RLC 60.400 E3	M8	1

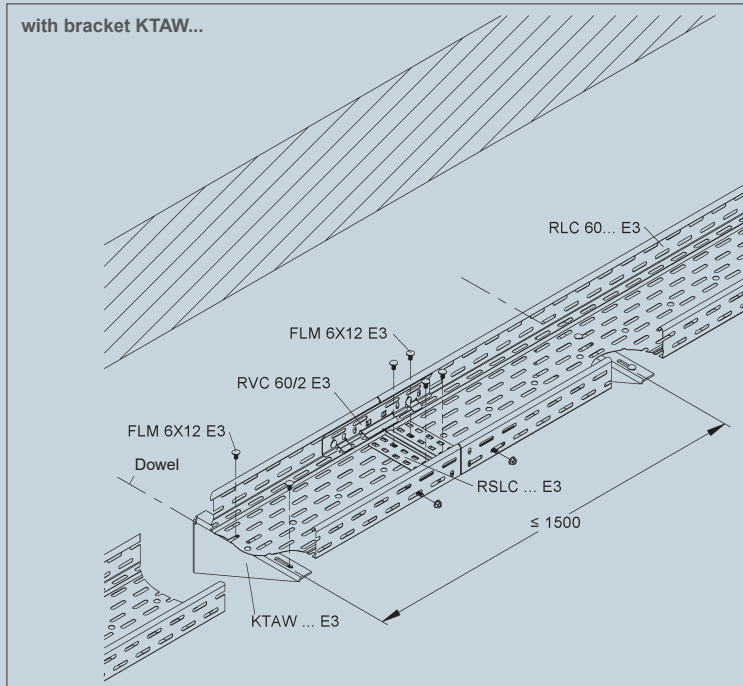
Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256



Wall mounting



Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support spacing $a \leq 1.5$ m . Cable load $q \leq 10$ kg/m

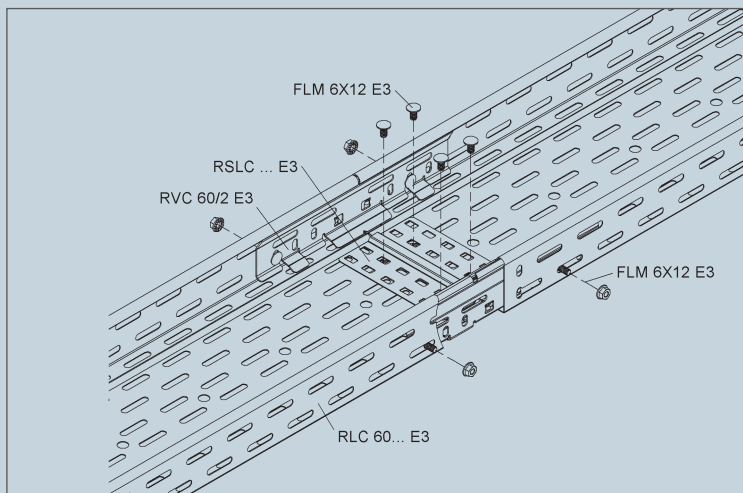


Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RLC 60.100 E3 OV - RLC 60.300 E3 OV) are used for wall mounting. The connection of two cable trays RLC 60... is made via the splice plate RVC 60/2 E3 (per splice plate 2 FLM 6X12 E3) and the joint bar RSLC... (4 FLM 6X12 E3).

The cable trays are mounted on the brackets KTAW ... with 2 mushroom-head bolts (FLM 6X12 E3).

The designs and instructions can be found in the "German classification report for electric cable systems with circuit integrity maintenance" stainless steel installation system.

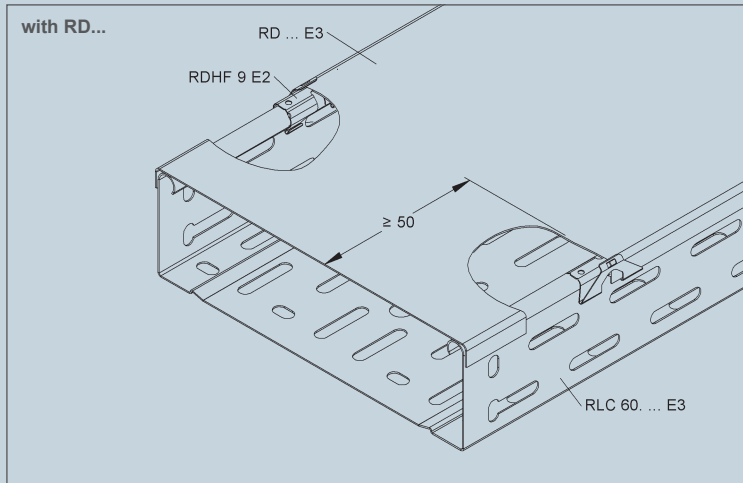
Structure of a joint connection



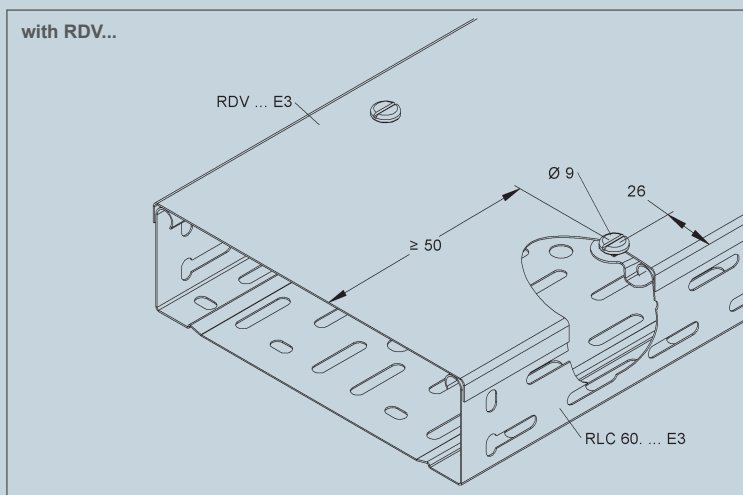
The joint connection is made using the two splice plates RVC 60/2 E3 and two mushroom-head bolts FLM 6X12 E3 each as well as the joint bar RSLC... and four mushroom-head bolts FLM 6X12 E3.

2.3 Cable Tray RLC... E3 and Suspensions in E3

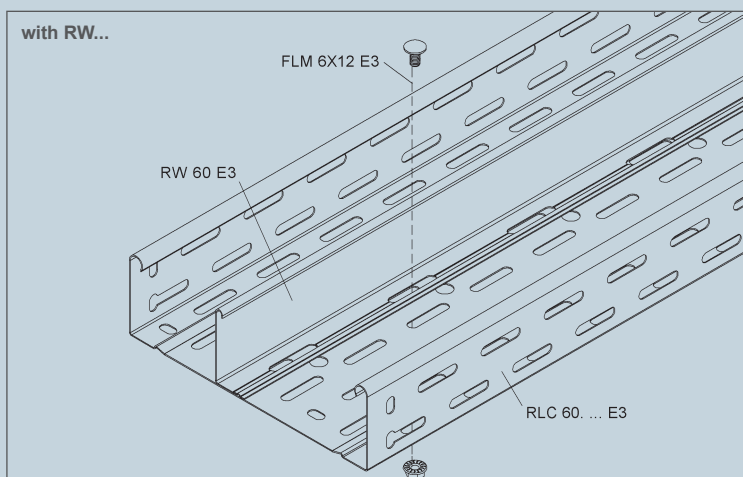
Cover fastening



If RDV ... E3 covers and RTADV ... E3, RBADV ... E3, RESDV ... E3 and RTS-DV ... E3 fitting covers are used, the max. permissible cable weight must be reduced by the weight of the cover.



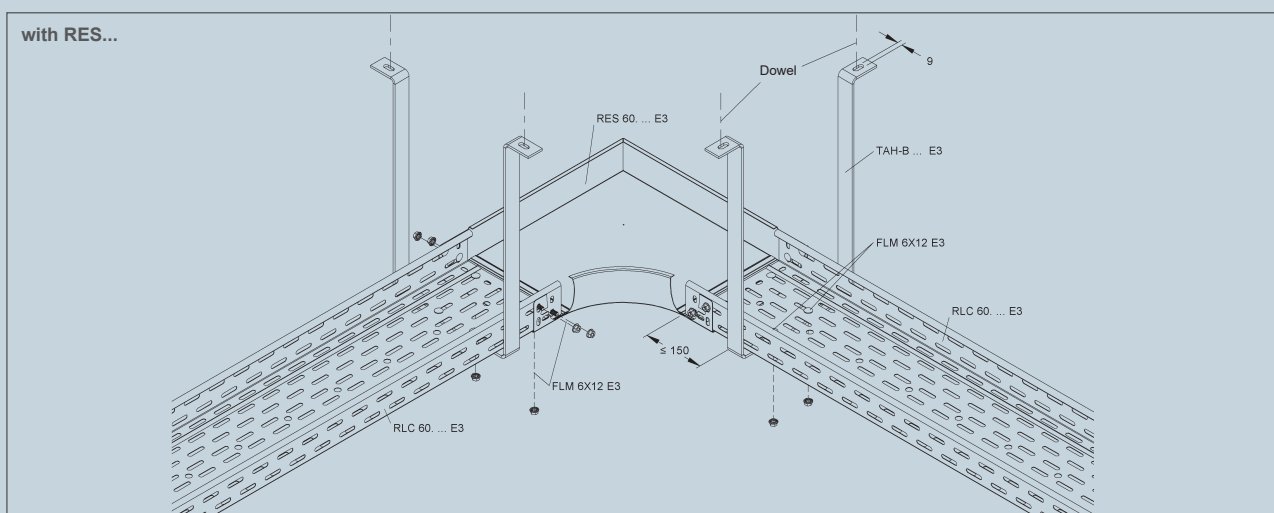
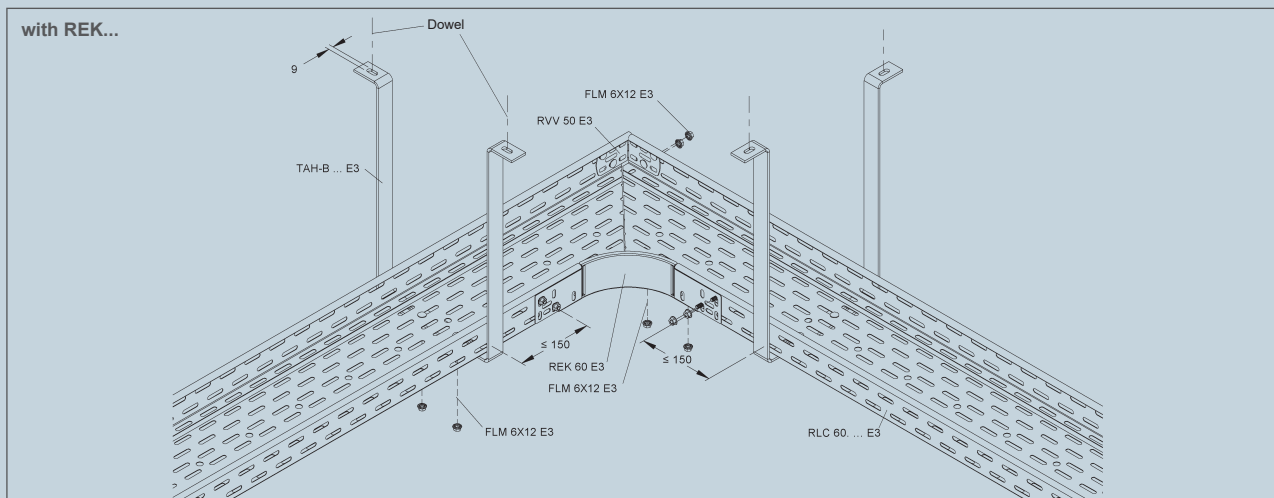
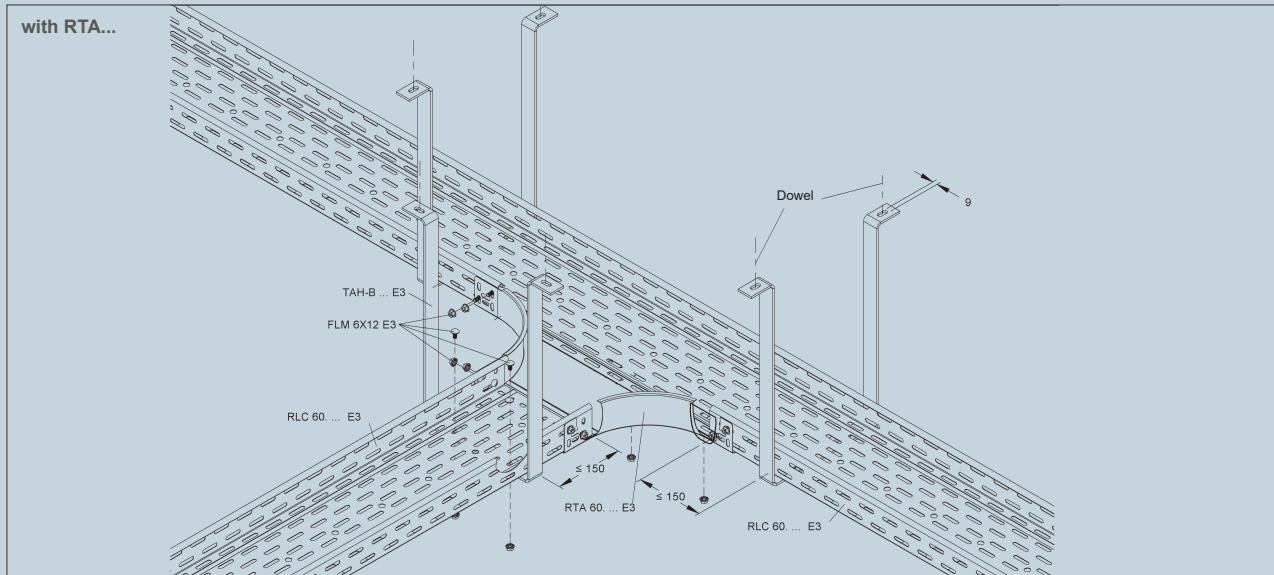
Barrier strip assembly



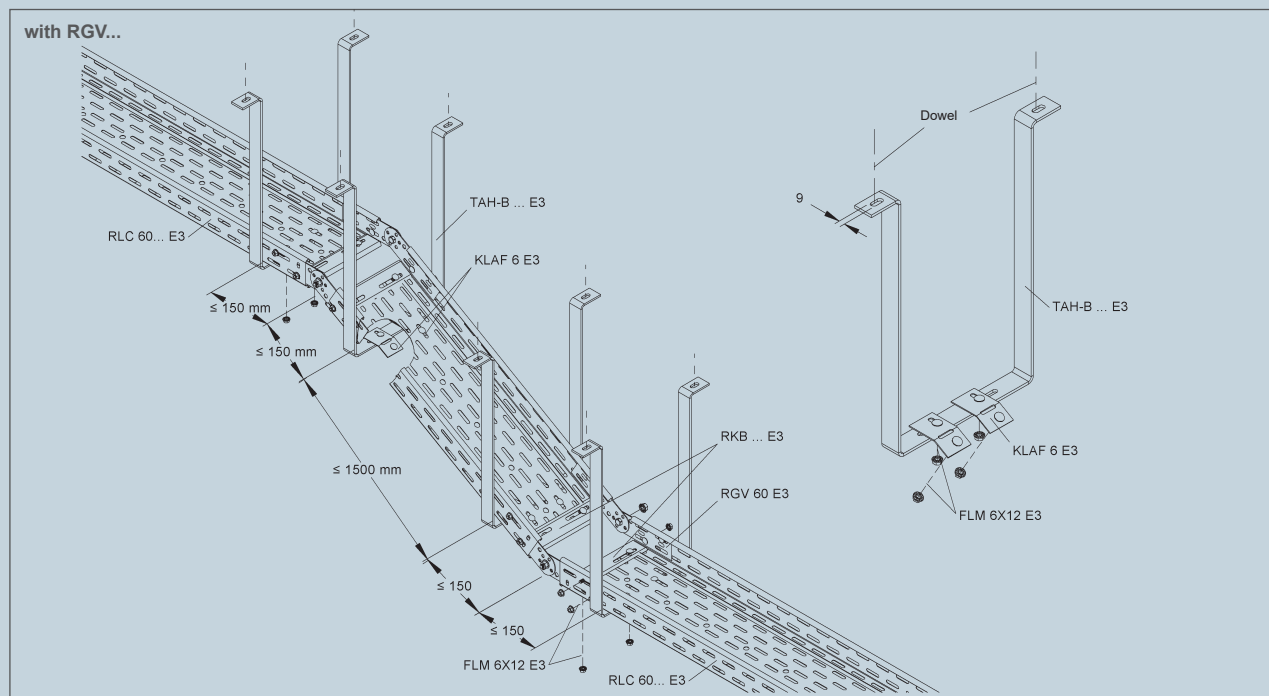
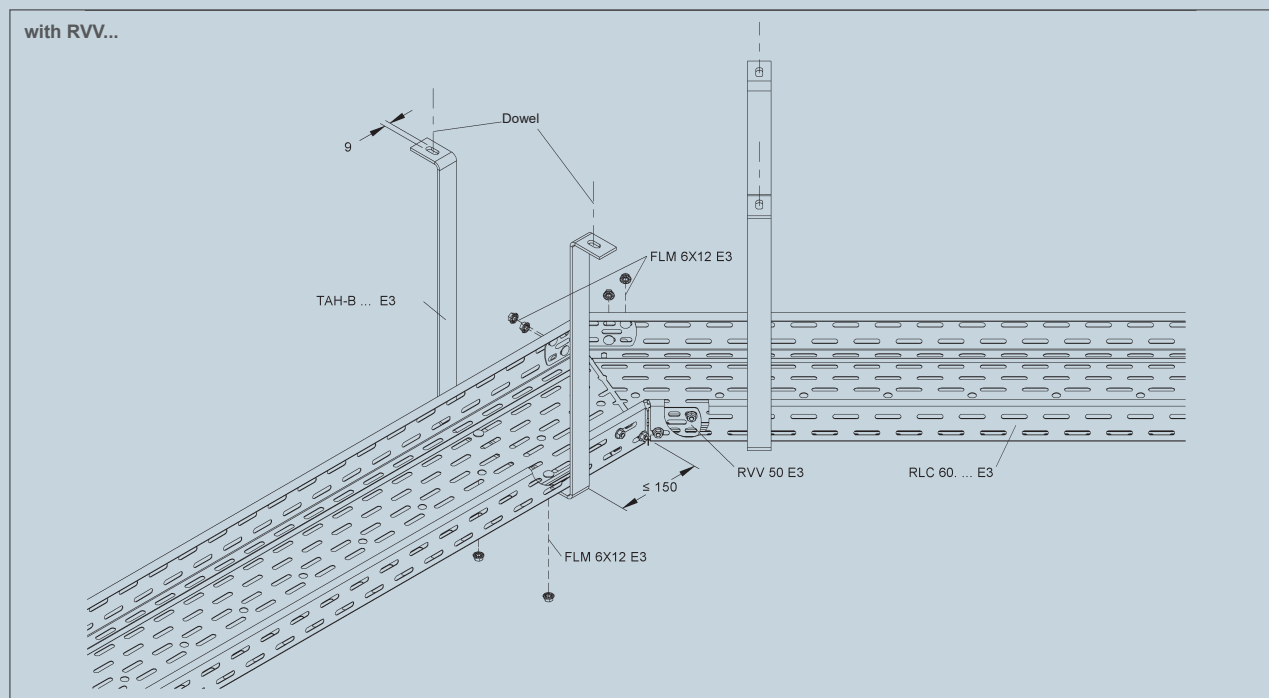
To avoid overlapping of fire resistance cables and the general power supply in case of mixed installation, a barrier strip RW 60 E3 can be used.



Overhead hanger and wall mounting of fittings for KFO RLC... E3



Overhead hanger and wall mounting of fittings for KFO RLC... E3



Classifications

The tables show the status at the time of printing! You will find the current status as well as supplemented tables regarding other manufacturers, cables or other systems in the download area on our homepage www.niedax.com.

Manufacturer	Cable installation type	Ceiling mounting Ceiling suspension TAH - ... E3 B ≤ 300 mm q ≤ 10 kg/m a ≤ 1500 mm	Wall mounting Bracket KTAW... E3 B ≤ 300 mm q ≤ 10 kg/m a ≤ 1500 mm
	Cable type		
Dätwyler AG Kabel + Systeme	Pyrofil Keram (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E60	E60
	Pyrofil Keram (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E60	E60
	Pyrofil Keram (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90	E90
	Pyrofil Keram (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	-	E90
	Pyrofil Keram JE-H(St)H... FE180 E30 - E90 n x 2 x 0,8 mm	E60	E60
	Pyrofil Keram JE-H(St)HRH... FE180 E30 - E90 n x 2 x 0,8 mm	E30	E30
Kabelwerk Eupen AG	Eucasafe (N)HXH-J FE180 E30 n x ≥ 1,5 mm ²	E60	E60
	Eucasafe (N)HXCH... FE180 E30 n x ≥ 1,5/1,5 mm ²	E30 n x ≥ 16/16	-
	Eucasafe (N)HXH-J FE180 E90 n x ≥ 1,5 mm ²	E90	E90
	Eucasafe (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90
	Eucasafe JE-H(St)H... FE180 E30 n x 2 x 0,8 mm	E30	E30
	Eucasafe JE-H(St)H... FE180 E90 n x 2 x 0,8 mm	E90	E90
PRYSMIAN Kabel + Systeme GmbH	Sienopyr (N)HXH... FE180 E30 - E60 n x ≥ 1,5 mm ²	E30	E60
	Sienopyr (N)HXCH... FE180 E30 - E60 n x ≥ 1,5/1,5 mm ²	E60	E60
	Sienopyr (N)HXH... FE180 E90 n x ≥ 1,5 mm ²	E90	E90
	Sienopyr (N)HXCH... FE180 E90 n x ≥ 1,5/1,5 mm ²	E90	E90
	Sienopyr JE-H(St)H... FE180 E30 n x 2 x 0,8 mm	E60	E60

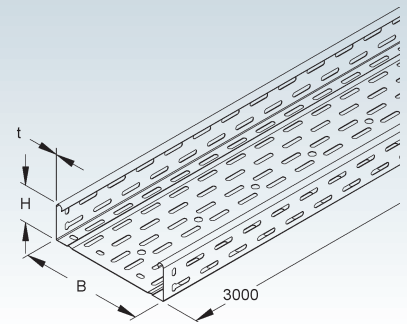
Cable Tray

perforated, splice plate not included

Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
E3 RLC 60.100 E3 OV	60	100	0,8	113279	135,95	2 x 3 m
E3 RLC 60.200 E3 OV	60	200	0,8	113286	188,69	2 x 3 m
E3 RLC 60.300 E3 OV	60	300	0,8	113293	241,42	2 x 3 m

2 splice plates RVC 60/2 E3 and 1 joint bar RSLC... please order separately for each joint.

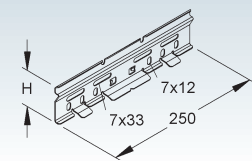
60



Splice Plate

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E3 RVC 60/2 E3	60	2 FLM 6X12 E3	113316	18,89	20 pcs.

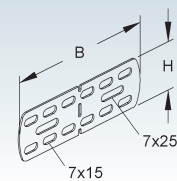
Requirement: 2 pieces per joint



Universal-Splice Plate

Model No.	Height H	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E3 RVV 50 E3	44	135	4 FLM 6X12 E3	335404	8,77	20 pcs.

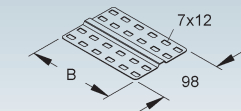
50



Joint Bar

Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E3 RSLC 100 E3	41,5	4 FLM 6X12 E3	116393	5,75	10 pcs.
E3 RSLC 200 E3	139	4 FLM 6X12 E3	116416	11,86	10 pcs.
E3 RSLC 300 E3	239	4 FLM 6X12 E3	116423	18,14	10 pcs.

Requirement: 1 piece per joint



Joint Connector

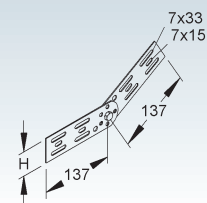
vertical

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E3 RGV 60 E3	47	4 FLM 6X12 E3	335008	14,54	20 pcs.

for simple on-site creation of height offsets in horizontal cable systems

Requirement: 2 pieces per joint

60

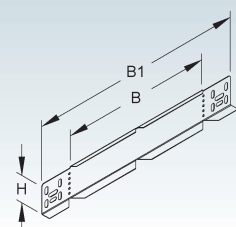


Reducing-/End-/Angle Piece

Model No.	Height H	Width B	Width B1	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
E3 RAW 60.100 E3	60	100	222	4 FLM 6X12 E3	845309	12,64	20 pcs.
E3 RAW 60.300 E3	60	300	422	4 FLM 6X12 E3	845385	23,03	20 pcs.

for creating horizontal changes of direction for terminating cable tray ends and for reducing and extending continuous cable trays

60

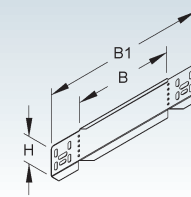


Reducing-/End Piece

Model No.	Height H	Width B	Width B1	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
E3 RA 60.200 E3	60	200	322	4 FLM 6X12 E3	845347	18,00	20 pcs.

for terminating cable tray ends and for reducing and extending continuous cable trays

60

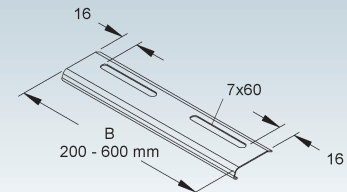


Edge Protection Plate

with rounded edges

Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E3 RKB 100 E3	92	1 FLM 6X12 E3	335503	4,32	10 pcs.
E3 RKB 200 E3	192	2 FLM 6X12 E3	335602	8,98	10 pcs.
E3 RKB 300 E3	292	2 FLM 6X12 E3	335701	13,14	10 pcs.

to reinforce the cable tray bottom to protect the cables at the joint



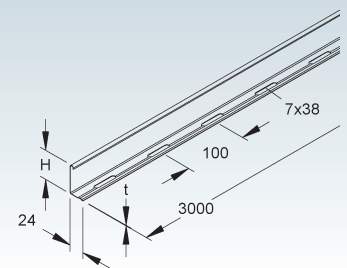
Barrier Strip

Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm				
E3 RW 50 E3	47	0,8	4 FLM 6X12 E3	333356	48,88	10 x 3 m
E3 RW 60 E3	55	0,8	4 FLM 6X12 E3	333400	53,97	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.

50 60



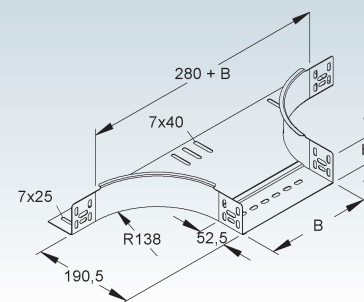
Extension T-Piece

with unperforated side profiles, but with connector perforations, with integrated splice plates

Model No.	Height H	Inside dimensions width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
E3 RTA 60.100 E3	60	102	10 FLM 6X12 E3	333608	67,92	1 pc.
E3 RTA 60.200 E3	60	202	10 FLM 6X12 E3	333707	82,59	1 pc.
E3 RTA 60.300 E3	60	302	10 FLM 6X12 E3	333806	97,61	1 pc.

for the production of horizontal 90° T-outlets of cable trays of different as well as equal widths

60



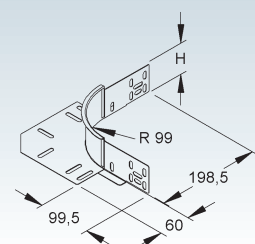
Extension Elbow

with unperforated side profile, but with connector perforations, with integrated splice plates, with continuous cable support through overlapping base plate

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm				
E3 REK 60 E3	60	6 FLM 6X12 E3	334803	30,66	10 pcs.

for creating horizontal 90° elbow and T-connections of cable trays

60



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.3 Cable Tray RLC... E3 and Suspensions in E3

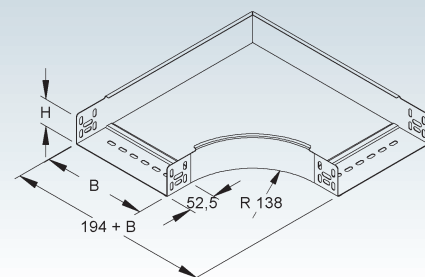
Elbow 90°

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	RES 60.100 E3	60	102	4 FLM 6X12 E3	333561	79,34	1 pc.
E3	RES 60.200 E3	60	202	5 FLM 6X12 E3	333578	132,52	1 pc.
E3	RES 60.300 E3	60	302	5 FLM 6X12 E3	333585	197,37	1 pc.

for creating horizontal 90° corner joints

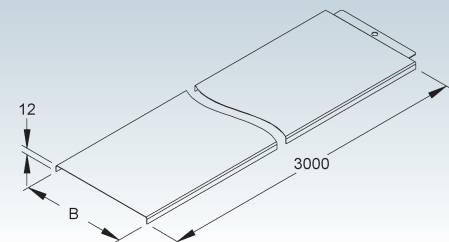
60



Cover for Cable Tray/-Ladder

with joint strip

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
E3	RD 100 E3	102	336203	78,60	2 x 3 m
E3	RD 200 E3	202	336302	142,23	2 x 3 m
E3	RD 300 E3	302	336401	204,60	2 x 3 m



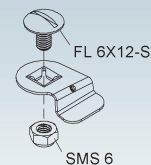
Turning Bolt

incl. locking nut acc. to DIN EN ISO 10511

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	RDRS 9 E3	1 FL 6X12-S E3, 1 SMS 6 E3	337705	1,60	20 pcs.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

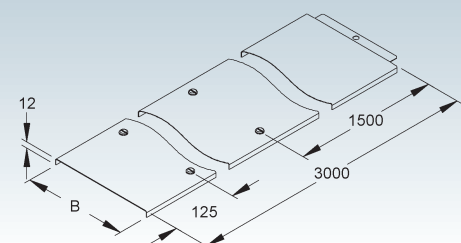
Delivery unassembled loose



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
E3	RDV 100 E3	102	336906	80,01	2 x 3 m
E3	RDV 200 E3	202	337002	143,64	2 x 3 m
E3	RDV 300 E3	302	337101	207,26	2 x 3 m



Cover Clamp

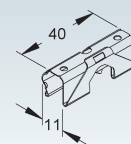
	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E2	RDHF 9 E2	920457	0,47	60 pcs.

for fastening cable tray covers without twist-lock fastener

For additional requirements.

The cover clamp is designed for the horizontal position of the cover.

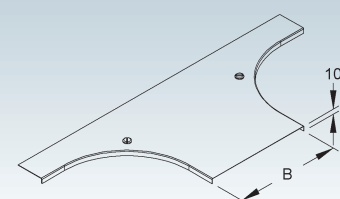
It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.



Cover for Extension T-Piece

with pre-assembled turning lock fasteners

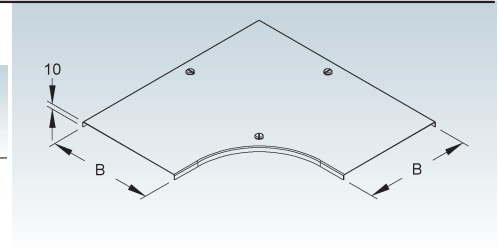
	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	RTADV 100 E3	104	339600	39,61	1 pc.
E3	RTADV 200 E3	204	339709	55,03	1 pc.
E3	RTADV 300 E3	304	339808	70,45	1 pc.



Cover for Elbow 90°

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	RESDV 100 E3	104	338405	42,80	1 pc.
E3	RESDV 200 E3	204	338504	87,54	1 pc.
E3	RESDV 300 E3	304	338603	144,91	1 pc.



Ceiling Suspension, single-layer

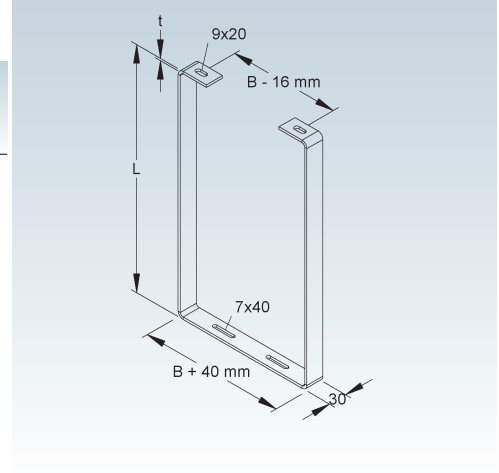
C-bracket

	Model No.	Width B mm	Length L mm	Material thickness (t) mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	TAH-A 100/200 E3	100	200	4	118793	55,76	1 pc.
E3	TAH-A 100/400 E3	100	400	4	118816	93,68	1 pc.
E3	TAH-A 100/600 E3	100	600	4	118823	131,60	1 pc.
E3	TAH-A 200/200 E3	200	200	4	118830	65,24	1 pc.
E3	TAH-A 200/400 E3	200	400	4	118847	103,16	1 pc.
E3	TAH-A 200/600 E3	200	600	4	118854	141,08	1 pc.
E3	TAH-A 300/200 E3	300	200	4	118861	74,72	1 pc.
E3	TAH-A 300/400 E3	300	400	4	118878	112,64	1 pc.
E3	TAH-A 300/600 E3	300	600	4	118885	150,56	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E3 per suspension



Ceiling Suspension, single-layer

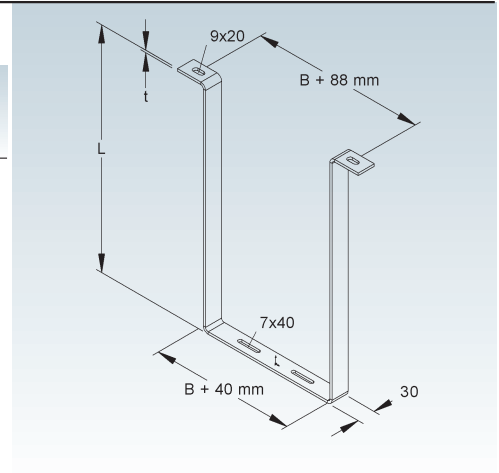
C-bracket

	Model No.	Width B mm	Length L mm	Material thickness (t) mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	TAH-B 100/200 E3	100	200	4	118892	55,76	1 pc.
E3	TAH-B 100/400 E3	100	400	4	118915	93,68	1 pc.
E3	TAH-B 100/600 E3	100	600	4	118922	131,60	1 pc.
E3	TAH-B 200/200 E3	200	200	4	118939	65,24	1 pc.
E3	TAH-B 200/400 E3	200	400	4	118946	103,16	1 pc.
E3	TAH-B 200/600 E3	200	600	4	118953	141,08	1 pc.
E3	TAH-B 300/200 E3	300	200	4	118960	74,72	1 pc.
E3	TAH-B 300/400 E3	300	400	4	118977	112,64	1 pc.
E3	TAH-B 300/600 E3	300	600	4	118984	150,56	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E3 per suspension



Ceiling Suspension, two-layer

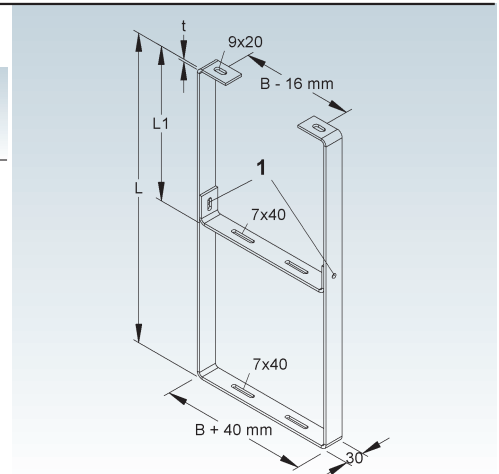
C-bracket with intermediate layer

	Model No.	Width B mm	Total length L mm	length L1 mm	Material thickness (t) mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	TAH-D 100/500/250 E3	100	500	250	4	119035	129,67	1 pc.
E3	TAH-D 100/800/400 E3	100	800	400	4	119042	186,55	1 pc.
E3	TAH-D 200/500/250 E3	200	500	250	4	119059	148,55	1 pc.
E3	TAH-D 200/800/400 E3	200	800	400	4	119066	205,43	1 pc.
E3	TAH-D 300/500/250 E3	300	500	250	4	119073	167,51	1 pc.
E3	TAH-D 300/800/400 E3	300	800	400	4	119080	224,39	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E3 per suspension



2 CABLE-SPECIFIC STAINLESS STEEL INSTALLATION SYSTEMS

2.3 Cable Tray RLC... E3 and Suspensions in E3

Ceiling Suspension, two-layer

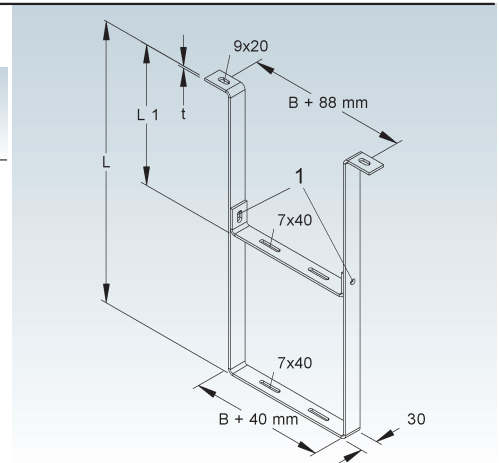
C-bracket with intermediate layer

	Model No.	Width B	Total length L	length L1	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm			
E3	TAH-E 100/500/250 E3	100	500	250	4	119165	129,67	1 pc.
E3	TAH-E 100/800/400 E3	100	800	400	4	119172	186,55	1 pc.
E3	TAH-E 200/500/250 E3	200	500	250	4	119189	148,55	1 pc.
E3	TAH-E 200/800/400 E3	200	800	400	4	119196	205,43	1 pc.
E3	TAH-E 300/500/250 E3	300	500	250	4	119219	167,51	1 pc.
E3	TAH-E 300/800/400 E3	300	800	400	4	119226	224,39	1 pc.

Different suspension lengths and variants for installation on slopes on request.

Please order the necessary fastening accessories separately for cable trays.

Requirement: 2 FLM 6X12 E3 per suspension

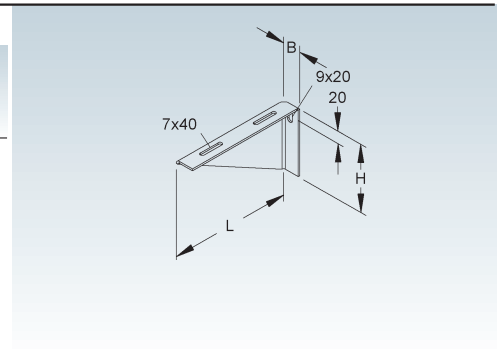


Wall Bracket

	Model No.	Height H	Width B	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm			
E3	KTAW 100 E3	110	30	100	130573	24,62	1 pc.
E3	KTAW 150 E3	110	30	150	130580	34,46	1 pc.
E3	KTAW 200 E3	110	30	200	130597	44,31	1 pc.
E3	KTAW 250 E3	110	30	250	130610	54,15	1 pc.
E3	KTAW 300 E3	140	30	300	130627	76,65	1 pc.
E3	KTAW 350 E3	140	30	350	130634	88,28	1 pc.

Please order the necessary fastening accessories separately for cable trays.

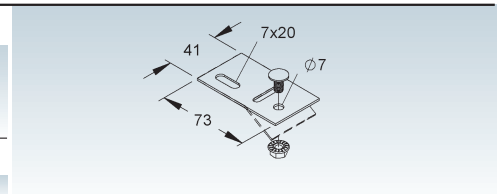
Requirement: 2 FLM 6X12 E3 per suspension



Cable Tray Fastening

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E3	KLAF 6 E3	1 FLM 6X12 E3	188451	4,06	25 pcs.

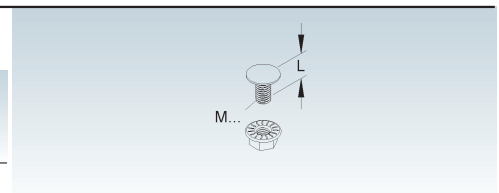
for fastening vertical cable trays to the bracket



Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

	Model No.	Thread M	Length L	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
			mm				
E3	FLM 6X12 E3	6	12	1.4301	343805	0,82	50 pcs.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

	Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
	HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

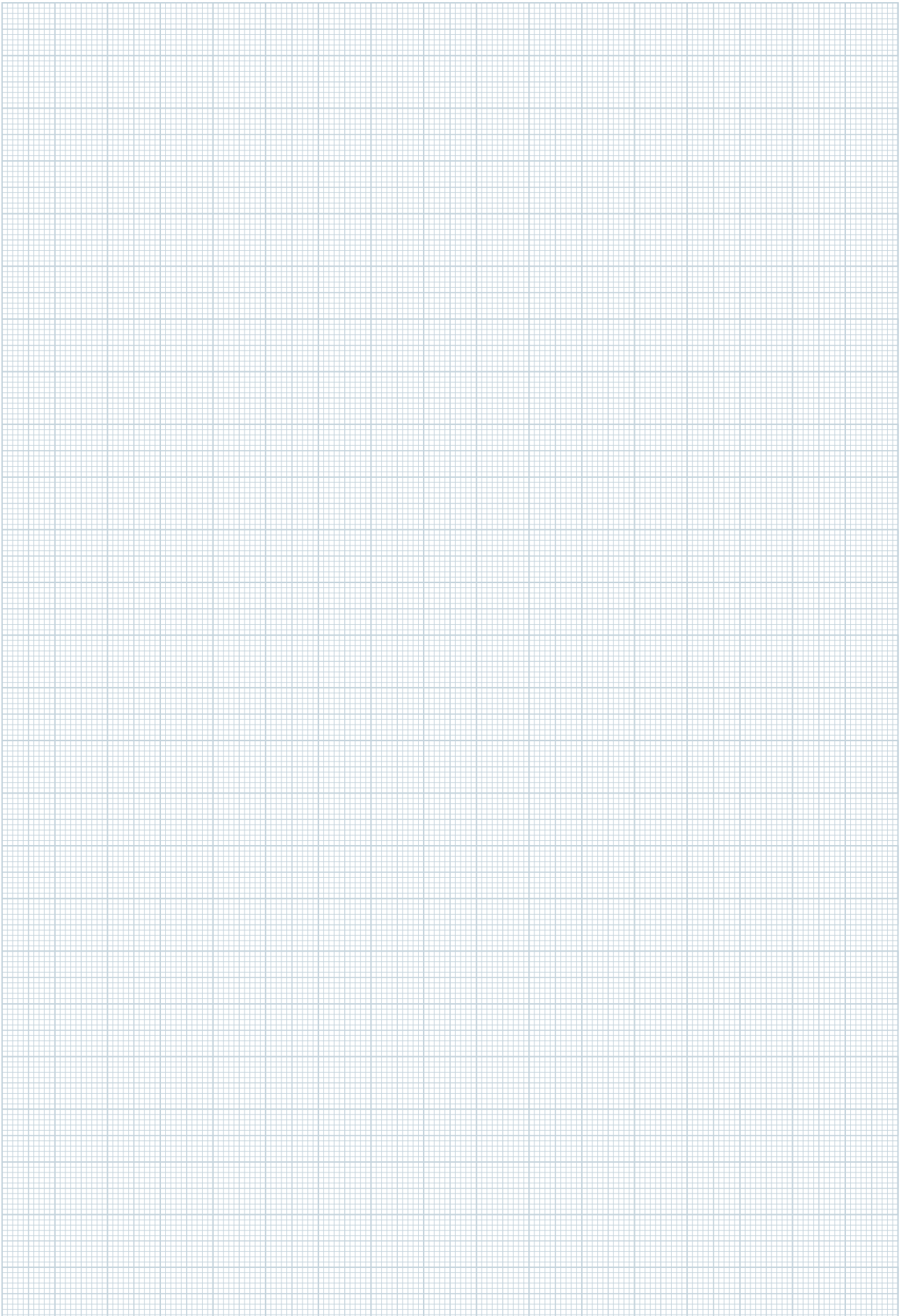
Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein Tel: +49 (0) 2644/5606-0 www.niedax.com		ACHTUNG! Trasse nur für elektrischen Funktionserhalt
Kabelanlage E _____ gemäß DIN 4102-12		
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		

For further installation systems in stainless steel such as vertical cable ladders, U-clamps and screw distance clamps, see chapter "3 Standard Support Construction".

➔ 120



NOTES

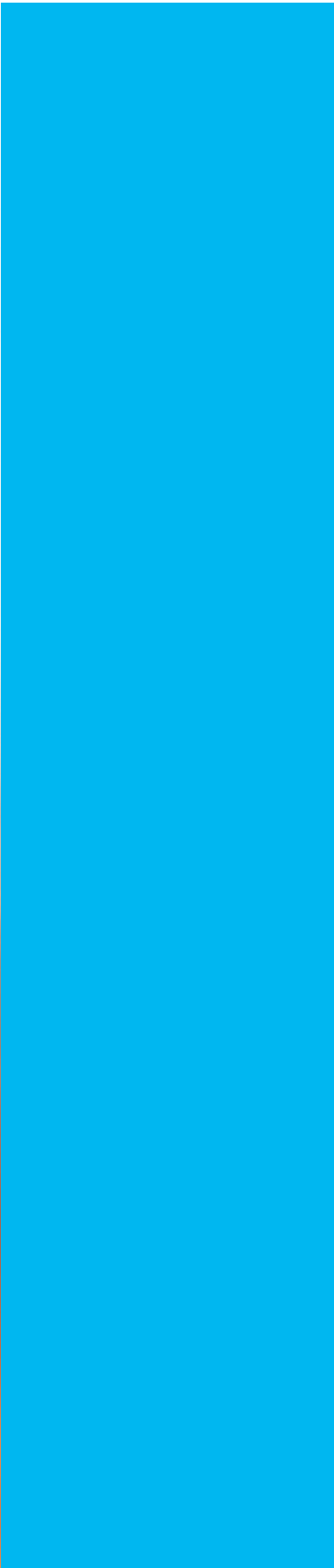
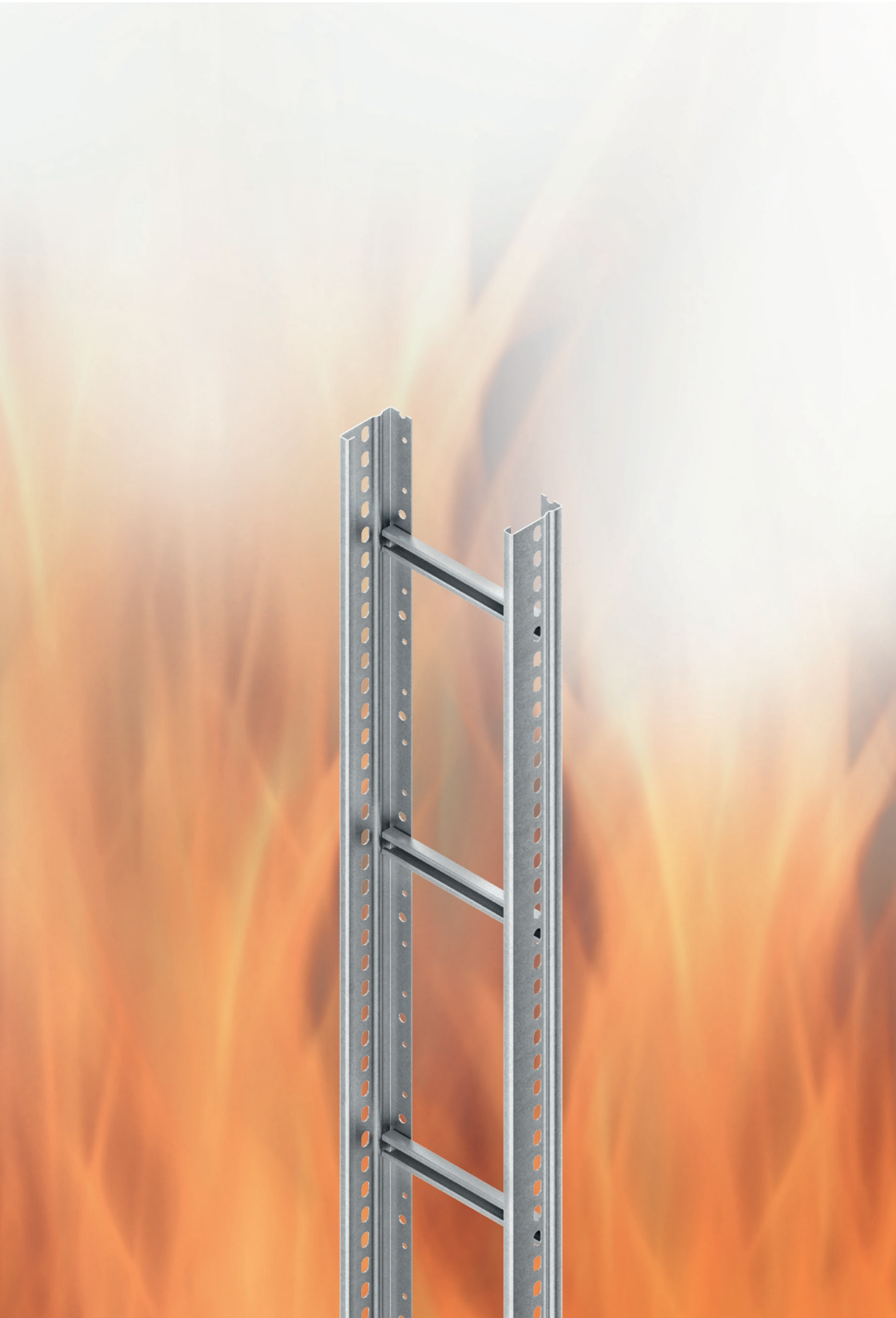


3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...

↑

◀	87
◀	102
◀	118
◀	134
◀	135
◀	243



3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...

The cable installation systems of the so-called standard support construction

- Vertical cable ladders STL..., STM... and STIC...
- Clamps SAS..., 85... and B... and BU... with/without long trough LW...
- Cable ladder KL 60...
- Cable trays RS 60...

meet the exact specifications and definitions of DIN 4102 Part 12 of November 1998, such as height of the cable

ladder/tray, width of the cable ladder/tray, proportion of holes in the cable tray, distance between rungs of the cable ladder, material thickness, max. permissible cable dead weight, max. permissible fastening spacing, etc... Their classification as a standard support system allows them to be combined with any circuit integrity maintenance cable/cable that has a valid general test certificate from the building authorities regulating installation on standard support constructions.

Fastening spacing $a \leq 1,2 \text{ m}$
Cable load $q \leq 20 \text{ kg/m}$

The standard support construction of vertical cable ladders STL..., STM... and STIC... in accordance with DIN 4102 Part 12 for vertical cable laying with circuit integrity maintenance classes E30, E60 and E90 are available in galvanised or stainless steel in widths of 200 to 600 mm.

Our vertical cable ladders STL..., STM... and STIC... can be fixed to the wall directly or with internal or external wall connection angle WWU 150/8 or WWI 80 with a fastening spacing $a \leq 1,2 \text{ m}$ and a cable dead weight of $q \leq 20 \text{ kg/m}$. The wall connection angle WWU 150/8 is fastened to the vertical cable ladder side rail with mushroom-head bolt FLM 8X13 and the wall connection angle WWI with flat round-head screws FLM 12X30. For fastening to the ground, fastening elements of at least M8 are required for STL... and STM.... fasteners of at least M8 and STIC... fasteners of at least M10 must be used. If installation directly on the solid wall is not possible due to structural conditions, vertical cable routing can also be implemented in a suspended position using the STBA... vertical cable ladder fastening adapter.

The distance between the rungs is 300 mm. The rungs of the STL... are the C-profile 2970 with a slot width of 16 mm, suitable for cable U-clamps type B... . The rungs of the STM... and STIC... use the C-profile 2986 with a slot width of 18 mm, suitable for U-clamps type BU... .

The joint connection for the STL... and STM... climbing sections is made with two KLVB 60/4 splice plates and four FLM 8X13 mushroom-head bolts each and for the STIC... climbing section with two VBI 80 connectors and four FLM 10X25 pan head screws each. The use of splice plates KLVB 60/4 or VBI 80 is not bound to specific positions. For continuous vertical runs of more than 3.5 m, an effective strain relief/support measure, e.g. according to Fig. 5 of DIN 4102 Part 12, must be taken to prevent slipping. We offer you a suitable solution in chapter "7 Strain Relief for Circuit Integrity Maintenance Installation Systems".

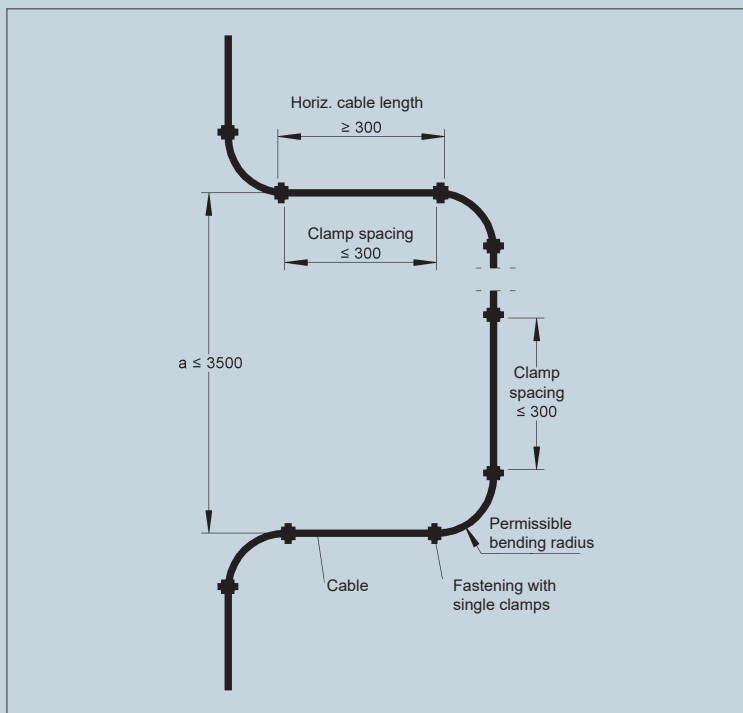
3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...

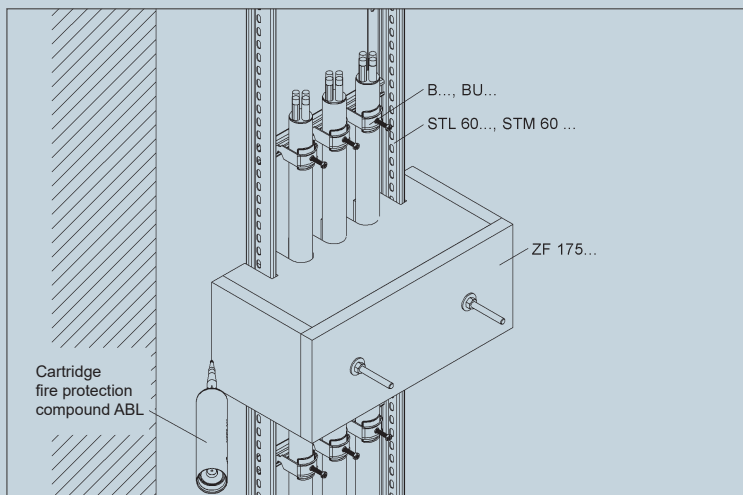


Mounting STL... and STM...

Rung spacing = 300 mm . Fastening spacing ≤ 1.2 m . Cable load $q \leq 20$ kg/m



According to DIN 4102 Part 12:1998-11, only the horizontal arrangement of cable systems is tested, i.e. test results on horizontal cable systems also apply to corresponding inclined or vertical cable systems such as riser systems. In the special notes in the test certificate it is pointed out that the assessment only applies to inclined or vertical arrangements if the cable systems are supported in the transition area vertically/horizontally so that kinking or slipping of the cables at the edges is prevented. For continuous vertical cable ladders over 3500 mm, the classification only applies if there is effective support for the cables (see DIN 4102 Part 12: 1998-11, Figure 5). This support can be provided by a lateral offset of at least 300 mm or by a sealed off strain relief (fire protection housing) tested according to DIN 4102.

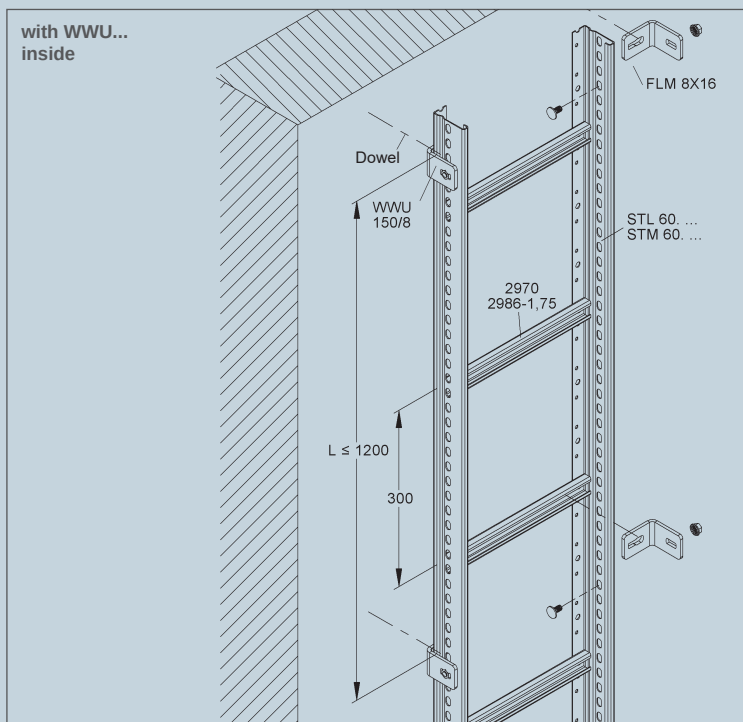
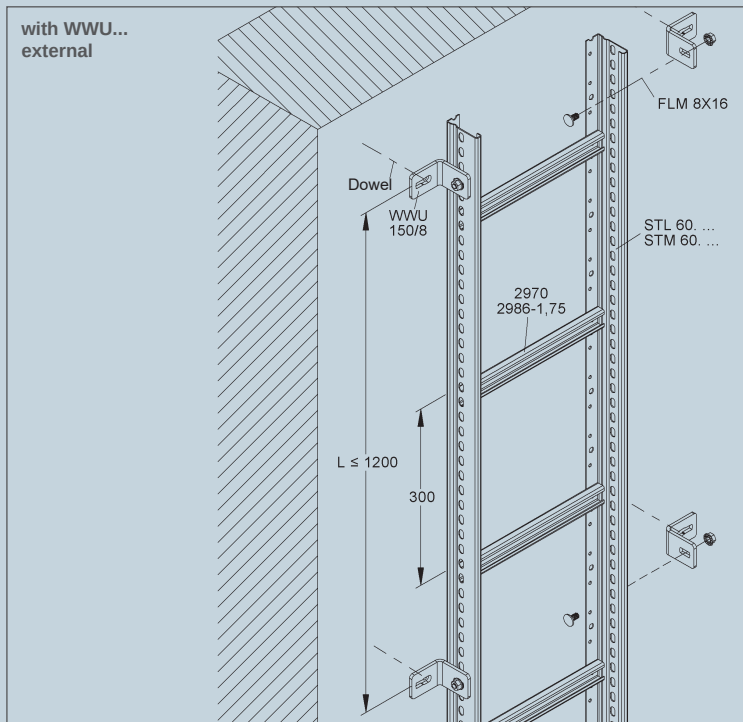


Such a strain relief (effective support measure) can be found in chapter "7 Strain Relief for Circuit Integrity Maintenance Installation Systems". ➔ 250



Mounting STL... and STM...

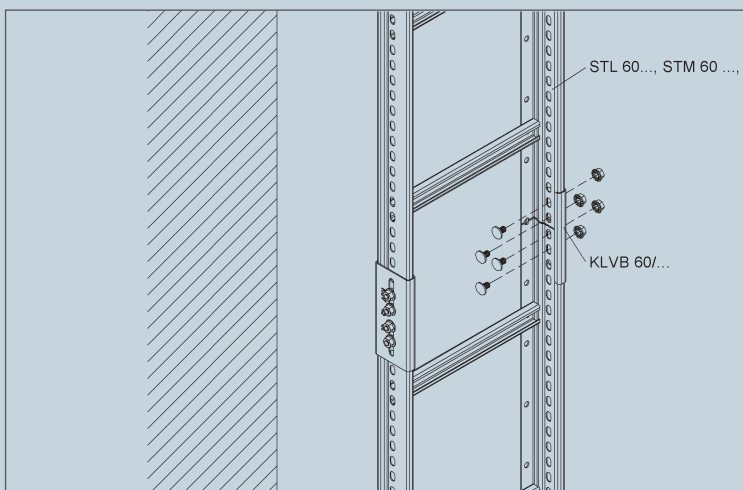
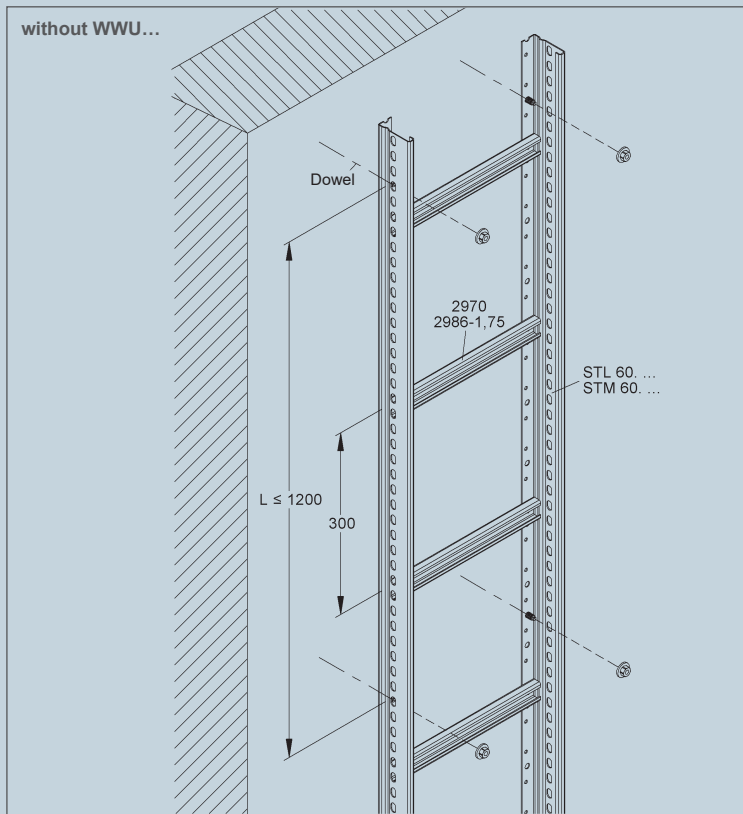
Rung spacing = 300 mm . Fastening spacing ≤ 1.2 m . Cable load $q \leq 20$ kg/m



The vertical cable ladders are fastened to the ground with approved dowels $\geq M8$ (see chapter “8 Fastening Elements” ➔ 256).

3 STANDARD SUPPORT CONSTRUCTION

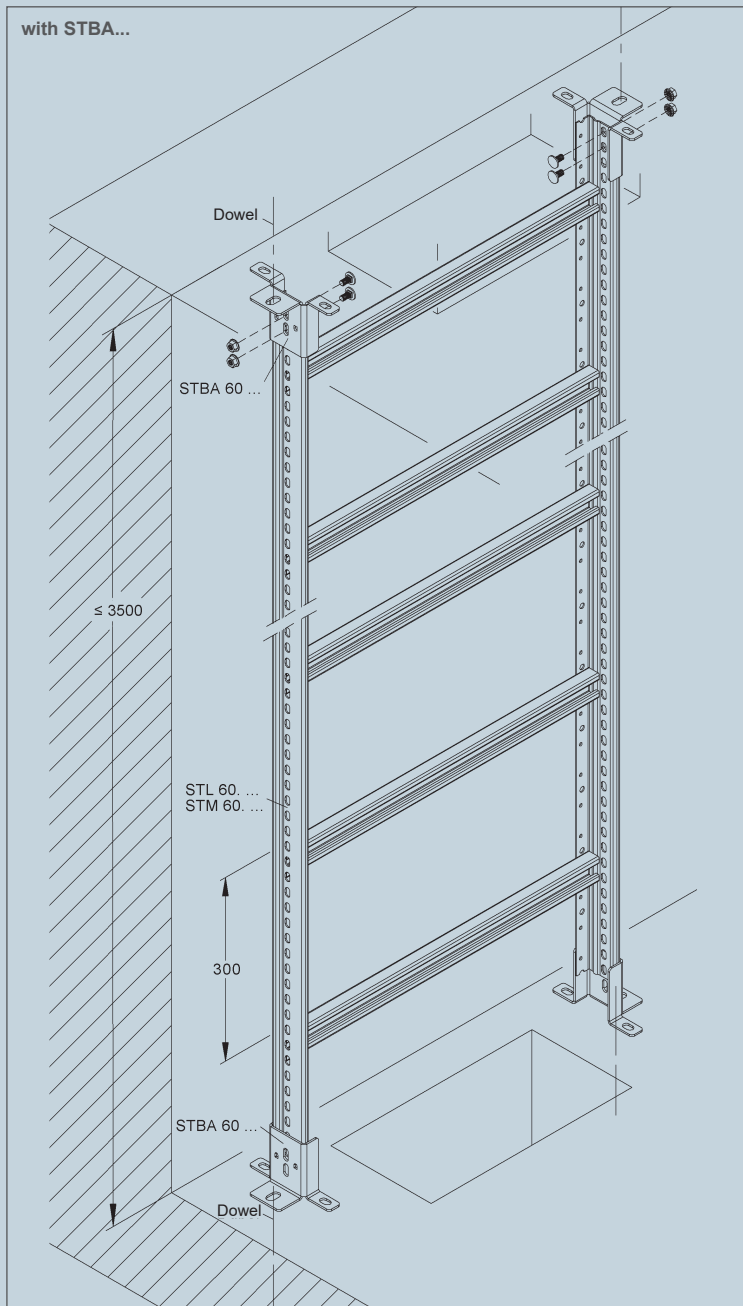
3.1 Vertical Cable Ladders STL..., STM... and STIC...



The connection of two vertical cable ladders STL 60... / STM 60 ... is made via the cable ladder longitudinal splice plate KLVB 60/4 with 4 mushroom-head bolts FLM 8X13 per splice plate.

The vertical cable ladders are fastened to the ground with approved dowels $\geq$ M8 (see chapter “8 Fastening Elements” ➔ 256).





The vertical cable ladder mounting adapter is attached to the side rail of the vertical cable ladder using 2 FLM 8X16 mushroom-head bolts. The vertical cable ladder mounting adapter is attached to the building ground using approved M12 dowels (see chapter "8 Fastening Elements" ➔ 256).

Alternatively, the fastening can also be carried out by bridging the opening with the help of M12 threaded rods according to Annex 3 of the fire protection assessment on our homepage www.niedax.com .

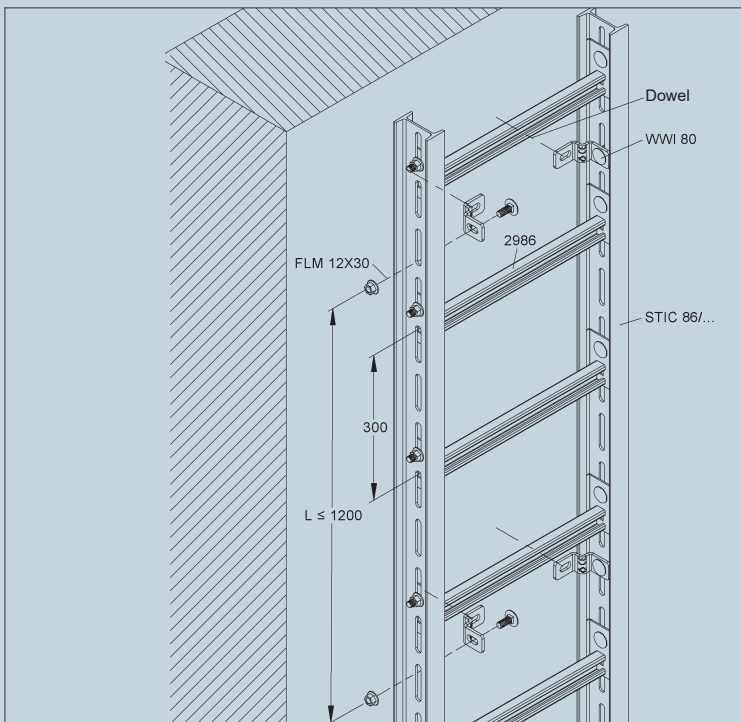
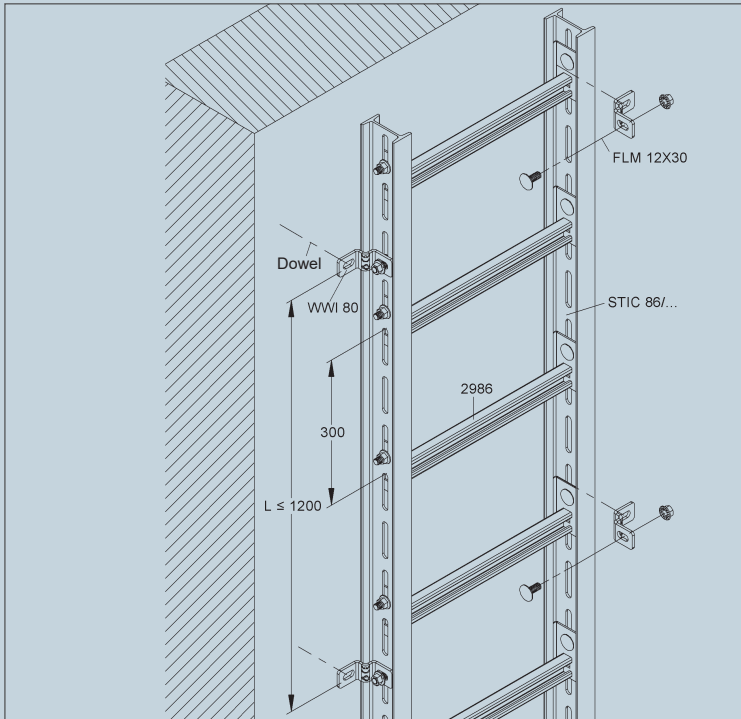
3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...



Mounting STIC...

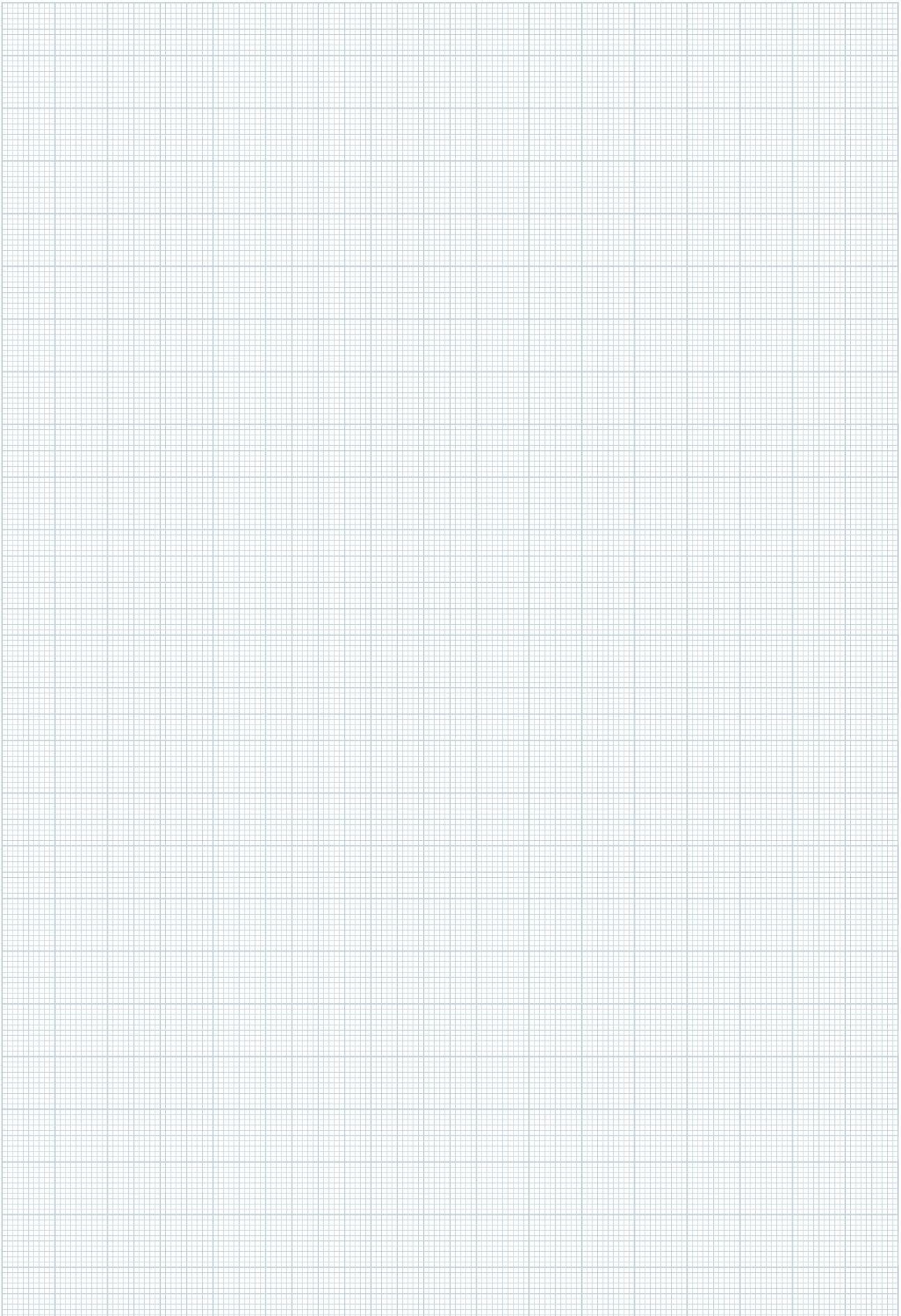
Rung spacing = 300 mm . Fastening spacing ≤ 1.2 m . Cable load $q \leq 20$ kg/m



The vertical cable ladders are fastened to the ground with approved dowels $\geq M10$ (see chapter "8 Fastening Elements" ➔ 256).



NOTES



3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...

Vertical Cable Ladder

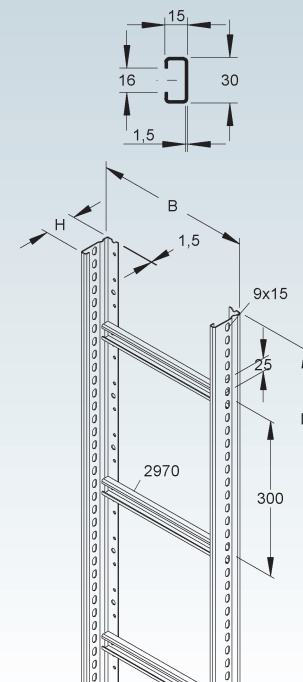
rung spacing 300 mm, with continuously perforated side profiles

	Model No.	Height H	Width B	Length L	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm			
S	STL 60.203/6	60	200	6000	921300	267,72	6 m
S	STL 60.303/6	60	300	6000	921324	292,88	6 m
S	STL 60.403/6	60	400	6000	921348	318,03	6 m
F	STL 60.203/6 F	60	200	6000	921706	295,50	6 m
F	STL 60.303/6 F	60	300	6000	921720	323,17	6 m
F	STL 60.403/6 F	60	400	6000	921744	350,84	6 m
E3	STL 60.203/6 E3	60	200	6000	906550	269,44	6 m
E3	STL 60.303/6 E3	60	300	6000	906567	294,75	6 m
E3	STL 60.403/6 E3	60	400	6000	906574	320,07	6 m
E5	STL 60.203/6 E5	60	200	6000	916467	272,16	6 m
E5	STL 60.303/6 E5	60	300	6000	916481	297,74	6 m
E5	STL 60.403/6 E5	60	400	6000	916504	323,31	6 m

Vertical cable ladder also available in 3 m.

You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".

60



Vertical Cable Ladder

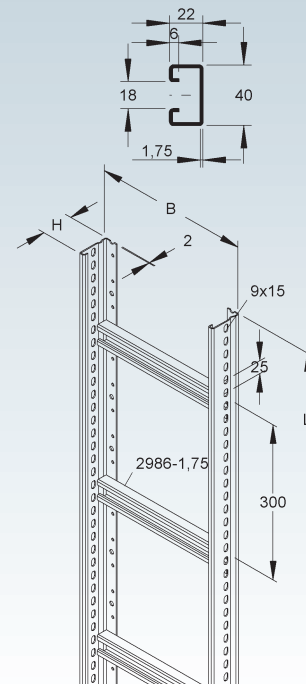
rung spacing 300 mm, with continuously perforated side profiles

	Model No.	Height H	Width B	Length L	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm			
S	STM 60.203/6	60	200	6000	321308	376,83	6 m
S	STM 60.303/6	60	300	6000	321407	424,04	6 m
S	STM 60.403/6	60	400	6000	321506	471,26	6 m
S	STM 60.503/6	60	500	6000	321605	518,47	6 m
S	STM 60.603/6	60	600	6000	321704	565,68	6 m
F	STM 60.203/6 F	60	200	6000	585601	415,85	6 m
F	STM 60.303/6 F	60	300	6000	585700	467,79	6 m
F	STM 60.403/6 F	60	400	6000	585809	519,72	6 m
F	STM 60.503/6 F	60	500	6000	585908	571,65	6 m
F	STM 60.603/6 F	60	600	6000	586004	623,59	6 m

Vertical cable ladder also available in 3 m.

You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".

60



Vertical Cable Ladder

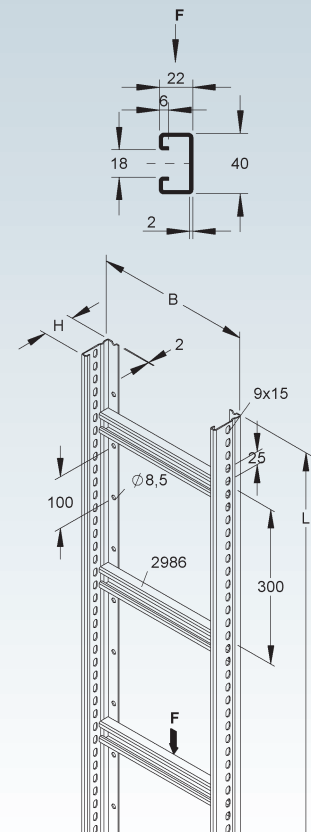
rung spacing 300 mm, with continuously perforated side profiles

Model No.	Height H	Width B	Length L	EAN code	Weight in kg per 100 m	Smallest packaging unit
E3 STM 60.203/6 E3	60	200	6000	906659	391,49	6 m
E3 STM 60.303/6 E3	60	300	6000	906666	444,83	6 m
E3 STM 60.403/6 E3	60	400	6000	906673	498,17	6 m

Vertical cable ladder also available in 3 m.

You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".

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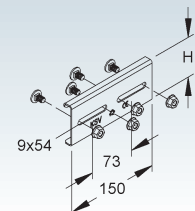


Splice Plate

Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S KLV B 60/4 S	60	4 FLM 8X13 F	188123	25,64	20 pcs.
F KLV B 60/4	60	4 FLM 8X13 F	346707	27,44	20 pcs.
E5 KLV B 60/4 E5	60	4 SKM 8X16 E5	188215	22,58	20 pcs.

Requirement: 2 pieces per joint

60

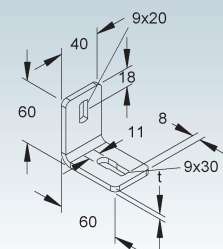


Wall Connection Angle

equal-sided

Model No.	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F WWU 150/8	5	1 FLM 8X16 F	194506	19,11	50 pcs.
E3 WWU 150/8 E3	4	1 FLM 8X16 E3	344307	14,87	50 pcs.
E5 WWU 150/8 E5	4	1 SKM 8X16 E5	728909	14,62	50 pcs.

for floor, ceiling and wall mounting



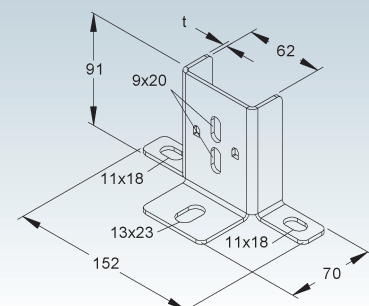
Vertical Cable Ladder Fastening Adapter

Model No.	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F STBA 60 F	3	2 FLM 8X16 F	202782	38,69	20 pcs.
E3 STBA 60 E3	3	2 FLM 8X16 E3	203093	35,59	20 pcs.
E5 STBA 60 E5	3	2 SKM 8X16 E5	203116	35,33	20 pcs.

for ceiling and floor fastening of vertical cable ladders STL 60... and STM 60...

See fire protection assessment by Niedax.

Requirement: 4 pieces per vertical cable ladder



3 STANDARD SUPPORT CONSTRUCTION

3.1 Vertical Cable Ladders STL..., STM... and STIC...

Vertical Cable Ladder

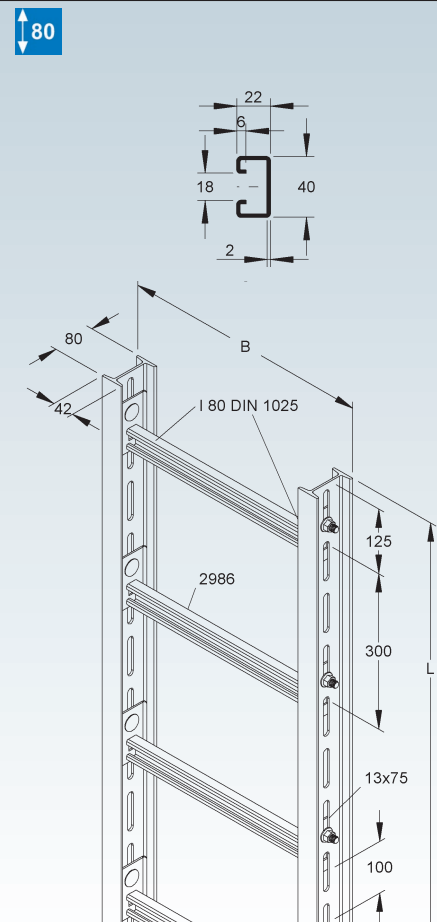
heavy version, made of I 80 profiles according to DIN 1025 and anchor channels model 2986 (C-profile), unmounted

Model No.	Height H	Width B	Rung distance A	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm				
F STIC 86/203	80	280	300	40 FLM 12X30 F	323449	1.531,87	6 m
F STIC 86/303	80	380	300	40 FLM 12X30 F	323456	1.590,18	6 m
F STIC 86/403	80	480	300	40 FLM 12X30 F	323463	1.648,48	6 m
F STIC 86/503	80	580	300	40 FLM 12X30 F	323470	1.706,78	6 m
F STIC 86/603	80	680	300	40 FLM 12X30 F	323487	1.765,08	6 m

Vertical cable ladder also available in 3 m (same price per meter).

For transport reasons, the delivery is made as a kit. The scope of delivery includes: with a rung spacing of 30 cm 20 rungs per 6 m delivery length, with a rung spacing of 60 cm 10 rungs per 6 m delivery length.

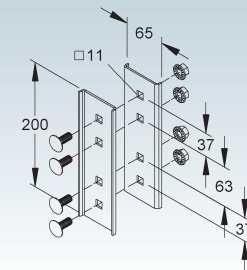
You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".



Longitudinal Connector

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pairs	Smallest packaging unit
F VBI 80	4 FLM 10X25 F	199501	75,70	5 pairs

Requirement: 1 pair per joint

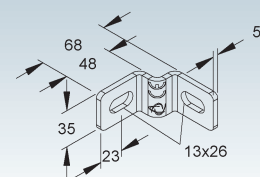


Wall Connection Angle

equal-sided

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F WWI 80	1 FLM 12X30 F	193004	22,69	50 pcs.

for wall-mounting



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

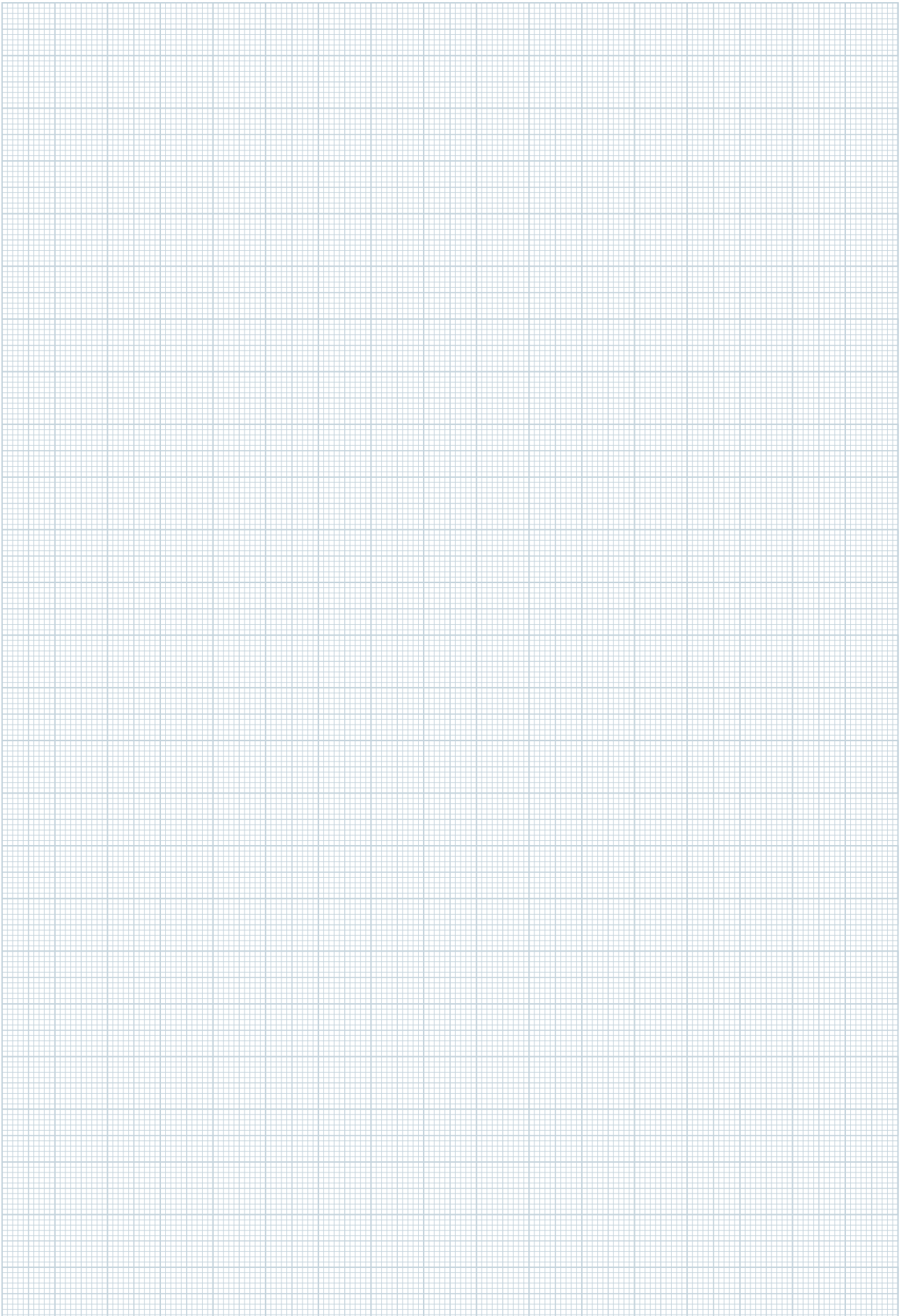
Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

		Niedax GmbH & Co. KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E gemäß DIN 4102-12					
Errichtungsdatum: _____					
Errichter der Anlage: _____					
Prüfzeugnis-Nr.: _____					
Prüfzeugnis Inhaber: _____					
ACHTUNG! Trasse nur für elektrischen Funktionserhalt					



NOTES

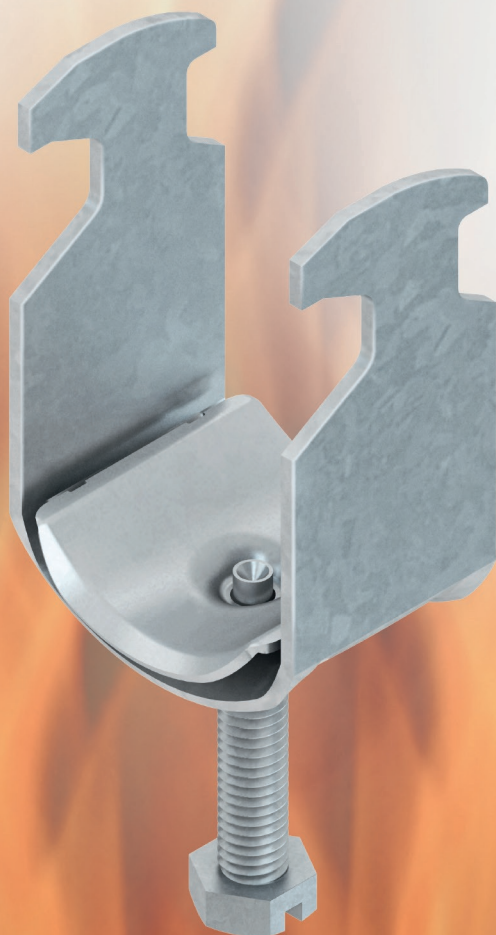


3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...



◀ 242
◀ 243



3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...

The cable installation systems SAS..., 85... as well as B... and BU... with/without long trough LW... of the so-called standard support construction fulfil the exact specifications and definitions of DIN 4102 Part 12 of November 1998.

This installation system enables fast, flexible and space-saving laying of individual cables. Its classification as a standard support system allows it to be combined

with any circuit integrity maintenance cable/cable that has a valid german classification report for electric cable systems with circuit integrity maintenance (abP) regulating the laying on standard support constructions.

In addition, cable bundles or deviating fastening spacings can be installed in accordance with the german classification report of the cable manufacturers.

Fastening spacing
 $a \leq 0,3 \text{ m}$ resp. $a \leq 0,6 \text{ m}$

The screw distance clamps SAS... and 85... as well as the cable U-clamps B... and BU... with or without long trough LW..., galvanised or stainless steel, fulfil the criteria as a standard support construction according to DIN 4102 Part 12 for the circuit integrity maintenance classes E30 to E90 and can be used for horizontal cable laying on walls and ceilings as well as vertically. When laying cables horizontally on walls with U-clamps and C-profile rails, suitable measures must be taken to prevent slipping.

For screw distance clamps SAS... and 85... as well as for cable U-clamps B... and BU... the fastening spacing a is $\leq 300 \text{ mm}$, for U-clamps B... or BU... with long trough LW... the fastening spacing a is $\leq 600 \text{ mm}$.

For fastening in the ground, use fastening elements M6 for screw distance clamps SAS... and 85... and fastening elements $\geq \text{M6}$ for C-profile rails of the U-clamp. The

fastening spacing DA (dowel spacing) along a C-profile rail is $\leq 250 \text{ mm}$.

Further cable-specific installation options with the SAS..., 85..., B... and BU... clamps, such as cable bundling or higher fastening spacings, can be found in the German classification report for electric cable systems with circuit integrity maintenance of the cable manufacturers.

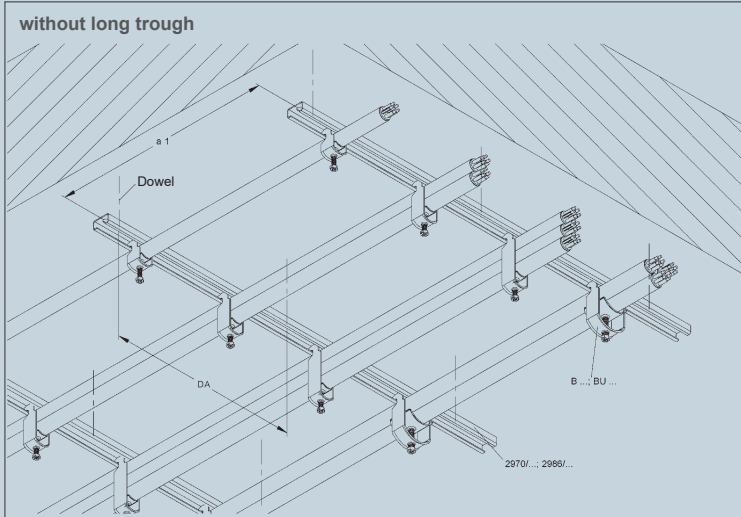
3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...



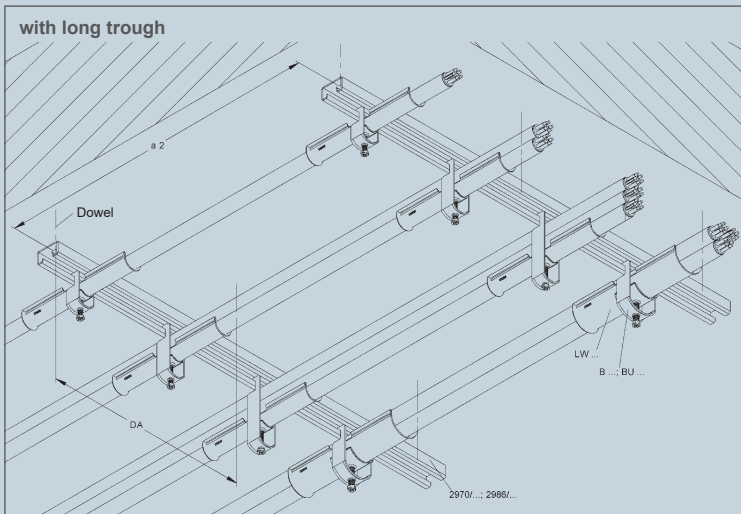
Mounting B... and BU...

Fastening spacings without long trough $a_1 \leq 300$ mm . Fastening spacings with long tray $a_2 \leq 600$ mm



In the case of vertical installation with U-clamps B... or BU, effective support of the cables must be provided for continuous cable runs over 3500 mm (see chapter "3.1 Vertical Cable Ladders"). ➡ 120

Such strain relief (effective support measure) can be found in chapter "7 Strain Relief for Circuit Integrity Maintenance Installation Systems". ➡ 250



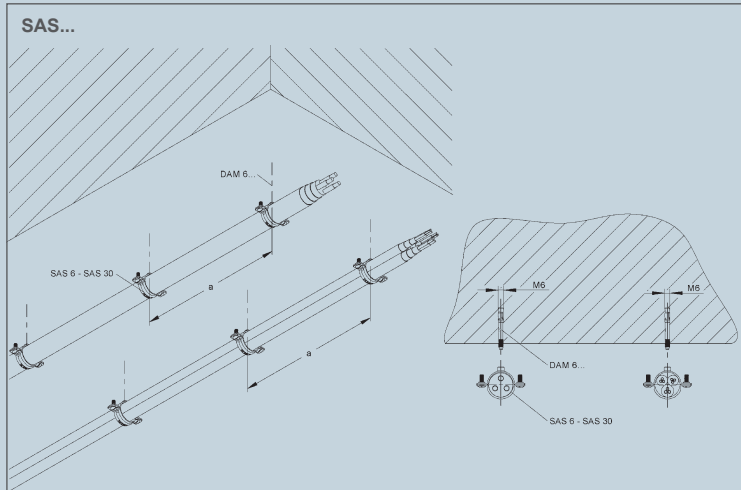
When laying cables horizontally on the wall with cable U-clamps and C-profile rails, it must be ensured that the cable U-clamps do not slip sideways out of the C-profile in case of fire. The design and instructions of the expert judgement report on the standard support construction must be taken into account. Stainless steel can be used as an alternative to the galvanised steel version.

The fastening spacing DA (dowel spacing) along a C-profile rail is ≤ 250 mm.
The profile rails are fastened to the building ground with approved dowels $\geq M6$
(see chapter "8 Fastening Elements" ➡ 256).



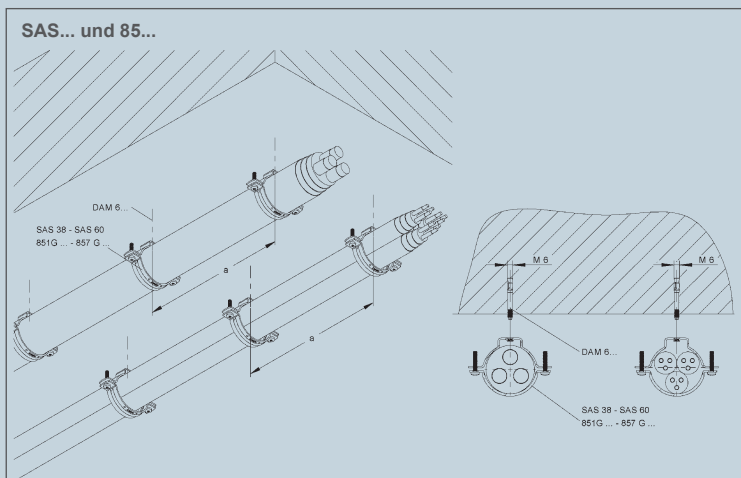
Mounting SAS... and 85...

Fastening spacing $a \leq 300$ mm



For vertical installation with cable and screw distance clamps 85... and SAS..., effective support of the cables must be provided for continuous cable runs over 3500 mm (see chapter "3.1 Vertical Cable Ladders"). ➡ 120

Such strain relief (effective support measure) can be found in chapter "7 Strain Relief for Circuit Integrity Maintenance Installation Systems". ➡ 250



The explanations and notes in the expert judgement report on the standard support construction must be taken into account. Stainless steel can be used as an alternative to the galvanised steel version.

The cable and screw distance clamps are fastened to the building ground using M6 dowels approved by the building authorities.

3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...

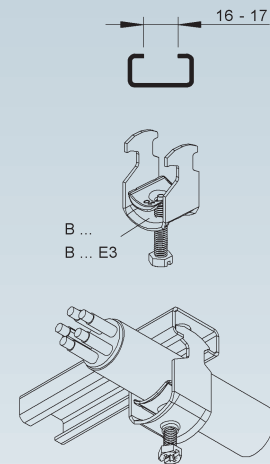
Cable U-Clamp

with pressure trough

Model No.	For cable-Ø	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
F B 12	6 - 12	SH with multiple drive	6	047406	2,63	100 pcs.
F B 14	10 - 14	SH with multiple drive	6	047505	2,78	100 pcs.
F B 16	12 - 16	SH with multiple drive	6	047604	2,92	100 pcs.
F B 18	14 - 18	SH with multiple drive	6	047703	3,14	100 pcs.
F B 22	16 - 22	SH with multiple drive	6	047802	3,67	100 pcs.
F B 26	22 - 26	SH with multiple drive	6	047901	4,10	100 pcs.
F B 30	22 - 30	SH with multiple drive	6	048007	4,70	100 pcs.
F B 34	28 - 34	SH with multiple drive	6	048106	6,07	100 pcs.
F B 38	34 - 38	SH with multiple drive	6	048205	8,07	100 pcs.
F B 42	34 - 42	SH with multiple drive	6	048304	8,61	100 pcs.
F B 46	40 - 46	SH with multiple drive	8	048403	10,15	100 pcs.
F B 50	46 - 50	SH with multiple drive	8	048502	10,55	50 pcs.
F B 54	46 - 54	SH with multiple drive	8	048601	11,44	50 pcs.
F B 58	52 - 58	SH with multiple drive	8	048700	12,00	50 pcs.
F B 64	58 - 64	SH with multiple drive	8	048809	13,09	50 pcs.
F B 70	64 - 70	SH with multiple drive	8	048908	14,49	50 pcs.
F B 76	70 - 76	SH with multiple drive	8	049004	18,10	50 pcs.
F B 82	76 - 82	SH with multiple drive	8	049103	18,76	50 pcs.
F B 90	82 - 90	SH with multiple drive	8	049202	21,62	50 pcs.
F B 100	90 - 100	SH with multiple drive	8	049301	23,55	25 pcs.
F B 110	100 - 110	SH with multiple drive	8	049400	26,00	25 pcs.
E3 B 14 E3	8 - 14	SH with multiple drive	6	081905	2,39	100 pcs.
E3 B 18 E3	12 - 18	SH with multiple drive	6	082001	2,78	100 pcs.
E3 B 22 E3	16 - 22	SH with multiple drive	6	082100	3,14	100 pcs.
E3 B 26 E3	22 - 26	SH with multiple drive	6	082209	3,93	100 pcs.
E3 B 30 E3	22 - 30	SH with multiple drive	6	082308	4,50	100 pcs.
E3 B 34 E3	28 - 34	SH with multiple drive	6	082407	5,82	100 pcs.
E3 B 38 E3	34 - 38	SH with multiple drive	6	082506	6,47	100 pcs.
E3 B 42 E3	34 - 42	SH with multiple drive	6	082605	6,92	100 pcs.
E3 B 46 E3	40 - 46	SH with multiple drive	8	082704	9,73	100 pcs.
E3 B 50 E3	46 - 50	SH with multiple drive	8	082803	10,11	50 pcs.
E3 B 54 E3	46 - 54	SH with multiple drive	8	082902	10,97	50 pcs.
E3 B 58 E3	52 - 58	SH with multiple drive	8	083008	11,50	50 pcs.
E3 B 64 E3	58 - 64	SH with multiple drive	8	083107	12,58	50 pcs.
E3 B 70 E3	64 - 70	SH with multiple drive	8	083206	13,88	50 pcs.
E3 B 76 E3	70 - 76	SH with multiple drive	8	083305	17,33	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



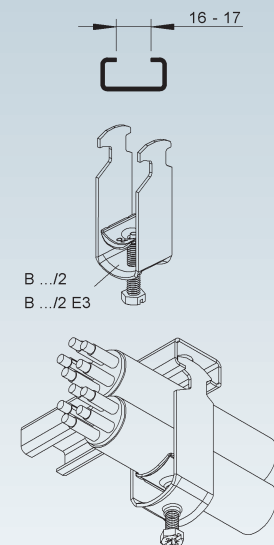
Cable U-Clamp

with pressure trough

Model No.	For cable-Ø	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
F B 12/2	10 - 12	SH with multiple drive	6	049509	3,34	100 pcs.
F B 14/2	12 - 14	SH with multiple drive	6	049608	3,73	100 pcs.
F B 16/2	14 - 16	SH with multiple drive	6	049707	4,11	100 pcs.
F B 18/2	16 - 18	SH with multiple drive	6	049806	4,44	100 pcs.
F B 22/2	18 - 22	SH with multiple drive	6	049905	5,27	100 pcs.
F B 26/2	22 - 26	SH with multiple drive	6	050000	5,94	100 pcs.
F B 30/2	26 - 30	SH with multiple drive	6	050109	6,60	100 pcs.
F B 34/2	30 - 34	SH with multiple drive	6	050208	8,42	100 pcs.
F B 38/2	34 - 38	SH with multiple drive	6	050307	11,65	50 pcs.
F B 42/2	38 - 42	SH with multiple drive	6	050406	11,99	50 pcs.
F B 46/2	42 - 46	SH with multiple drive	8	050505	14,03	50 pcs.
F B 50/2	46 - 50	SH with multiple drive	8	050604	15,08	50 pcs.
E3 B 14/2 E3	12 - 14	SH with multiple drive	6	083404	3,14	100 pcs.
E3 B 18/2 E3	16 - 18	SH with multiple drive	6	083503	3,82	100 pcs.
E3 B 22/2 E3	20 - 22	SH with multiple drive	6	083602	4,42	100 pcs.
E3 B 26/2 E3	24 - 26	SH with multiple drive	6	083701	5,69	100 pcs.
E3 B 30/2 E3	26 - 30	SH with multiple drive	6	083800	6,32	100 pcs.
E3 B 34/2 E3	32 - 34	SH with multiple drive	6	083909	8,07	100 pcs.
E3 B 38/2 E3	36 - 38	SH with multiple drive	6	084005	9,06	50 pcs.
E3 B 42/2 E3	40 - 42	SH with multiple drive	6	084104	9,80	50 pcs.
E3 B 46/2 E3	44 - 46	SH with multiple drive	8	084203	13,44	50 pcs.
E3 B 50/2 E3	48 - 50	SH with multiple drive	8	084302	14,45	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



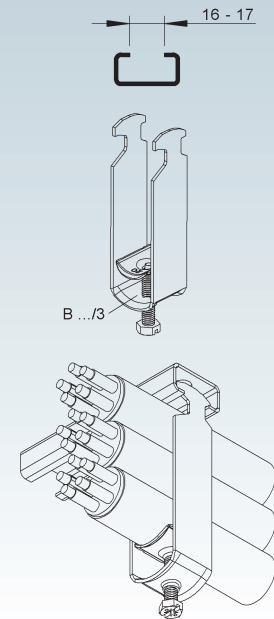
Cable U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	B 12/3	9 - 12	SH with multiple drive	6	050703	3,93	100 pcs.
F	B 14/3	12 - 14	SH with multiple drive	6	050802	4,73	100 pcs.
F	B 16/3	14 - 16	SH with multiple drive	6	050901	5,12	100 pcs.
F	B 18/3	16 - 18	SH with multiple drive	6	051007	5,45	100 pcs.
F	B 20/3	18 - 20	SH with multiple drive	6	051106	6,01	100 pcs.
F	B 22/3	20 - 22	SH with multiple drive	6	051205	6,58	100 pcs.
F	B 24/3	22 - 24	SH with multiple drive	6	051304	6,73	100 pcs.
F	B 26/3	24 - 26	SH with multiple drive	6	051403	7,66	100 pcs.
F	B 28/3	26 - 28	SH with multiple drive	6	051502	8,22	100 pcs.
F	B 30/3	28 - 30	SH with multiple drive	6	051601	8,32	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...

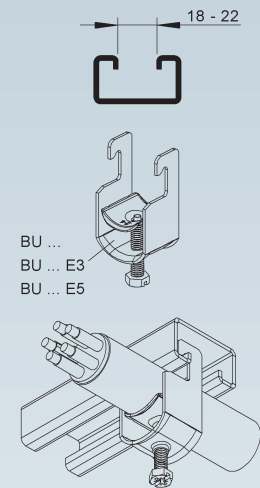
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12	6 - 12	SH with multiple drive	6	064601	2,83	100 pcs.
F	BU 14	10 - 14	SH with multiple drive	6	064700	3,16	100 pcs.
F	BU 16	12 - 16	SH with multiple drive	6	064908	3,30	100 pcs.
F	BU 18	14 - 18	SH with multiple drive	6	065004	3,46	100 pcs.
F	BU 22	16 - 22	SH with multiple drive	6	065103	3,91	100 pcs.
F	BU 26	22 - 26	SH with multiple drive	6	065202	4,33	100 pcs.
F	BU 30	22 - 30	SH with multiple drive	6	065301	4,81	100 pcs.
F	BU 34	28 - 34	SH with multiple drive	6	065400	6,06	100 pcs.
F	BU 38	34 - 38	SH with multiple drive	6	065509	8,03	100 pcs.
F	BU 42	34 - 42	SH with multiple drive	6	065608	8,61	100 pcs.
F	BU 46	40 - 46	SH with multiple drive	8	065707	9,95	100 pcs.
F	BU 50	46 - 50	SH with multiple drive	8	065806	10,31	50 pcs.
F	BU 54	46 - 54	SH with multiple drive	8	065905	11,25	50 pcs.
F	BU 58	52 - 58	SH with multiple drive	8	066001	11,88	50 pcs.
F	BU 64	58 - 64	SH with multiple drive	8	066100	12,68	50 pcs.
F	BU 70	64 - 70	SH with multiple drive	8	066209	14,15	50 pcs.
F	BU 76	70 - 76	SH with multiple drive	8	066308	17,83	50 pcs.
F	BU 82	76 - 82	SH with multiple drive	8	066407	18,40	50 pcs.
F	BU 90	82 - 90	SH with multiple drive	8	066506	20,34	50 pcs.
F	BU 100	90 - 100	SH with multiple drive	8	066605	22,62	25 pcs.
F	BU 110	100 - 110	SH with multiple drive	8	066704	24,77	25 pcs.
E3	BU 12 E3	6 - 12	SH with multiple drive	6	757701	2,56	100 pcs.
E3	BU 14 E3	10 - 14	SH with multiple drive	6	757800	2,71	100 pcs.
E3	BU 18 E3	14 - 18	SH with multiple drive	6	757909	2,95	100 pcs.
E3	BU 22 E3	18 - 22	SH with multiple drive	6	758005	3,50	100 pcs.
E3	BU 26 E3	22 - 26	SH with multiple drive	6	758104	4,37	100 pcs.
E3	BU 30 E3	26 - 30	SH with multiple drive	6	758203	4,90	100 pcs.
E3	BU 34 E3	30 - 34	SH with multiple drive	6	758302	6,16	100 pcs.
E3	BU 38 E3	34 - 38	SH with multiple drive	6	758401	6,83	100 pcs.
E3	BU 42 E3	38 - 42	SH with multiple drive	6	758500	7,27	100 pcs.
E3	BU 46 E3	42 - 46	SH with multiple drive	8	758609	9,38	100 pcs.
E3	BU 50 E3	46 - 50	SH with multiple drive	8	758708	9,90	50 pcs.
E3	BU 54 E3	50 - 54	SH with multiple drive	8	758807	10,62	50 pcs.
E3	BU 58 E3	54 - 58	SH with multiple drive	8	758906	11,23	50 pcs.
E5	BU 12 E5	6 - 12	SK with multiple drive	6	890507	2,58	100 pcs.
E5	BU 14 E5	10 - 14	SK with multiple drive	6	890101	2,73	100 pcs.
E5	BU 18 E5	12 - 18	SK with multiple drive	6	890149	2,98	100 pcs.
E5	BU 22 E5	16 - 22	SK with multiple drive	6	890163	3,36	100 pcs.
E5	BU 26 E5	22 - 26	SK with multiple drive	6	890187	4,41	100 pcs.
E5	BU 30 E5	22 - 30	SK with multiple drive	6	890200	4,96	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



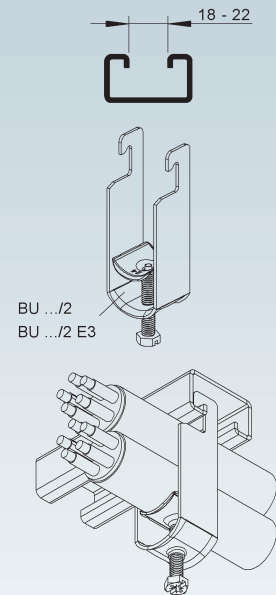
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12/2	10 - 12	SH with multiple drive	6	066803	3,67	100 pcs.
F	BU 14/2	12 - 14	SH with multiple drive	6	066902	4,14	100 pcs.
F	BU 16/2	14 - 16	SH with multiple drive	6	067008	4,37	100 pcs.
F	BU 18/2	16 - 18	SH with multiple drive	6	067107	4,64	100 pcs.
F	BU 22/2	18 - 22	SH with multiple drive	6	067206	5,40	100 pcs.
F	BU 26/2	22 - 26	SH with multiple drive	6	067305	6,21	100 pcs.
F	BU 30/2	26 - 30	SH with multiple drive	6	067404	6,87	100 pcs.
F	BU 34/2	30 - 34	SH with multiple drive	6	067503	8,36	100 pcs.
F	BU 38/2	34 - 38	SH with multiple drive	6	067602	11,45	50 pcs.
F	BU 42/2	38 - 42	SH with multiple drive	6	067701	12,43	50 pcs.
F	BU 46/2	42 - 46	SH with multiple drive	8	067800	13,91	50 pcs.
F	BU 50/2	46 - 50	SH with multiple drive	8	067909	14,92	50 pcs.
E3	BU 12/2 E3	10 - 12	SH with multiple drive	6	759002	3,26	100 pcs.
E3	BU 14/2 E3	12 - 14	SH with multiple drive	6	759101	3,48	100 pcs.
E3	BU 16/2 E3	14 - 16	SH with multiple drive	6	759156	3,86	100 pcs.
E3	BU 18/2 E3	16 - 18	SH with multiple drive	6	759200	4,09	100 pcs.
E3	BU 22/2 E3	18 - 22	SH with multiple drive	6	759309	4,77	100 pcs.
E3	BU 26/2 E3	22 - 26	SH with multiple drive	6	759408	5,95	100 pcs.
E3	BU 30/2 E3	26 - 30	SH with multiple drive	6	759507	6,97	100 pcs.
E3	BU 34/2 E3	30 - 34	SH with multiple drive	6	759606	8,47	100 pcs.
E3	BU 38/2 E3	34 - 38	SH with multiple drive	6	759705	9,43	50 pcs.
E3	BU 42/2 E3	38 - 42	SH with multiple drive	6	759804	10,18	50 pcs.
E3	BU 46/2 E3	42 - 46	SH with multiple drive	8	759903	13,34	50 pcs.
E3	BU 50/2 E3	46 - 50	SH with multiple drive	8	760008	14,31	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



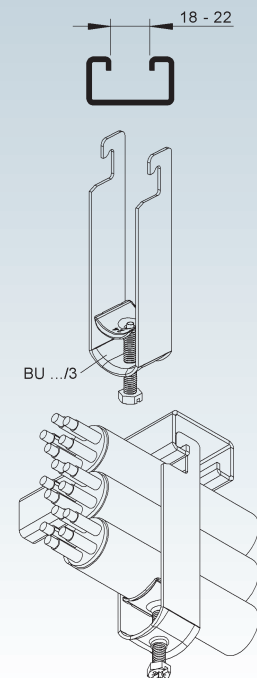
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12/3	10 - 12	SH with multiple drive	6	068005	4,61	100 pcs.
F	BU 14/3	12 - 14	SH with multiple drive	6	068104	5,11	100 pcs.
F	BU 16/3	14 - 16	SH with multiple drive	6	068203	5,47	100 pcs.
F	BU 18/3	16 - 18	SH with multiple drive	6	068302	5,83	100 pcs.
F	BU 20/3	18 - 20	SH with multiple drive	6	068401	6,27	100 pcs.
F	BU 22/3	20 - 22	SH with multiple drive	6	068500	6,91	100 pcs.
F	BU 24/3	22 - 24	SH with multiple drive	6	068609	7,48	100 pcs.
F	BU 26/3	24 - 26	SH with multiple drive	6	068708	7,87	100 pcs.
F	BU 28/3	26 - 28	SH with multiple drive	6	068807	8,35	100 pcs.
F	BU 30/3	28 - 30	SH with multiple drive	6	068906	8,82	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



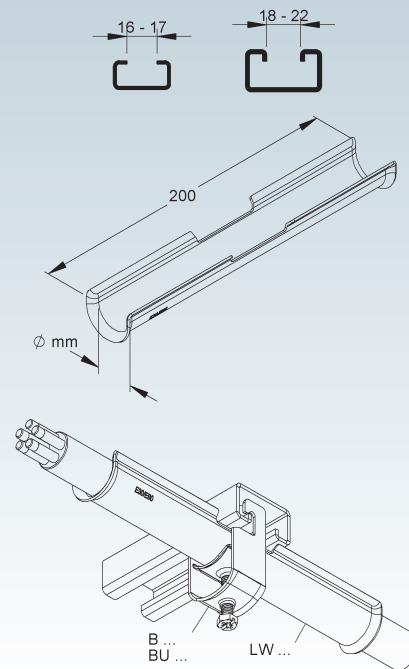
3 STANDARD SUPPORT CONSTRUCTION

3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...

Long Trough for all U-clamps

Model No.	For cable-Ø	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
S LW 16	8 - 13	113408	7,41	100 pcs.
S LW 22	13 - 19	113507	9,27	100 pcs.
S LW 26	19 - 23	113606	10,52	100 pcs.
S LW 34	23 - 31	113705	13,00	100 pcs.
S LW 38	31 - 36	113804	14,24	100 pcs.
S LW 42	36 - 40	113903	15,48	100 pcs.
S LW 46	39 - 43	114009	16,73	100 pcs.
S LW 50	43 - 47	114108	17,97	50 pcs.
S LW 54	47 - 51	114207	19,21	50 pcs.
S LW 58	51 - 55	787609	20,45	50 pcs.
S LW 64	55 - 61	787708	22,32	50 pcs.
S LW 70	61 - 67	794508	24,18	50 pcs.
S LW 76	67 - 73	794607	26,04	50 pcs.
S LW 82	73 - 79	794706	27,91	50 pcs.

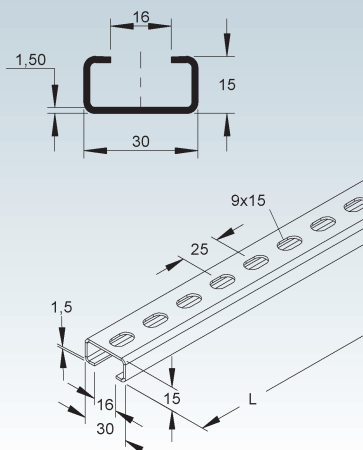
to increase the bearing surface



C-Profile Type 2970

C-profile, slot width 16 mm, acc. to DIN EN 60715, perforated

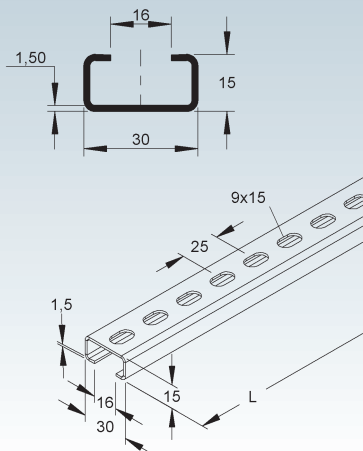
Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
S 2970/2 SL	2000	9x15	25	030309	69,94	10 x 2 m



C-Profile Type 2970

C-profile, slot width 16 mm, according to DIN EN 60715, with special perforation

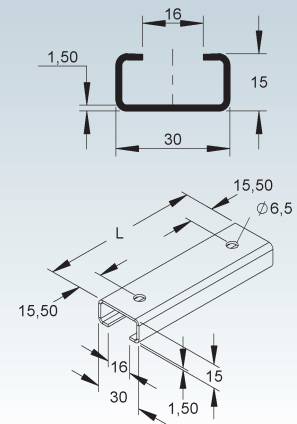
Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
E3 2970/2 E3L	2000	9x15	25	038107	70,38	10 x 2 m
E3 2970/6 E3L	6000	9x15	25	342204	70,38	10 x 6 m



C-Profile Type 2970

C-profile, slot width 16 mm, according to DIN EN 60715, with 2 end holes

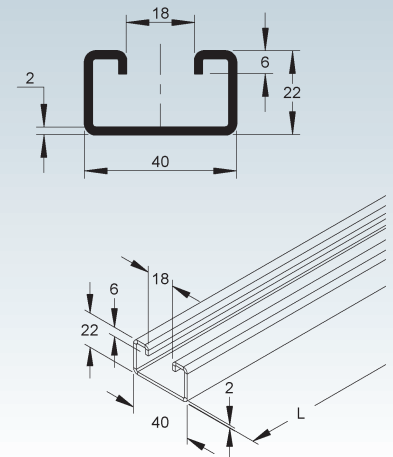
Model No.	Length L	Perforation	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm			
S 2970/100-2 SL	100	2xØ6,5	037841	7,47	100 pcs.
S 2970/200-2 SL	200	2xØ6,5	037308	15,02	50 pcs.
S 2970/300-2 SL	300	2xØ6,5	037605	22,56	50 pcs.
S 2970/400-2 SL	400	2xØ6,5	037209	30,11	50 pcs.
S 2970/500-2 SL	500	2xØ6,5	037704	37,66	25 pcs.



C-profile Type 2986

C-profile, slot width 18 mm, acc. to DIN EN 60715, unperforated

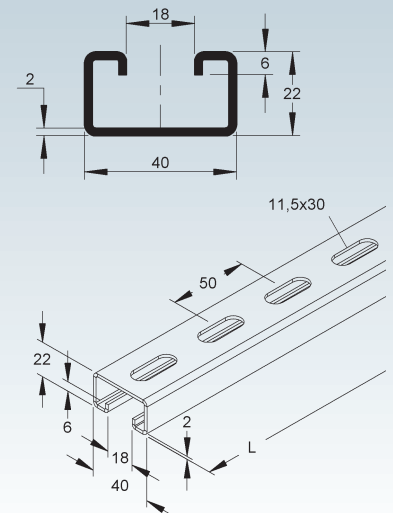
Model No.	Length L	Perforations for galvanisation, on both sides	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm				
S 2986/2 SO	2000	-	044009	159,01	5 x 2 m
F 2986/2 FO	2000	✓	043705	178,40	5 x 2 m



C-Profile Type 2986

C-profile, slot width 18 mm, acc. to DIN EN 60715, perforated

Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 pcs./m	Smallest packaging unit
	mm	mm	mm			
S 2986/2 SL	2000	11,5x30	50	899722	149,07	5 x 2 m
S 2986/3 SL	3000	11,5x30	50	193158	149,07	5 x 3 m
S 2986/6 SL	6000	11,5x30	50	032259	149,07	5 x 6 m
F 2986/100 FL	100	11,5x30	50	873104	16,40	1 pc.
F 2986/200 FL	200	11,5x30	50	873128	32,79	1 pc.
F 2986/300 FL	300	11,5x30	50	873142	49,19	1 pc.
F 2986/400 FL	400	11,5x30	50	873166	65,59	1 pc.
F 2986/500 FL	500	11,5x30	50	873180	81,98	1 pc.
F 2986/600 FL	600	11,5x30	50	193134	98,38	1 pc.
F 2986/2 FL	2000	11,5x30	50	043750	163,97	5 x 2 m
F 2986/3 FL	3000	11,5x30	50	193165	163,97	2 x 3 m
F 2986/6 FL	6000	11,5x30	50	032204	163,97	6 m
E3 2986/3 E3L	3000	11,5x30	50	342228	150,02	5 x 3 m
E5 2986/3 E5L	3000	11,5x30	50	728923	151,53	5 x 3 m
E5 2986/6 E5L	6000	11,5x30	50	728954	151,54	5 x 6 m



3 STANDARD SUPPORT CONSTRUCTION

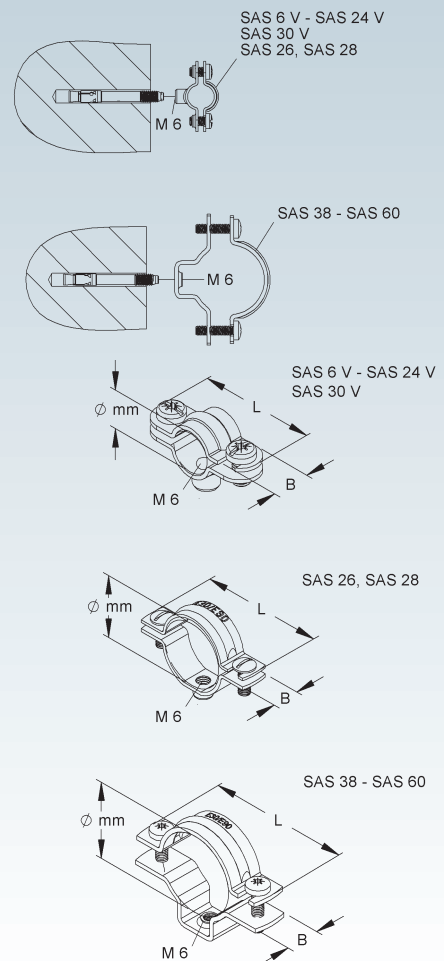
3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW...

Screw Distance Clamp

with female connection thread M6

Model No.	Width B	Length L	For cable-Ø	for metric pipes	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
V SAS 6 V	12	31	5 - 6	-	733002	0,92	50 pcs.
V SAS 8 V	12	33	7,5 - 10	-	733101	0,95	50 pcs.
V SAS 10 V	12	35	10 - 11	-	733200	1,02	50 pcs.
V SAS 12 V	12	37	11 - 13	12	733309	1,20	50 pcs.
V SAS 14 V	12	39	13 - 15	-	733408	1,25	50 pcs.
V SAS 16 V	12	44	15 - 17	16	733507	1,32	50 pcs.
V SAS 18 V	12	45	17 - 19	-	733606	1,40	50 pcs.
V SAS 20 V	12	45	19 - 21	20	733705	1,46	50 pcs.
V SAS 22 V	12	47	21 - 23	-	733804	1,55	50 pcs.
V SAS 24 V	12	49	23 - 25	25	733903	1,59	50 pcs.
V SAS 26 V	12	54	25 - 27	25	734009	1,64	50 pcs.
G SAS 28	12	56	27 - 29	-	734108	1,75	100 pcs.
V SAS 30 V	12	58	28 - 30	-	734207	1,82	50 pcs.
G SAS 38	16	69	29 - 38	32	734603	5,13	25 pcs.
G SAS 47	16	79,5	38 - 47	40	734948	6,01	20 pcs.
G SAS 55	18	89	47 - 55	50	735303	7,44	20 pcs.
G SAS 60	18	100	55 - 63	63	735501	8,31	20 pcs.

for cables and electrical installation conduits acc. to DIN EN 61386-21



Conduit- and Cable Distance Clamp

with female connection thread M6

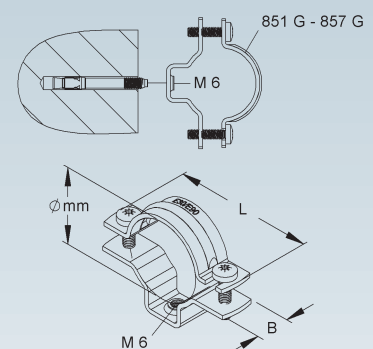
Model No.	Width B	Length L	For cable-Ø	for metric pipes	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
S 851 G	14	49,5	15 - 19	16	012800	2,40	50 pcs.
S 852 G	14	53	19 - 24	20	013104	2,62	50 pcs.
S 853 G	14	59	24 - 29	25	013203	4,07	50 pcs.
S 854 G	16	69	29 - 38	32	013302	5,13	25 pcs.
S 855 G	16	79,5	38 - 47	40	013401	6,01	20 pcs.
S 856 G	18	89	47 - 55	50	013500	7,49	20 pcs.
S 857 G	18	100	55 - 63	63	013609	8,31	20 pcs.
F 851 G F	14	49,5	15 - 19	16	923304	2,52	50 pcs.
F 852 G F	14	53	19 - 24	20	923328	2,75	50 pcs.
F 853 G F	14	59	24 - 29	25	923342	4,28	50 pcs.
F 854 G F	16	69	29 - 38	32	923366	5,39	25 pcs.
F 855 G F	16	79,5	38 - 47	40	923380	6,32	20 pcs.
F 856 G F	18	89	47 - 55	50	923403	7,88	20 pcs.
F 857 G F	18	100	55 - 63	63	923427	8,74	20 pcs.
E5 851 G E5	14	49,5	15 - 19	16	923441	2,44	50 pcs.
E5 852 G E5	14	53	19 - 24	20	923465	2,66	50 pcs.
E5 853 G E5	14	59	24 - 29	25	923489	4,14	50 pcs.
E5 854 G E5	16	69	29 - 38	32	923502	5,21	25 pcs.
E5 855 G E5	16	79,5	38 - 47	40	923526	6,12	20 pcs.
E5 856 G E5	18	89	47 - 55	50	923540	7,62	20 pcs.
E5 857 G E5	18	100	55 - 63	63	923564	8,45	20 pcs.

for screwing onto screw anchors up to 8 mm thread length

for cables and electrical installation conduits acc. to DIN EN 61386-21

In version S, the screws are galvanised.

In version F, the screws are made of stainless steel E3.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E _____ gemäß DIN 4102-12			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
ACHTUNG! Trasse nur für elektrischen Funktionserhalt			



3 STANDARD SUPPORT CONSTRUCTION

3.3 Cable ladder KL...

Like the installation systems vertical cable ladders and clamps, the KL 60... of the standard support construction also fulfils the exact specifications and definitions of DIN 4102 Part 12 of November 1998.

With this installation system, we fulfil the requirements regarding the permeability of water in the area of sprinkler systems according to the VDE CEA guideline, provided the

function maintenance cables used have VDS approval.

Their classification as a standard support system allows them to be combined with any circuit integrity maintenance cable/routing that has a valid general test certificate from the building authorities regulating installation on standard support construction.

Support span $a \leq 1,2 \text{ m}$
Cable load $q \leq 20 \text{ kg/m}$

This laying option for horizontal cable laying fulfils all criteria of the standard support construction according to DIN 4102 part 12 for the circuit integrity maintenance classes E30 to E90. The cable ladder with a rail height of 60 mm is available in widths of 200, 300 and 400 mm.

To increase the support surface, the cable ladder KL... has a rung spacing of 150 mm. The rungs are C-profile 2970 with a slot width of 16 mm, suitable for cable U-clamps type B... .

The joint connection is made with two KLVB 60/4 splice plates and 4 FLM 8X13 F mushroom-head bolts each.

For wall mounting, brackets KTAG 200, KTAG 300 and KTAG 400 with welded square tube at the bracket tip are used. With the help of the square tube, the required additional suspension with threaded rod M 10 or M 12 can be led either vertically to the ceiling or, using the bracket adapter WAWG 12, back to the wall at 45°.

The threaded rod can be fixed directly in the ceiling with an approved dowel. Optionally, the DBG 12 ceiling

bracket can be used for this purpose, which can be used to compensate for deviations in the drill hole spacing or unevenness of the building ground.

Alternatively, the installation options with KTAG... and KTUG... can also be carried out with KTA and KTU and the bracket adapter KAWG 12 (exception when using WAWG 12). By means of the bracket adapter KAWG 12, the required additional suspension can be mounted on the bracket tip. It replaces the welded-on square tube of the KTAG or KTUG.

Wall mounting can alternatively be done with the wall bracket KTAF 200, KTAF 300 and KTAF 400. With this extension arm, the additional suspension at the tip of the bracket is not necessary.

The wall bracket is anchored with a $\geq \text{M12}$ screw.

The material requirement

of the suspension construction per suspension unit:

Overhead hanger HUF 50/...

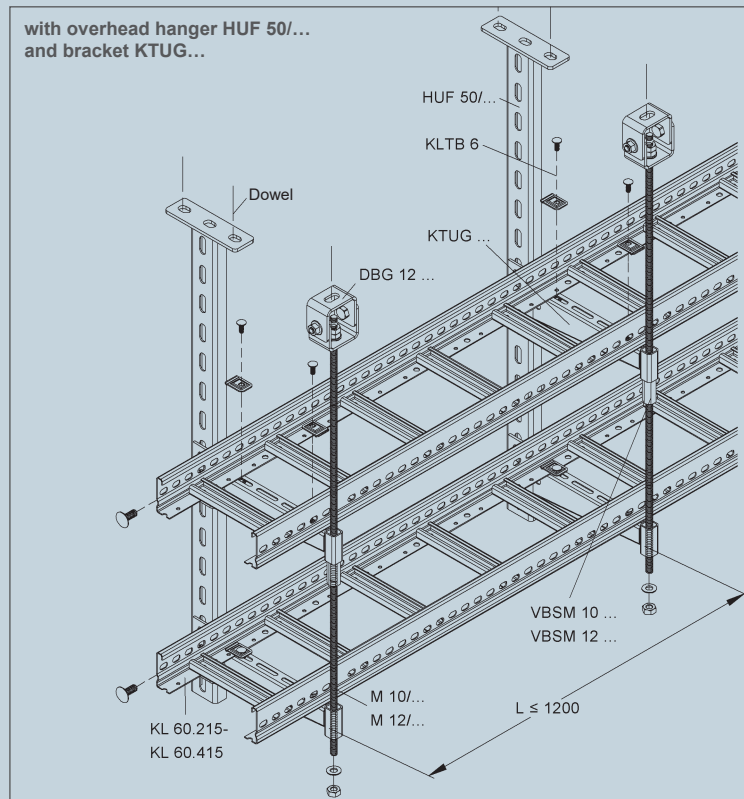
Designation	Model No.		
Overhead hanger	HUF 50/...	1	1
Bracket or bracket with bracket adapter	KTUG 200 - 400	1	2
	KTU 200 - 400	1	2
	KAWG 12	1	2
Threaded rod	M 10/... resp. M 12/...	1	2
Junction sleeve	VBSM 10 resp. VBSM 12	-	1
Ceiling bracket	DBG 12 (optional)	1	1
Cable ladder fastening	KLTB 6	2	4
Dowel (overhead hanger)	M10	2	2
Dowel (threaded rod)	M10 resp. M12	1	1

Overhead hanger HDUF 50/...

Designation	Model No.									
Overhead hanger	HDUF 50/...	1	1	1	1	1	1	1	1	1
Bracket or bracket with bracket adapter	KTUG 200 - 400	1	2	2	3	4	3	4	5	6
	KTU 200 - 400	1	2	2	3	4	3	4	5	6
	KAWG 12	1	2	2	3	4	3	4	5	6
Threaded rod	M 10/... resp. M 12/...	1	2	2	3	4	3	4	5	6
Junction sleeve	VBSM 10 resp. VBSM 12	-	-	1	1	2	2	2	3	4
Ceiling bracket	DBG 12 (optional)	1	2	1	2	2	1	2	2	2
Cable ladder fastening	KLTB 6	2	4	4	6	8	6	8	10	12
Dowel (overhead hanger)	M10	2	2	2	2	2	2	2	2	2
Dowel (threaded rod)	M10 resp. M12	1	2	1	2	2	1	2	2	2

Ceiling mounting

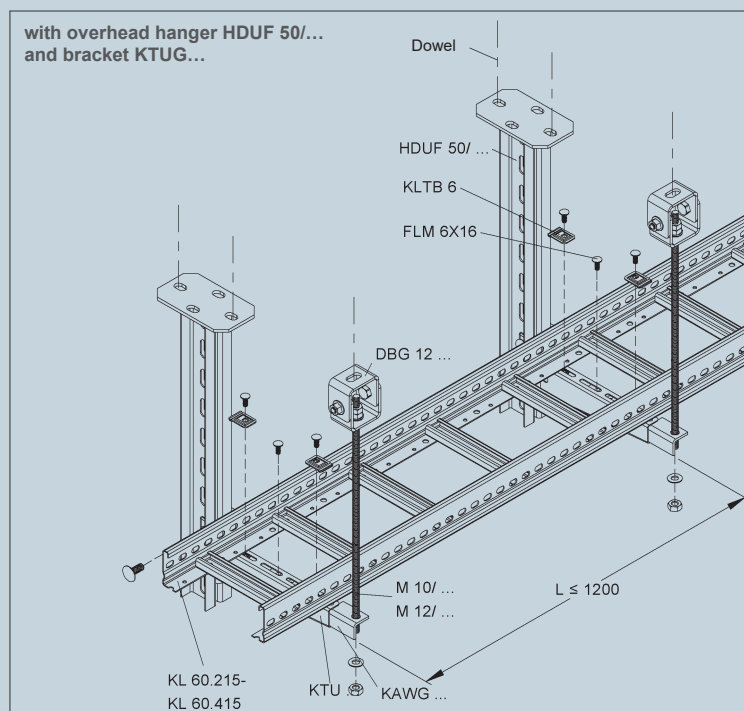
Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 20$ kg/m



Cable ladders with a rail height of 60 mm, in widths of 200 to 400 mm (KL 60.215 - KL 60.415) are used for ceiling installation. The connection of two cable ladders KL 60... are connected by means of the longitudinal splice plates KLV 60/4 with four mushroom-head bolts FLM 8X13 F per splice plate. The cable ladders are fastened to the brackets with two cable ladder fasteners KLTB 6.

1. The threaded rod can also be fastened directly to the solid ceiling without the ceiling bracket DBG 12 using fasteners that have been proven in terms of fire protection.
2. For 2 and 3-layer suspensions, the junction sleeve VBSM 10/VBSM 12 must be arranged.

The explanations and notes of the expert judgement report on the standard support construction must be taken into account.



The material requirement

of the suspension construction per suspension unit:

KTAG... and KTA...

Designation	Model No.			
Wall bracket	KTAG 200 - 400	1	2	3
or wall bracket with bracket adapter	KTA 200 - 400 KAWG 12	1 1	2 2	3 3
Threaded rod	M 10/... resp. M 12/...	1	2	3
Junction sleeve	VBSM 10 resp. VBSM 12	-	1	2
Ceiling bracket	DBG 12 (optional)	1	1	1
Cable ladder fastening	KLTB 6	2	4	6
Dowel (wall bracket)	M10	1	1	3
Dowel (threaded rod)	M10 resp. M12	1	1	1

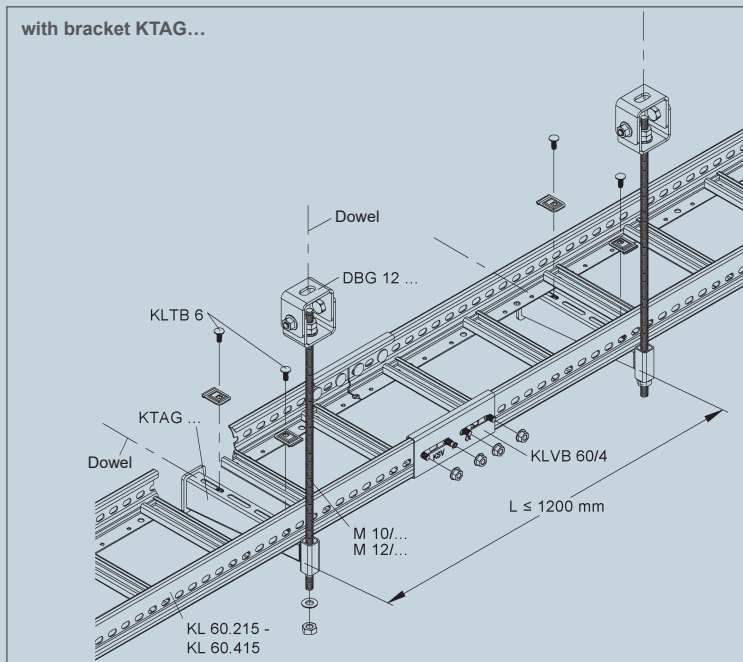
Designation	Model No.		
Wall bracket	KTAG 200 - 400	1	2
Inclined threaded rod	M 12/...	1	1
Threaded rod	M 12/...	-	1
Junction sleeve	VBSM 12	-	1
Hexagon head bolt	SKM 12X70 V	1	1
Wall connection angle 45°	WAWG 12	2	2
Cable ladder fastening	KLTB 6	2	4
Dowel (wall connection angle 45°)	M12	1	1
Dowel (bracket)	M10	1	2

Required inclined threaded rod length

Wall bracket	Threaded rod length	Drill hole spacing A
KTAG 200	390 mm	255 mm
KTAG 300	530 mm	355 mm
KTAG 400	670 mm	455 mm

Wall/ceiling mounting

Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 20$ kg/m



Cable ladders with a rail height of 60 mm, in widths of 200 to 400 mm (KL 60.215 - KL 60.415) are used for ceiling and wall mounting. The connection of two cable ladders KL 60... is made via the longitudinal splice plate KLVB 60/4 with four mushroom-head bolt FLM 8X13 F per splice plate.

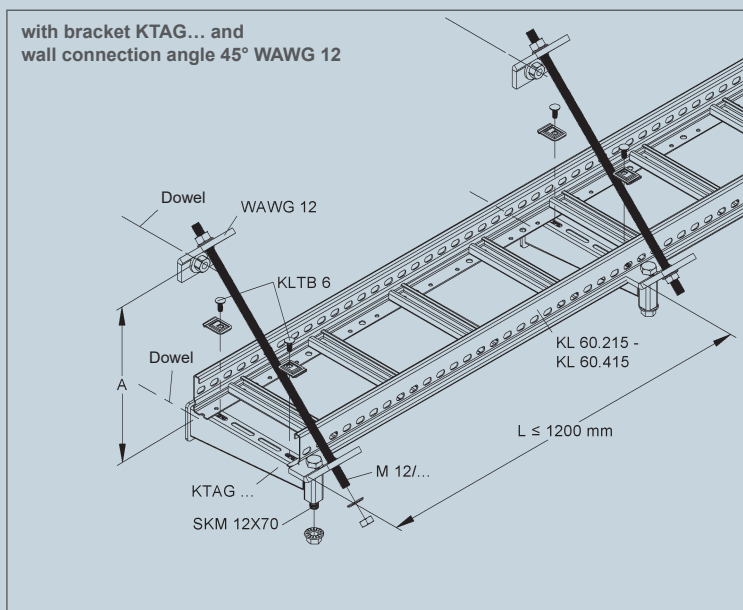
The cable ladders are fixed to the brackets with two cable ladder fasteners KLTB 6.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.

1. The threaded rod can also be fastened directly to the solid ceiling without the ceiling bracket DBG 2 using fasteners that have been proven in terms of fire protection.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.

Wall/wall mounting



The material requirement

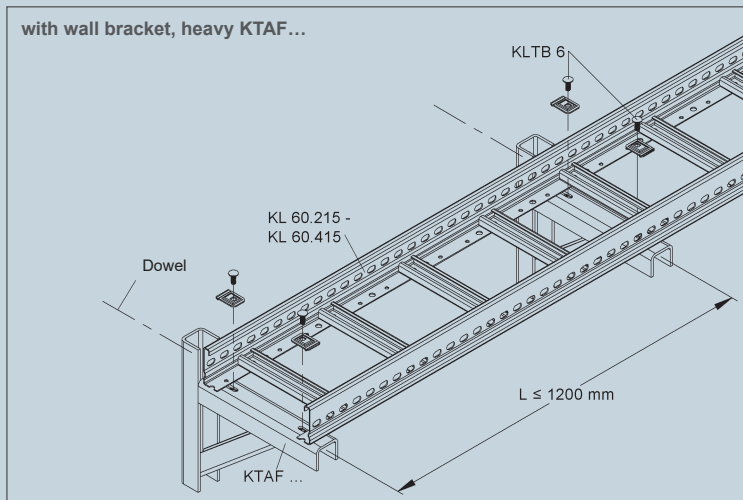
of the suspension structure per suspension unit:

Bracket KTAF...

Designation	Model No.	
Wall bracket, heavy	KTAF 200 - 400	1
Cable ladder fastening	KLTB 6	2
Dowel	M12	1

Wall mounting

Bracket length = cable ladder width . Cable ladder width B 200 - 400 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 20$ kg/m

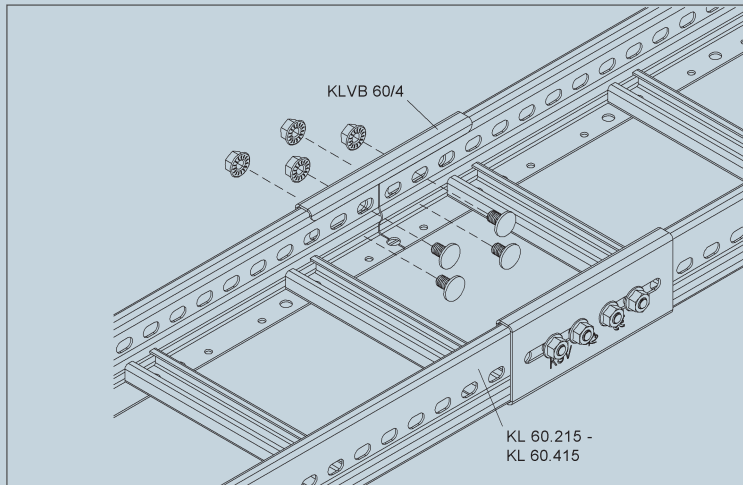


Cable ladders with a rail height of 60 mm, in widths 200 to 400 mm (KL 60.215 - KL 60.415) are used for wall mounting.

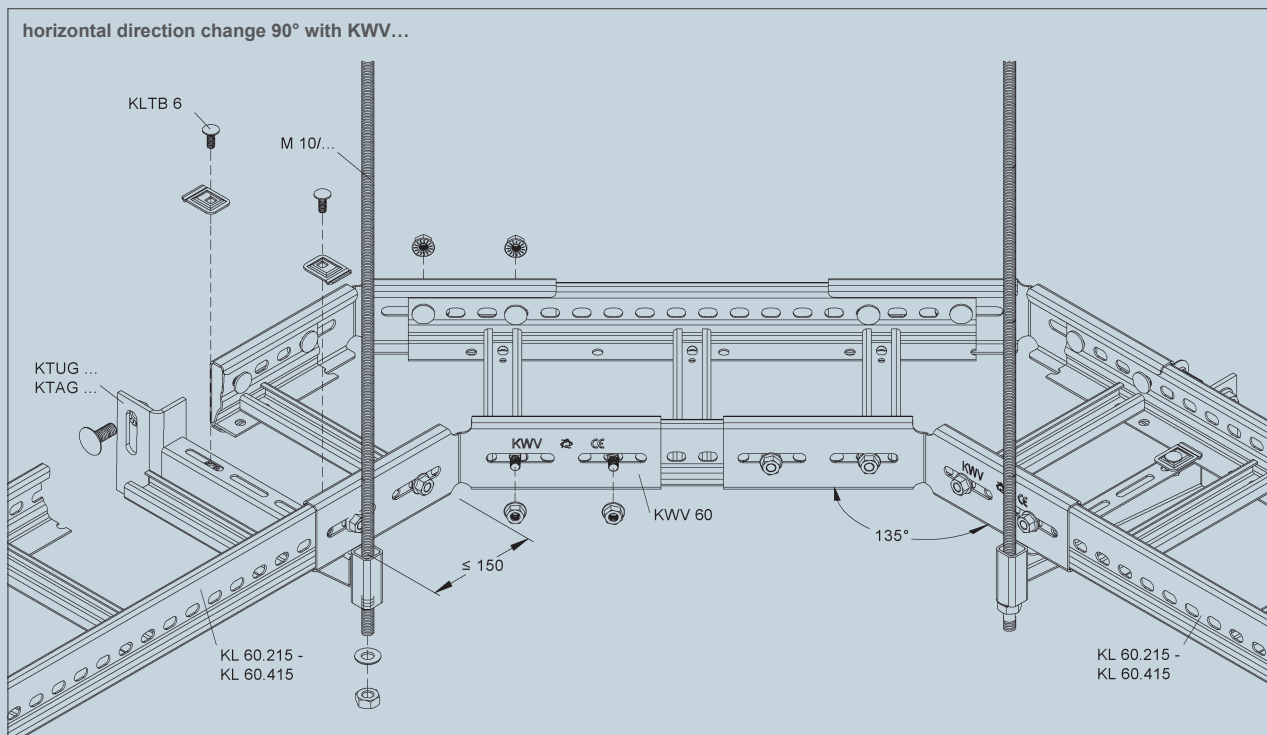
The cable ladders are fastened to the brackets with 2 cable ladder fasteners KLTB 6.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.

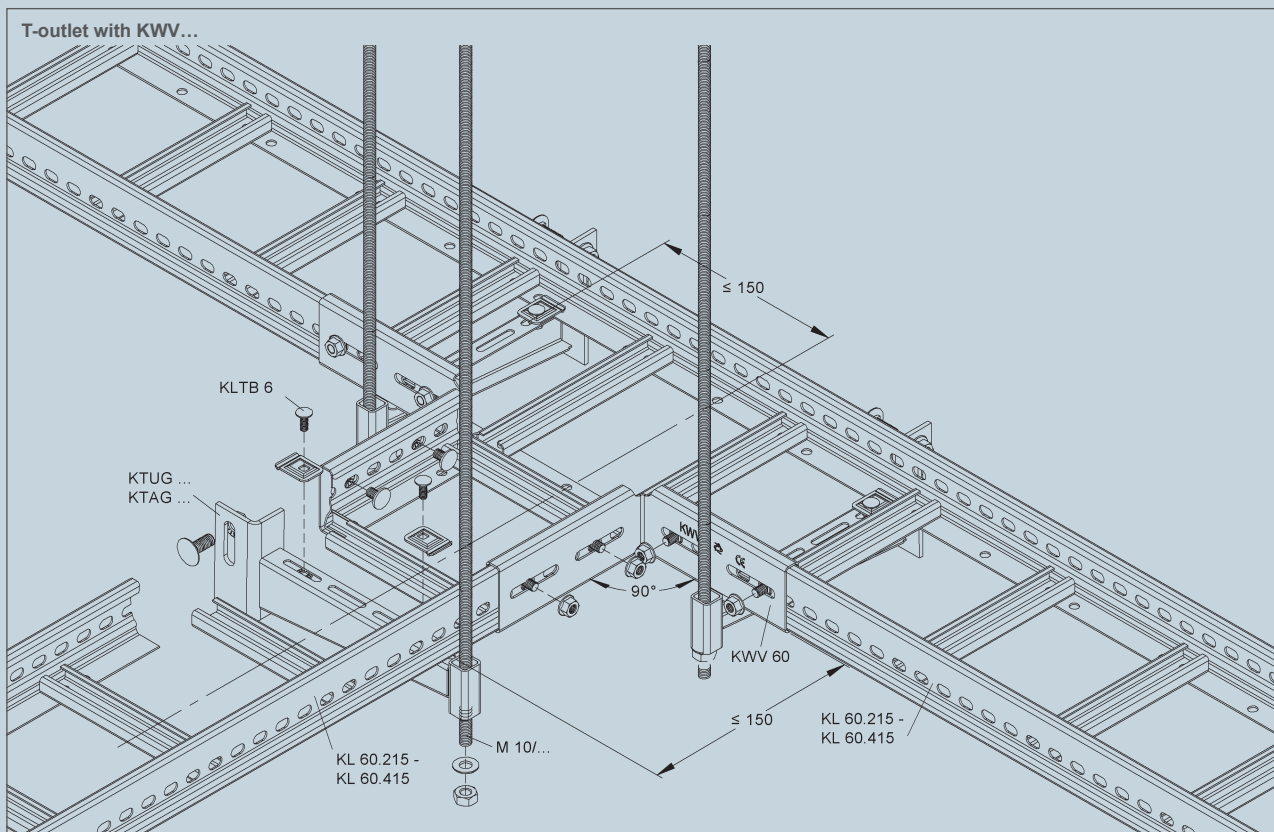
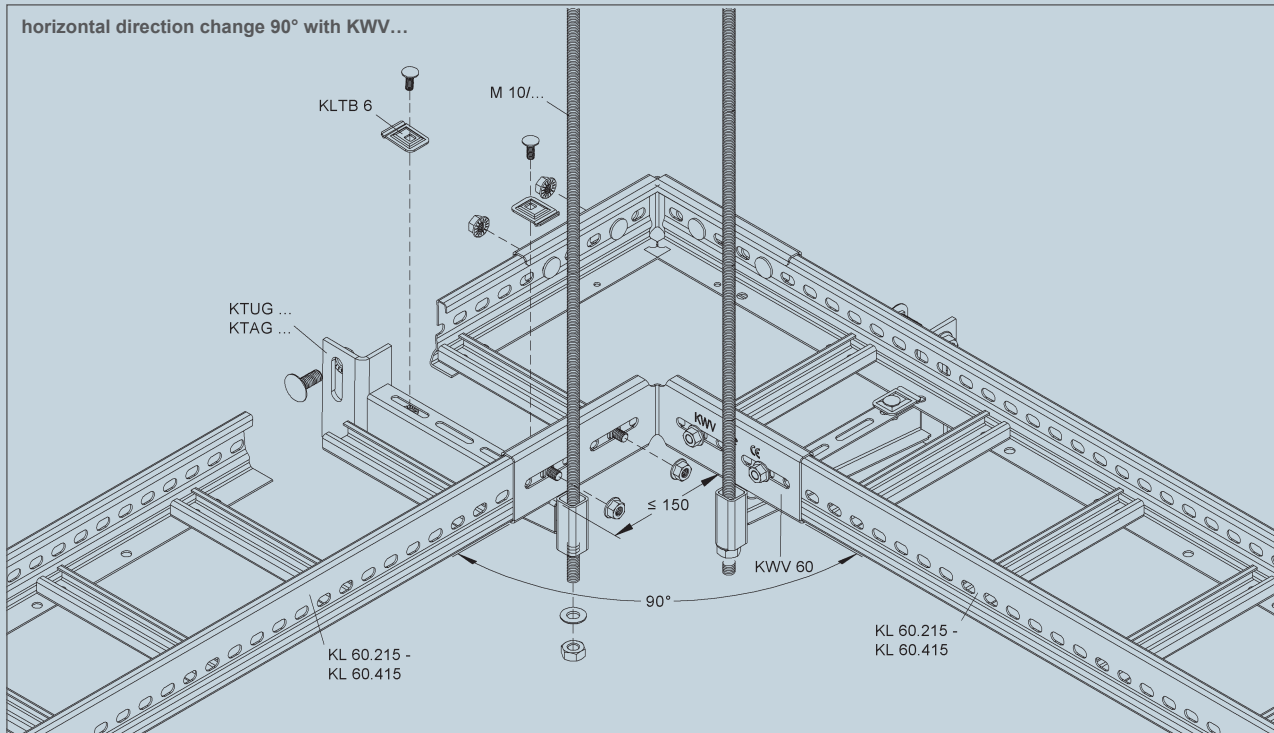
Structure of a joint

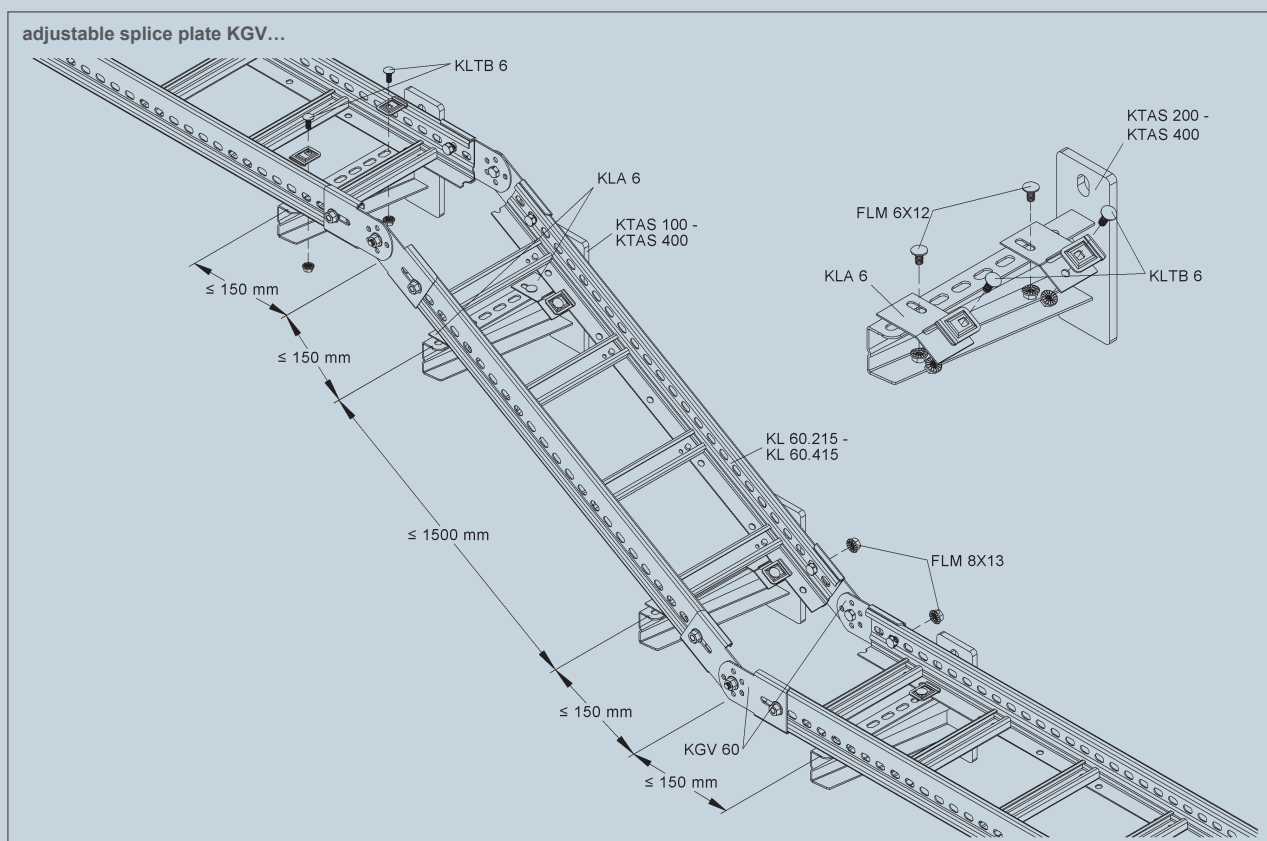


The connection of two cable ladders KL 60... is made via the longitudinal splice plate KLV B 60/4 with four mushroom-head bolts FLM 8X13 F per splice plate according to the adjacent illustration.

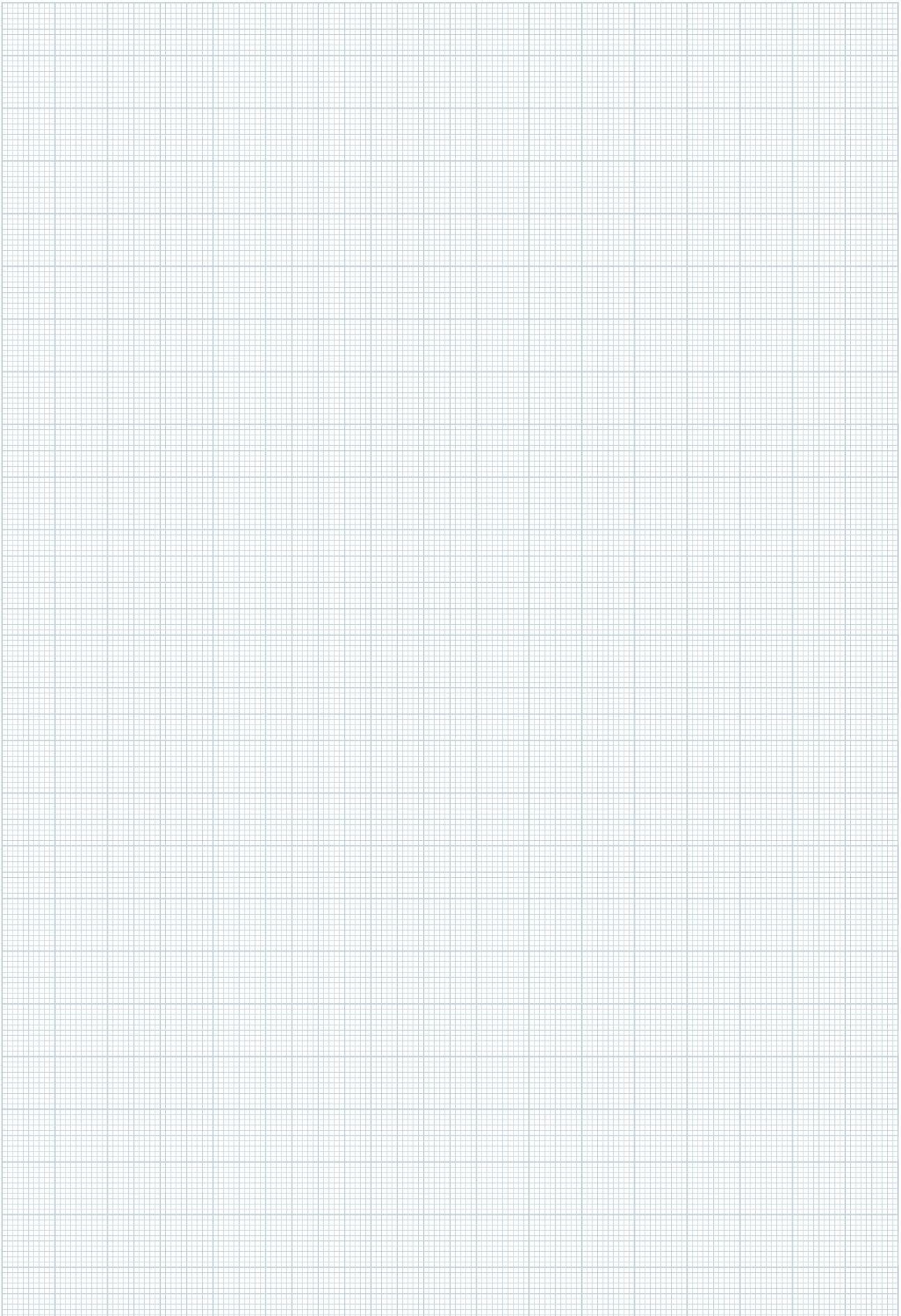


Overhead hanger and wall mounting of fittings for KL...





NOTES



3 STANDARD SUPPORT CONSTRUCTION

3.3 Cable Ladder KL...

Cable Ladder

rung spacing 150 mm, with continuously perforated side profiles, with riveted, upwardly open rungs made of C-profiles with 16 mm slot width

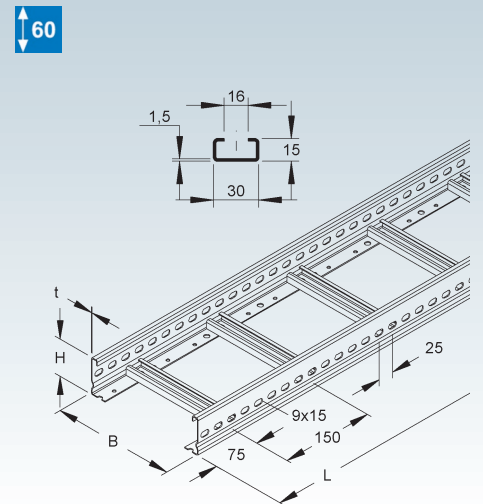
	Model No.	Height H	Width B	Length L	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm	mm			
S	KL 60.215	60	200	6000	1,5	346400	316,52	6 m
S	KL 60.315	60	300	6000	1,5	346509	366,83	6 m
S	KL 60.415	60	400	6000	1,5	346608	417,14	6 m
F	KL 60.215 F	60	200	6000	1,5	815302	349,00	6 m
F	KL 60.315 F	60	300	6000	1,5	815333	404,34	6 m
F	KL 60.415 F	60	400	6000	1,5	815364	459,69	6 m

Cable ladder length also available in 3 m (same price per meter).

Please order the necessary splice plates separately.

Requirement: 2 pieces KLVB 60/4 per joint

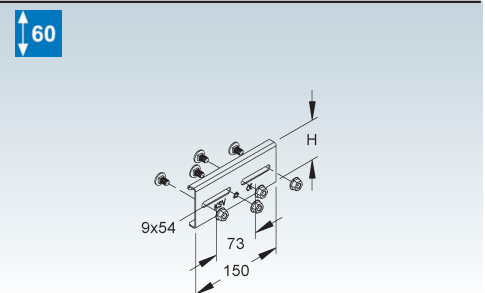
You can find suitable U-clamps in chapter "3.2 Clamps SAS..., 85... and B... and BU... with / without Long Trough LW...".



Splice Plate

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	KLVB 60/4 S	60	4 FLM 8X13 F	188123	25,64	20 pcs.
F	KLVB 60/4	60	4 FLM 8X13 F	346707	27,44	20 pcs.

Requirement: 2 pieces per joint

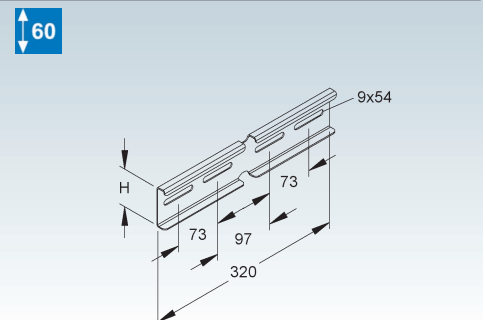


Angle Connector

	Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	KWV 60 S	60	320	4 FLM 8X13 F	290024	45,10	20 pcs.
F	KWV 60 F	60	320	4 FLM 8X13 F	290048	48,85	20 pcs.

for simple on-site production of horizontal changes of direction of any angle

Requirement: 2 pieces per joint

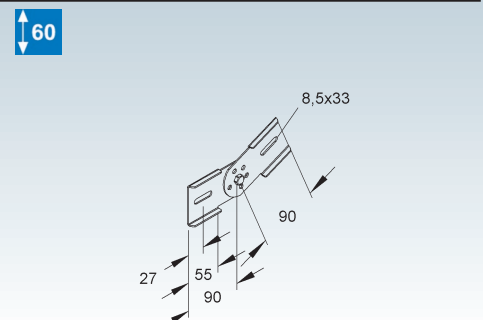


Joint Connector

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	KGV 60 S	60	2 FLM 8X13 F	289929	26,85	10 pcs.
F	KGV 60 F	60	2 FLM 8X13 F	289943	29,16	10 pcs.

for simple on-site creation of height offsets in horizontal cable systems

Requirement: 2 pieces per joint

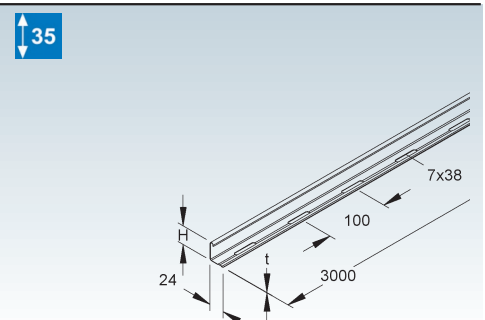


Barrier Strip

	Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm				
S	RW 35	30	0,75	4 FLM 6X12	213504	35,10	10 x 3 m
F	RW 35 F	30	0,75	4 FLM 6X12 F	213603	38,50	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.

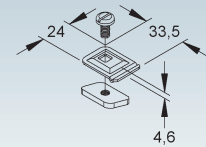


Barrier Strip Fastening Clamp

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	KLWC 16	1 FK 6X12 V, GSM 406 G	289707	2,64	50 pcs.
F	KLWC 16 F	1 FK 6X10 E3, GSM 406 E3	570508	2,70	50 pcs.

for fastening barrier strips on cable ladders with rungs of 16 mm slot width

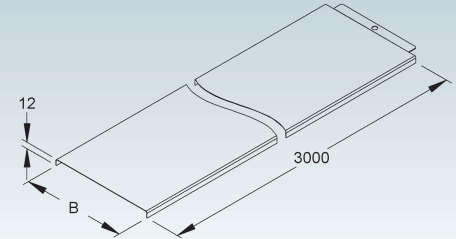
Insertable at any position in the profile slot.



Cover for Cable Tray/-Ladder

with joint strip

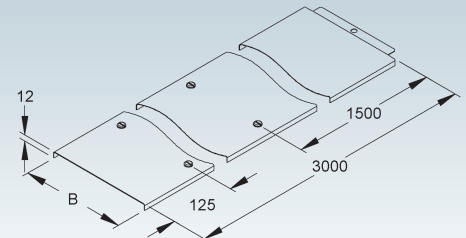
	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RD 200	202	260508	132,51	2 x 3 m
S	RD 300	302	260706	230,09	2 x 3 m
S	RD 400	402	260805	334,64	2 x 3 m
F	RD 200 F	202	262700	145,77	2 x 3 m
F	RD 300 F	302	262908	253,10	2 x 3 m
F	RD 400 F	402	263004	368,10	2 x 3 m



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RDV 200	202	261604	133,44	2 x 3 m
S	RDV 300	302	261802	231,02	2 x 3 m
S	RDV 400	402	261901	335,56	2 x 3 m
F	RDV 200 F	202	263806	146,79	2 x 3 m
F	RDV 300 F	302	264001	254,13	2 x 3 m
F	RDV 400 F	402	264100	369,12	2 x 3 m



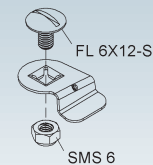
Turning Bolt

incl. locking nut acc. to DIN EN ISO 10511

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RDRS 9	1 FL 6X12-S V, 1 SMS 6 V	269907	1,20	20 pcs.
F	RDRS 9 F	1 FL 6X12-S E3, 1 SMS 6 E3	563463	1,60	20 pcs.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

Delivery unassembled loose



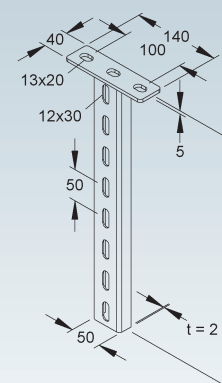
Overhead Hanger

U-profile

	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HUF 50/200	201	168705	48,18	20 pcs.
F	HUF 50/250	255	168804	55,68	20 pcs.
F	HUF 50/300	301	168903	61,97	20 pcs.
F	HUF 50/400	401	169009	75,78	20 pcs.
F	HUF 50/500	501	169108	89,57	20 pcs.
F	HUF 50/600	601	169207	103,37	10 pcs.
F	HUF 50/700	701	169306	117,16	1 pc.
F	HUF 50/800	801	169405	130,96	1 pc.
F	HUF 50/900	905	169504	145,35	1 pc.
F	HUF 50/1000	1005	169603	159,15	1 pc.
F	HUF 50/1100	1105	169702	172,94	1 pc.
F	HUF 50/1200	1205	169801	186,74	1 pc.

Total length = length of U-profile inclusive head plate

HUF 50/200 offers limited space for mounting cable trays (length of overhead hanger - height of bracket).



3 STANDARD SUPPORT CONSTRUCTION

3.3 Cable Ladder KL...

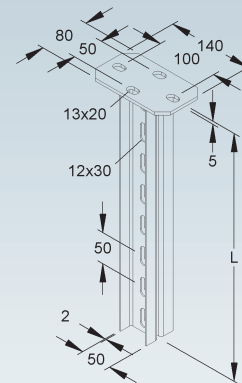
Overhead Hanger

double U-profile

	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HDUF 50/200	201	172702	96,54	1 pc.
F	HDUF 50/250	255	172801	111,53	1 pc.
F	HDUF 50/300	301	172900	124,14	1 pc.
F	HDUF 50/400	401	173006	151,72	1 pc.
F	HDUF 50/500	501	173105	179,31	1 pc.
F	HDUF 50/600	601	173204	206,91	1 pc.
F	HDUF 50/700	701	173303	234,50	1 pc.
F	HDUF 50/800	801	173402	262,09	1 pc.
F	HDUF 50/900	905	173501	290,87	1 pc.
F	HDUF 50/1000	1005	173600	318,47	1 pc.
F	HDUF 50/1100	1105	173709	346,06	1 pc.
F	HDUF 50/1200	1205	173808	373,66	1 pc.
F	HDUF 50/1300	1305	173907	401,25	1 pc.
F	HDUF 50/1400	1405	174003	428,84	1 pc.
F	HDUF 50/1500	1505	174102	456,43	1 pc.

Total length = length of the U-profile incl. the head plate

HDUF 50/200 has a limited amount of space for cable tray equipment (length of the overhead hangers - height of the bracket). The brackets can only be arranged offset in height on both sides.

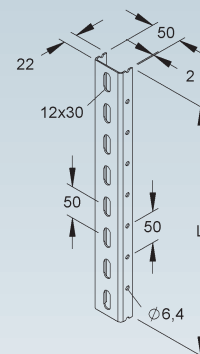


Profile U 50

	Model No.	Length L mm	EAN code	Weight in kg per 100 pcs./m	Smallest packaging unit
S	U 50/200	200	190805	24,68	1 pc.
S	U 50/300	300	190904	37,02	1 pc.
S	U 50/400	400	191000	49,36	1 pc.
S	U 50/500	500	191109	61,70	1 pc.
S	U 50/600	600	191208	74,04	1 pc.
S	U 50/700	700	191307	86,38	1 pc.
S	U 50/800	800	191406	98,72	1 pc.
S	U 50/900	900	191505	111,06	1 pc.
S	U 50/1000	1000	191604	123,40	1 pc.
S	U 50/1500	1500	191703	185,10	1 pc.
S	U 50/2000	2000	191802	123,40	2 m
S	U 50/3000	3000	190607	123,40	3 m
S	U 50/6000	6000	190706	123,40	6 m
F	U 50/200 F	200	872503	27,15	1 pc.
F	U 50/300 F	300	872534	40,72	1 pc.
F	U 50/400 F	400	872565	54,30	1 pc.
F	U 50/500 F	500	872596	67,87	1 pc.
F	U 50/600 F	600	872626	81,44	1 pc.
F	U 50/700 F	700	872657	95,02	1 pc.
F	U 50/800 F	800	872688	108,59	1 pc.
F	U 50/900 F	900	872718	122,17	1 pc.
F	U 50/1000 F	1000	872749	135,74	1 pc.
F	U 50/3000 F	3000	190744	135,74	3 m
F	U 50/6000 F	6000	190768	135,74	6 m

for creating overhead hangers and supporting structures with system components

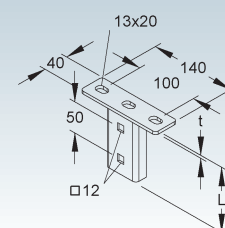
In the hot-dip galvanised version, the side perforation is closed by a zinc skin, but this can be drilled out if necessary.



Screw Head Plate

	Model No.	Total length L mm	Thickness of head plates (t) mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KU 50	105	5	2 FLM 10X25 F	191901	50,35	20 pcs.

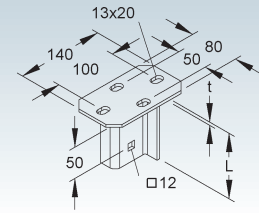
for mounting on straight ceilings



Screw Head Plate

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUD 50	105	5	2 FLM 10X25 F	192007	91,75	10 pcs.

for mounting on straight ceilings

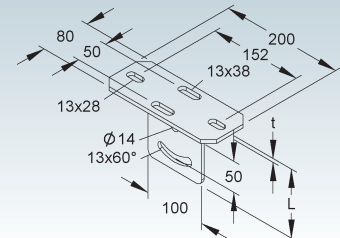


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGV 50	111	6	2 FLM 10X25 F	192106	120,92	10 pcs.

for mounting on sloping walls

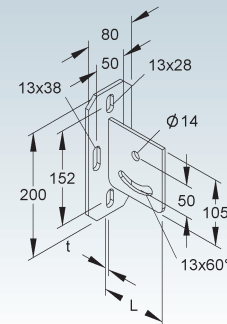


Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGH 50	106	6	2 FLM 10X25 F	192205	120,92	10 pcs.

for mounting on sloping walls

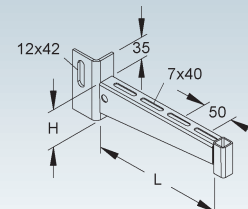


Overhead Hanger-Bracket

standard

Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KTUG 200	60	210	2 FLM 6X12, 1 FLM 10X25 F	344604	50,74	10 pcs.
F KTUG 300	75	310	2 FLM 6X12, 1 FLM 10X25 F	344703	79,45	10 pcs.
F KTUG 400	75	410	2 FLM 6X12, 1 FLM 10X25 F	344802	94,05	10 pcs.

Please order the necessary fastening accessories separately for cable ladders.
Requirement: 2 pieces KLTB 6 F per bracket

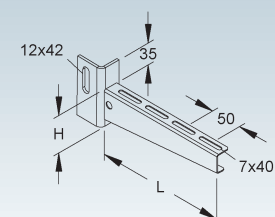


Overhead Hanger-Bracket

Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KTU 200	60	210	2 FLM 6X12, 1 FLM 10X25 F	174409	45,20	20 pcs.
F KTU 300	75	310	2 FLM 6X12, 1 FLM 10X25 F	174607	73,91	20 pcs.
F KTU 400	75	410	2 FLM 6X12, 1 FLM 10X25 F	174805	88,51	20 pcs.

for mounting overhead hanger in connection with KAWG 12 on HDUF 50/... or HUF 50/...

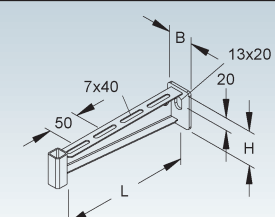
Please order the necessary fastening accessories separately for cable ladders.
Requirement: 2 pieces KLTB 6 F per bracket



Wall Bracket

Model No.	Height H	Width B	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
F KTAG 200	55	40	210	2 FLM 6X12	344901	32,95	20 pcs.
F KTAG 300	65	50	310	2 FLM 6X12	345007	64,61	20 pcs.
F KTAG 400	90	50	410	2 FLM 6X12	345106	84,62	10 pcs.

Please order the necessary fastening accessories separately for cable ladders.
Requirement: 2 pieces KLTB 6 F per bracket



3 STANDARD SUPPORT CONSTRUCTION

3.3 Cable Ladder KL...

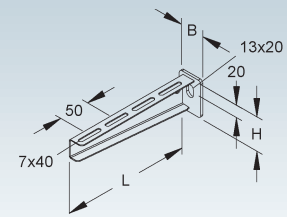
Wall Bracket

	Model No.	Height H mm	Width B mm	Length L mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KTA 200	55	40	210	2 FLM 6X12	187102	27,41	20 pcs.
F	KTA 300	65	50	310	2 FLM 6X12	187300	59,08	20 pcs.
F	KTA 400	75	50	410	2 FLM 6X12	187508	79,08	20 pcs.

for wall mounting in conjunction with KAWG 12

Please order the necessary fastening accessories separately for cable ladders.

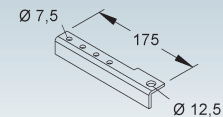
Requirement: 2 pieces KLTB 6 F per bracket



Console Adapter

	Model No.	Length L mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KAWG 12	175	2 FLM 6X16 F	345526	27,79	20 pcs.

for installation with overhead hanger brackets KTU... as well as wall brackets KTA... and TKS brackets with threaded rods M10 or M12

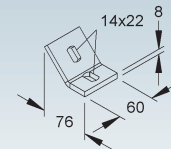


Wall Connection Angle 45°

	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	WAWG 12	345533	33,28	20 pcs.

for wall mounting of the threaded rod at an angle of 45° on the same ground with the wall bracket KTAG...

When used with wall bracket KTAG... please order hexagon head screw SKM 10X70 separately.
When used with wall bracket TKS... please order hexagon head screw SKM 10X25 separately.



Wall Bracket

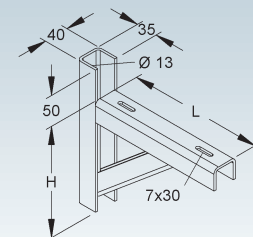
heavy

	Model No.	Height H mm	Length L mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	KTAF 200	180	221	2 FLM 6X12	345120	191,30	1 pc.
F	KTAF 300	240	321	2 FLM 6X12	345144	265,58	1 pc.
F	KTAF 400	300	421	2 FLM 6X12	345168	343,81	1 pc.

for the installation of cable trays and cable ladders without additional threaded rod

Please order the necessary fastening accessories separately for cable ladders.

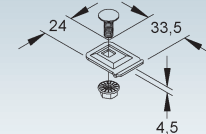
Requirement: 2 pieces KLTB 6 F per bracket



Cable Ladder Fastening

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	KLTB 6	1 FLM 6X16 F	282708	2,13	50 pcs.
F	KLTB 6 F	1 FLM 6X16 F	282722	2,22	50 pcs.

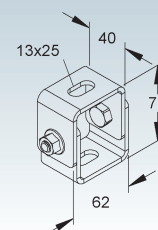
Clamping piece for fastening the cable ladders on brackets



Ceiling Bracket

with joint

	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	DBG 12	345502	44,70	20 pcs.



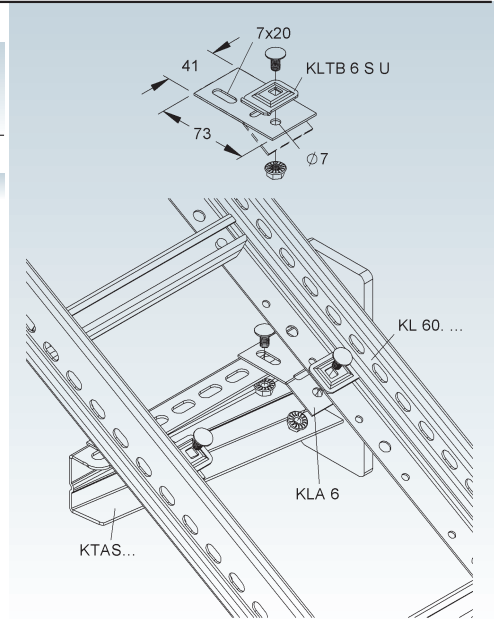
Cable Tray Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S KLA 6	1 FLM 6X12, 1 KLTB 6 S U	287901	4,95	25 pcs.

for fastening cable ladders running at an angle to the bracket

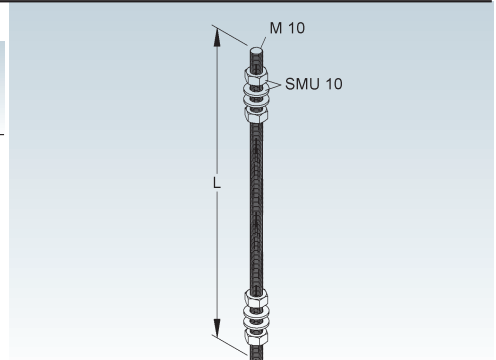
Requirement: 2 pieces per bracket

By bending the fastening tongue by hand, the cable tray fastening is adapted to the gradient angle.



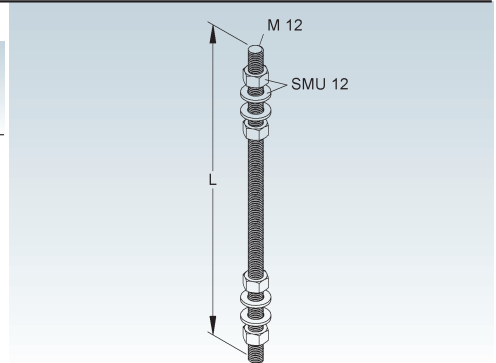
Threaded Rod, M10

Model No.	Length L	Resistance class	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
V M 10/200	200	4.8	4 SMU 10	202409	16,10	100 pcs.
V M 10/300	300	4.8	4 SMU 10	202508	21,10	100 pcs.
V M 10/400	400	4.8	4 SMU 10	202607	26,10	25 pcs.
V M 10/500	500	4.8	4 SMU 10	202706	31,10	25 pcs.
V M 10/600	600	4.8	4 SMU 10	202805	36,10	25 pcs.
V M 10/700	700	4.8	4 SMU 10	202904	41,10	25 pcs.
V M 10/800	800	4.8	4 SMU 10	203000	46,10	25 pcs.
V M 10/900	900	4.8	4 SMU 10	203109	51,10	25 pcs.
V M 10/1000	1000	4.8	4 SMU 10	203208	56,10	25 pcs.



Threaded Rod, M12

Model No.	Length L	Resistance class	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
V M 12/200	200	4.8	4 SMU 12	203512	23,79	100 pcs.
V M 12/300	300	4.8	4 SMU 12	203529	31,05	100 pcs.
V M 12/400	400	4.8	4 SMU 12	203536	38,31	10 pcs.
V M 12/500	500	4.8	4 SMU 12	203543	45,57	10 pcs.
V M 12/600	600	4.8	4 SMU 12	203550	52,83	10 pcs.
V M 12/800	800	4.8	4 SMU 12	203574	67,35	10 pcs.
V M 12/1000	1000	4.8	4 SMU 12	345809	81,87	20 pcs.

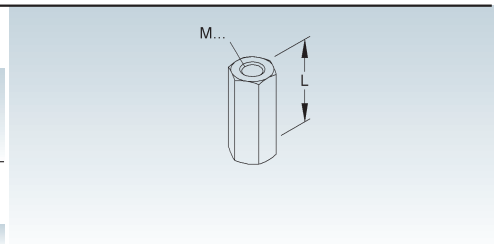


Junction Sleeve

hexagonal

Model No.	Thread M	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm			
V VBSM 10	10	40	345601	2,30	50 pcs.
V VBSM 12	12	40	345700	4,40	50 pcs.

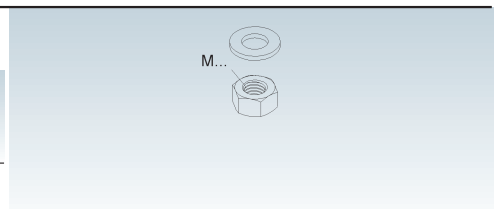
for connecting threaded rods



Hexagon Nut acc. to DIN EN ISO 4032

incl. washer acc. to DIN EN ISO 7089

Model No.	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V SMU 10	10	203703	1,53	50 pcs.
V SMU 12	12	344406	2,32	40 pcs.



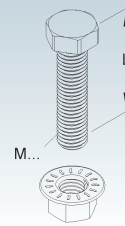
3 STANDARD SUPPORT CONSTRUCTION

3.3 Cable Ladder KL...

Hexagon Screw acc. to DIN EN ISO 4017

incl. toothed flange nut acc. to DIN EN 1661

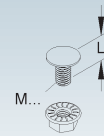
Model No.	Thread M	Length L mm	Strength class screw / nut	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V SKM 12X70 V	12	70	10.9 / 10	207565	8,44	20 pcs.



Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

Model No.	Thread M	Length L mm	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V FLM 6X12	6	12	-	206209	0,79	10 pcs.
F FLM 8X13 F	8	13	8.8	206605	2,00	10 pcs.
F FLM 10X25 F	10	25	8.8	206902	4,00	50 pcs.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

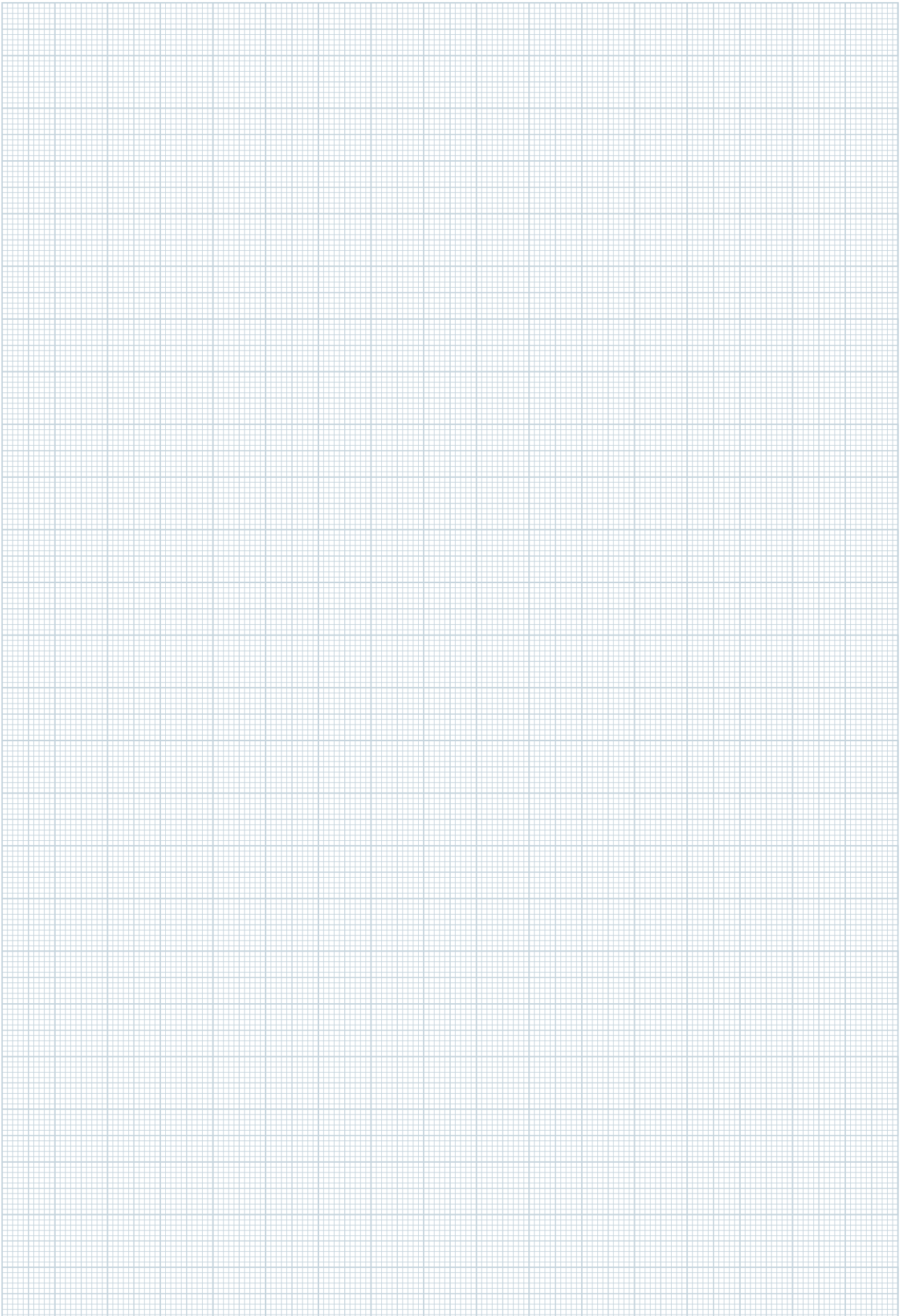
Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

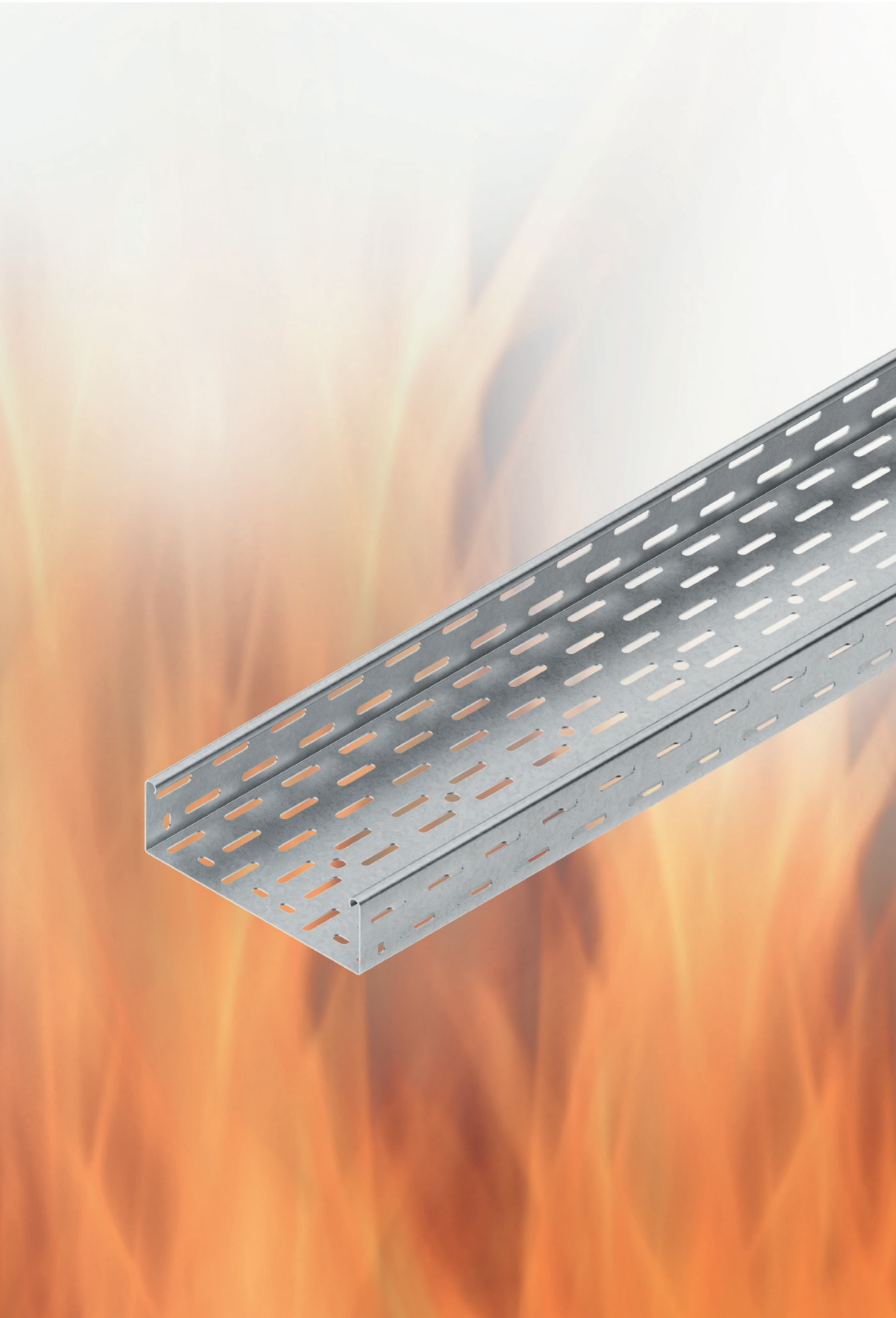
for marking functional maintenance cable trays

 Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E _____ gemäß DIN 4102-12			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
ACHTUNG! Trasse nur für elektrischen Funktionserhalt			



NOTES





3 STANDARD SUPPORT CONSTRUCTION

3.4 Cable Tray RS...

With the RS 60... cable tray installation system, we offer you the last installation type of the standard support construction, so that you can implement all installations required in the building project with circuit integrity maintenance on the basis of the standard support construction. Of course, the exact specifications and definitions of DIN 4102 Part 12 of November 1998, such as rail height, tray widths,

hole proportion, material thickness, max. permissible cable dead weight and max. permissible fastening spacing, are fulfilled. The classification as a standard support system allows the combination with any function maintenance cable / cable that has a valid general test certificate from the building authorities, which regulates the installation on standard support construction.

Support span $a \leq 1,2 \text{ m}$
Cable load $q \leq 10 \text{ kg/m}$

RS... cable trays with a rail height of 60 mm in widths of 100 to 300 mm are used. The joint connections are made with two internal lug splice plates RVV 60 and a joint bar RSLB... .

For wall mounting, brackets TKS ..., KTAG ... or KTA ... with bracket adapter KAWG 12 can be used. The additional M10 threaded rod suspension is fixed directly in the ceiling or by means of ceiling bracket DBG 12. Alternatively, the threaded rod can be anchored to the wall at 45° using bracket adapter WAWG 12 (not applicable at the same time as KAWG 12).

With the wall brackets KTAF 200 and KTAF 300, wall mounting can be carried out without an additional threaded rod.

For ceiling mounting, suspended brackets TKS... up to a length of 900 mm and brackets TKS 150 to TKS 350 or brackets TKS 100 to TKS 300 with console adapter KAWG 12, overhead hanger HUF 50... resp. HDUF 50... up to a length of 1200 or 1500 mm and bracket KTUG 100 to KTUG 300 or bracket KTA 100 to KTA 300 with bracket adapter KAWG 12, support console TKSUG ... or pendant suspension C-profile 2991/... are available. The back of

the TKS brackets must be reinforced with the TKSD 20 distance piece. The additional M 10 threaded rod suspension is fixed directly in the ceiling or by means of a DBG 12 ceiling bracket. U-profiles and head plates are available for greater flexibility on site.

With the fittings and the splice plates (from page  180), any horizontal and/or vertical change of direction can be realised on site. All changes of direction must be supported by an appropriate supporting structure in the immediate vicinity of the joints (distance $\leq 150 \text{ mm}$).

Cable trays running at an angle at height jumps can be fastened to the bracket KTAS... with cable tray fasteners KLAF 6.

The material requirement

of the suspension structure per suspension unit:

Overhead hanger HUF 50/...

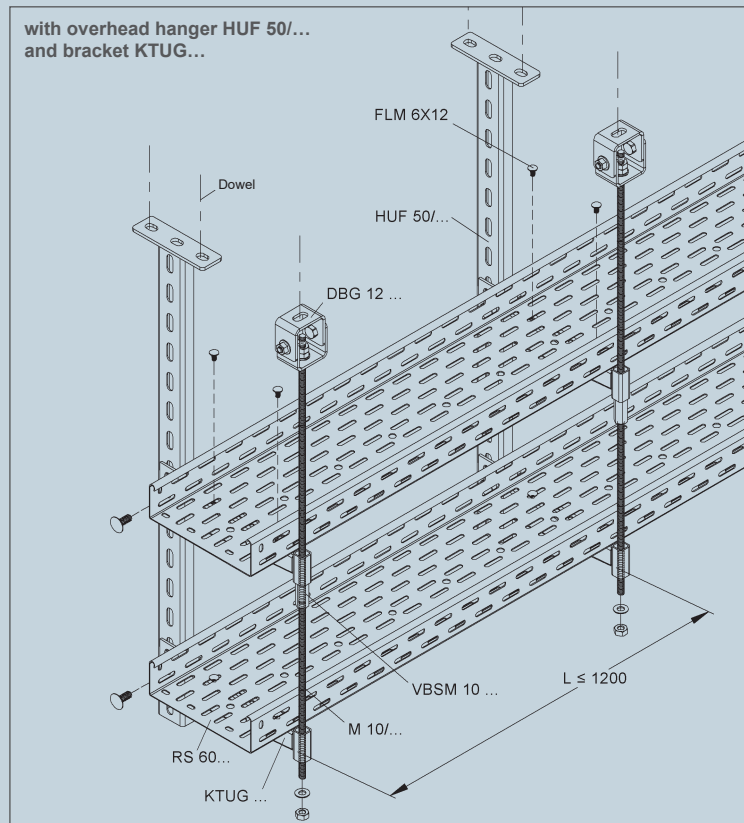
Designation	Model No.			
Overhead hanger	HUF 50/...	1	1	1
Bracket or bracket with bracket adapter	KTUG 100 - 300	1	2	3
	KTU 100 - 300 KAWG 12	1 1	2 2	3 3
Threaded rod	M 10/...	1	2	3
Junction sleeve	VBSM 10	-	1	2
Ceiling bracket	DBG 12 (optional)	1	1	1
Dowel	M10	3	3	3

Overhead hanger HDUF 50/...

Designation	Model No.									
Overhead hanger	HDUF 50/...	1	1	1	1	1	1	1	1	1
Bracket or bracket with bracket adapter	KTUG 100 - 300	1	2	2	3	4	3	4	5	6
	KTU 100 - 300 KAWG 12	1 1	2 2	2 2	3 3	4 4	3 3	4 4	5 5	6 6
Threaded rod	M 10/...	1	2	2	3	4	3	4	5	6
Junction sleeve	VBSM 10	-	-	1	1	2	2	2	3	4
Ceiling bracket	DBG 12 (optional)	1	2	1	2	2	1	2	2	2
Dowel	M10	3	4	3	4	4	3	4	4	4

Ceiling mounting

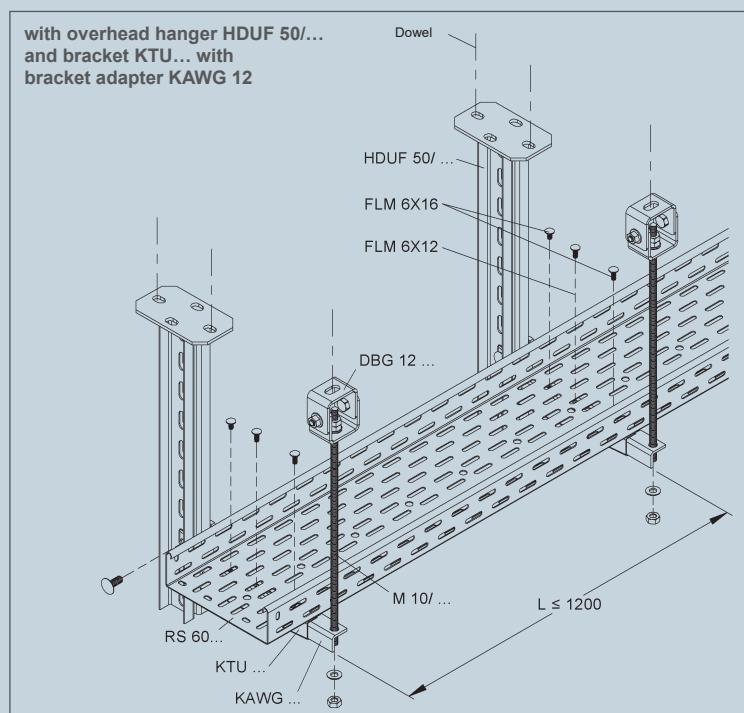
Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 10$ kg/m



Cable trays with a rail height of 60 mm, in widths 100 to 300 mm (RS 60.100 OV - RS 60.300 OV) are used for ceiling installation. The connection of two RS 60... cable trays is made using the RVV 60 splice plates (4 FLM 6X12 per splice plate). The cable trays are fixed to the brackets with 2 mushroom-head bolts (FLM 6X12 / FLM 6X16 F).

1. The threaded rod can also be fastened directly to the solid ceiling without the adjustable ceiling bracket DBG 12 using fasteners that have been proven to meet fire protection requirements.
2. To simplify the installation, the VBSM 10 junction sleeve can be used for 2 and 3-layer suspensions.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.



The material requirement

of the suspension construction per suspension unit:

KTAG... and KTA...

Designation	Model No.			
Wall bracket or wall bracket with bracket adapter	KTAG 100 - 300 KTA 100 - 300 KAWG 12	1 1 1	2 2 2	3 3 3
Threaded rod	M 10/...	1	2	3
Junction sleeve	VBSM 10	-	1	2
Ceiling bracket	DBG 12 (optional)	1	1	1
Dowel	M10	2	3	4
Dowel (wall bracket)	M10	1	1	3
Dowel (threaded rod)	M10 resp. M12	1	1	1

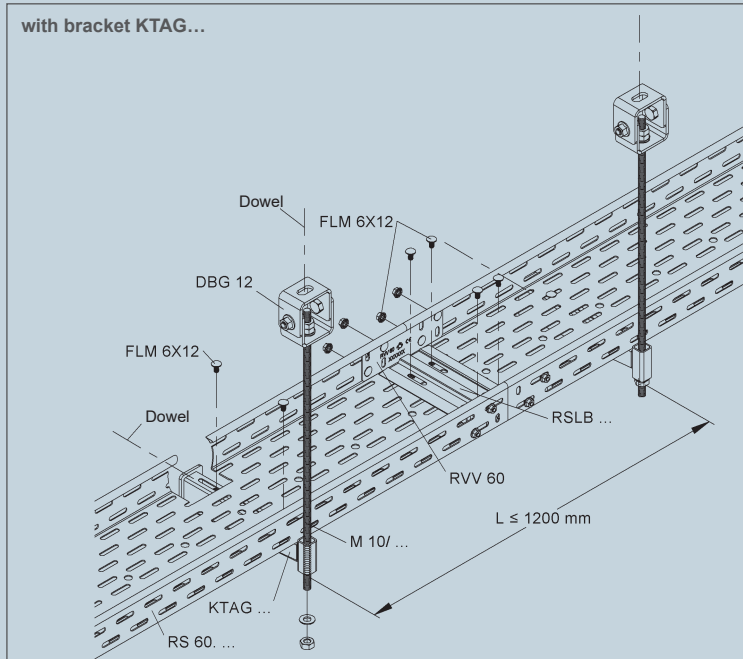
Designation	Model No.		
Wall bracket	KTAG 100 - 300	1	2
Threaded rod	M 10/...	-	1
Inclined threaded rod	M 10/...	1	1
Wall connection angle 45°	WAWG 12	2	2
Junction sleeve	VBSM 10	-	1
Hexagon screw	SKM 10X70 V	1	1
Dowel	M10	2	3
Dowel (wall connection angle 45°)	M12	1	1
Dowel (bracket)	M10	1	2

Required inclined threaded rod length

Wall bracket	Threaded rod length	Drill hole spacing A
KTAG 100	240 mm	155 mm
KTAG 200	390 mm	255 mm
KTAG 300	530 mm	355 mm

Wall/ceiling mounting

Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 10$ kg/m

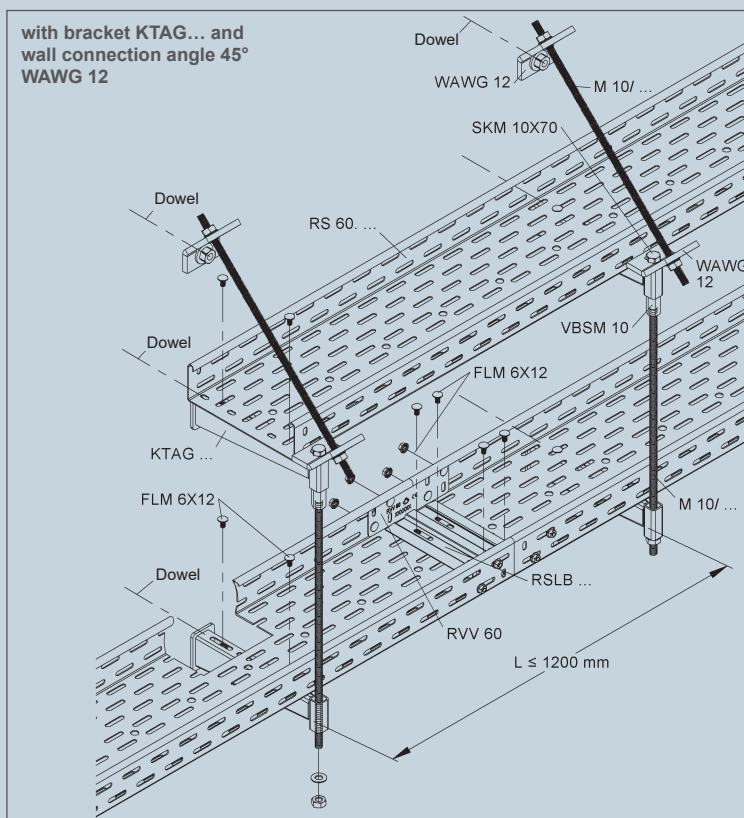


Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RS 60.100 OV - RS 60.300 OV) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 mushroom-head bolts (FLM 6X12 / FLM 6X16 F).

1. The threaded rod can also be fastened directly in the solid ceiling without the adjustable ceiling bracket DBG 12 using fasteners that have been proven in terms of fire protection.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.

Wall/wall mounting



The material requirement

of the suspension construction per suspension unit:

Overhead hanger TKS...

Designation	Model No.			
Overhead hanger	TKS...	1	1	1
Overhead hanger	TKS 100	1	1	1
Distance piece	TKSD 20	4	4	4
Hexagon screw	SKM 10X70 V	1	1	1
Bracket or bracket with bracket adapter	TKS 150 - 350	1	2	3
	TKS 100 - 300	1	2	3
	KAWG 12	1	2	3
Hexagon screw	SKM 10X25 V	1	2	3
Threaded rod	M 10/...	1	2	3
Junction sleeve	VBSM 10	-	1	2
Ceiling bracket	DBG 12 (optional)	1	1	1
Dowel	M10	3	3	3

Support console TKSUG...

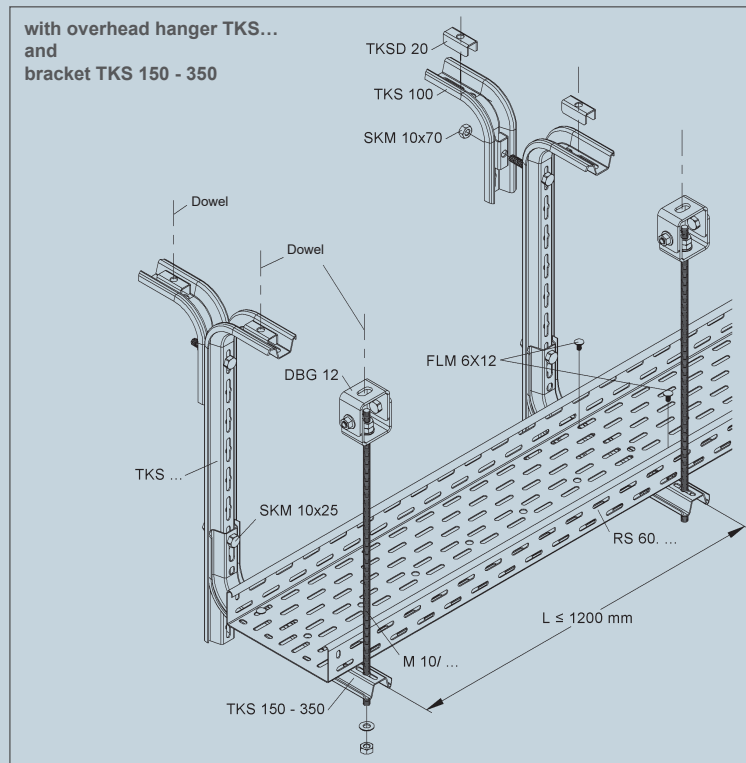
Designation	Model No.	
Support console	TKSUG 150 - 350	1
Distance piece	TKSD 20	1
Threaded rod	M 10/...	1
Ceiling bracket	DBG 12 (optional)	1
Dowel	M10	2

C-profile 2991/...

Designation	Model No.	
C-profile	2991/200 - 400	1
Threaded rod	M 10/...	2
Ceiling bracket or junction sleeve	DBG 12 (optional)	2
	VBSM 10	2
Mushroom-head bolt	FLM 6X12	2
Body washer	UGM 6	2
Dowel	M10	2

Ceiling mounting

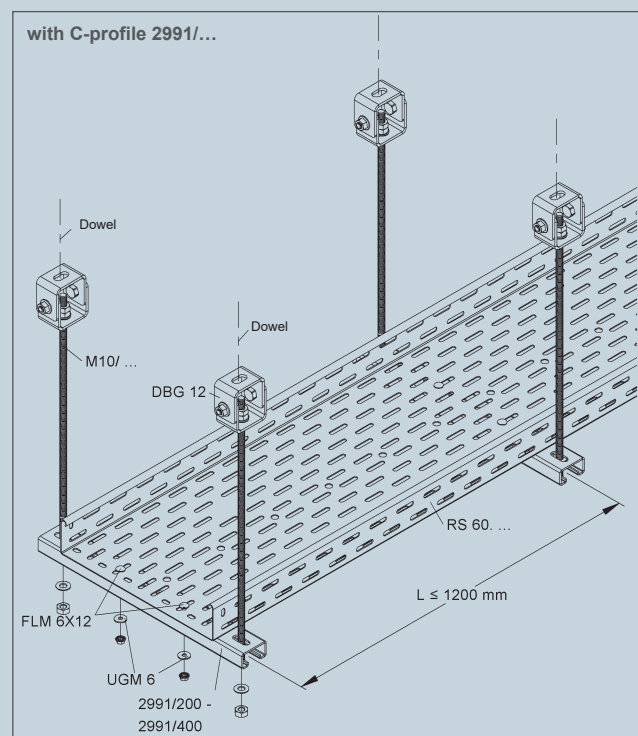
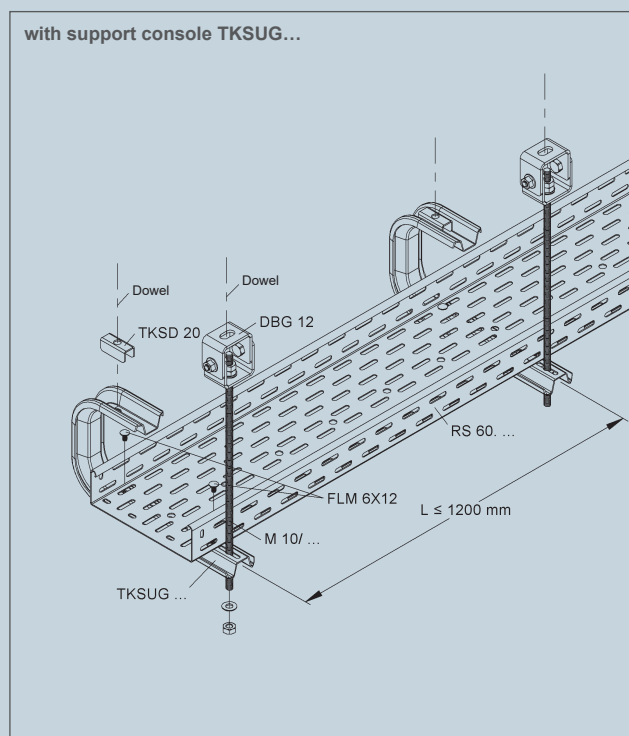
Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span a ≤ 1.2 m . Cable load q ≤ 10 kg/m



Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RS 60.100 OV - RS 60.300 OV) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 mushroom-head bolts (FLM 6X12 / FLM 6X16 F).

1. The threaded rod can also be fastened directly in the solid ceiling without the ceiling bracket DBG 12 using fasteners that have been proven in terms of fire protection.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.



The material requirement

of the suspension construction per suspension unit:

Bracket TKS...

Designation	Model No.			
Bracket or bracket with bracket adapter	TKS 150 - 350	1	2	3
	TKS 100 - 300	1	2	3
	KAWG 12	1	2	3
Distance piece	TKSD 20	1	2	3
Threaded rod	M 10/...	1	2	3
Junction sleeve	VBSM 10	-	1	2
Ceiling bracket	DBG 12 (optional)	1	1	1
Dowel	M10	2	3	4

Bracket TKS...

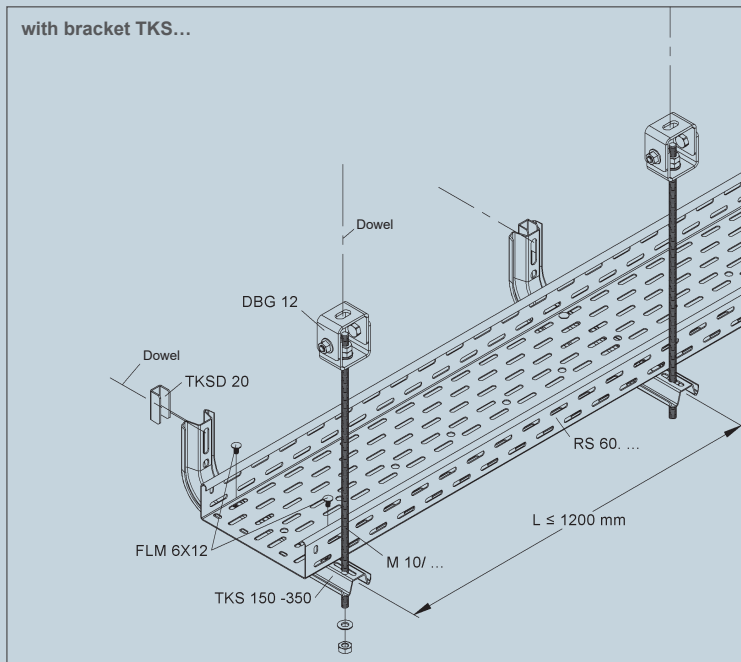
Designation	Model No.		
Bracket	TKS 150 - 350	1	2
Distance piece	TKSD 20	1	2
Wall connection angle 45°	WAWG 12	2	2
Inclined threaded rod	M 10/...	1	1
Threaded rod	M 10/...	-	1
Junction sleeve	VBSM 10	-	1
Hexagon screw	SKM 10X25 V	1	1
Dowel	M10	2	3

Required inclined threaded rod length

Bracket	Threaded rod length	Drill hole spacing A
TKS 150	330 mm	92 mm
TKS 250	470 mm	192 mm
TKS 350	610 mm	292 mm

Wall/ceiling mounting

Bracket length = cable tray width . Cable tray width B 100 - 300 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 10$ kg/m

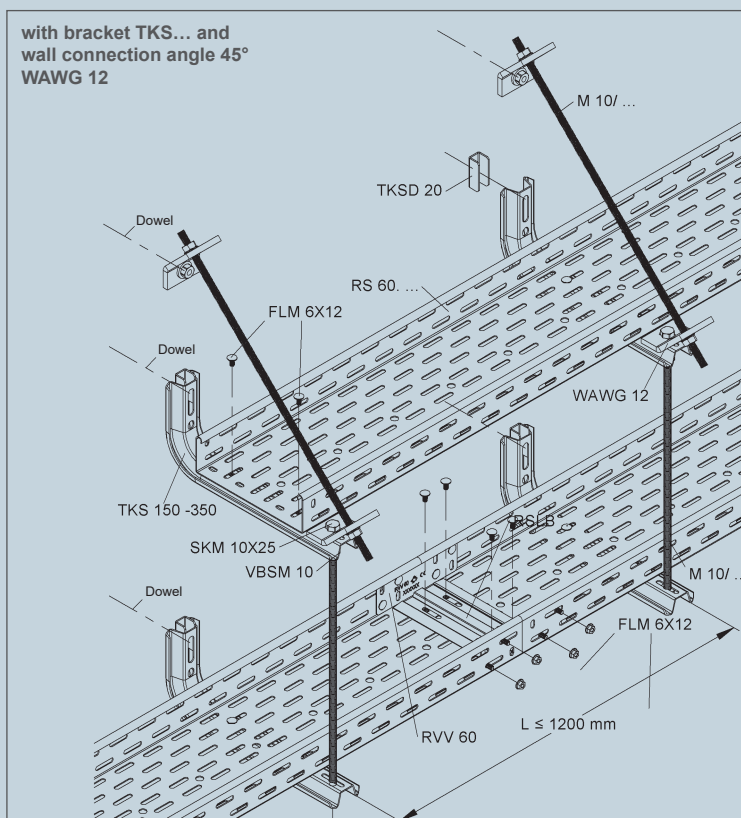


Cable trays with a rail height of 60 mm, in widths of 100 to 300 mm (RS 60.100 OV - RS 60.300 OV) are used for ceiling and wall mounting. The cable trays are fixed to the brackets with 2 mushroom-head bolts (FLM 6X12 / FLM 6X16 F).

1. The threaded rod can also be fastened directly in the solid ceiling without the ceiling bracket DBG 12 using fasteners that have been proven in terms of fire protection.

The explanations and notes in the expert judgement report on the standard support construction must be taken into account.

Wall/wall mounting



The material requirement

of the suspension construction per suspension unit:

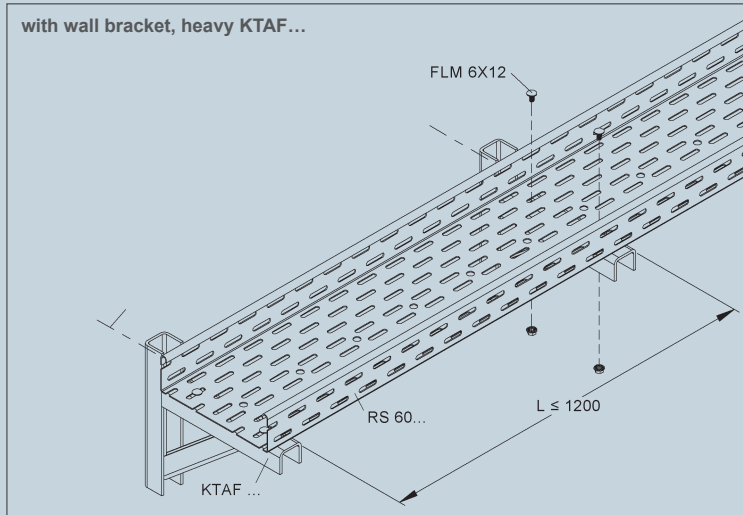
Bracket KTAF...

Designation	Model No.	
Wall bracket, heavy	KTAF 200 - 300	1
Mushroom-head bolt	FLM 6X12	2
Dowel	M10	1



Wall mounting

Bracket length = cable tray width . Cable tray width B 200 - 300 mm . Support span $a \leq 1.2$ m . Cable load $q \leq 10$ kg/m

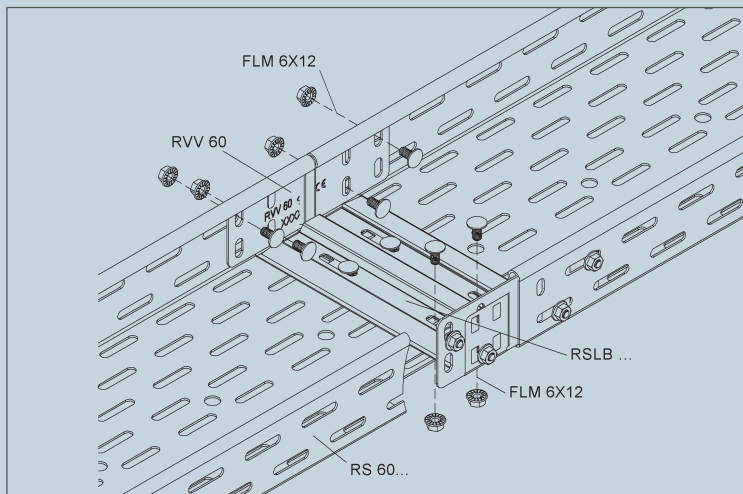


Cable trays with a rail height of 60 mm, in widths 200 to 300 mm (RS 60.200 OV - RS 60.300 OV) are used for wall mounting. Two cable trays RS 60... are connected by means of the joint splice plates RVV 60 (4 FLM 6X12 per splice plate) and the joint bar RSLB... (4 FLM 6X12).

The cable trays are fixed to the brackets with 2 mushroom-head bolts (FLM 6X12).

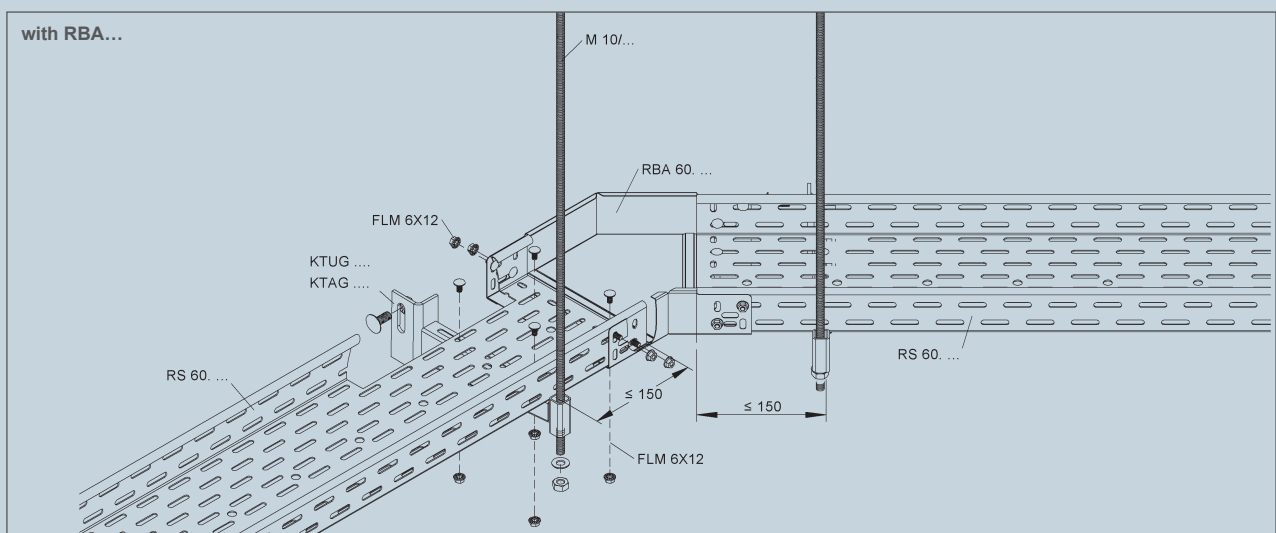
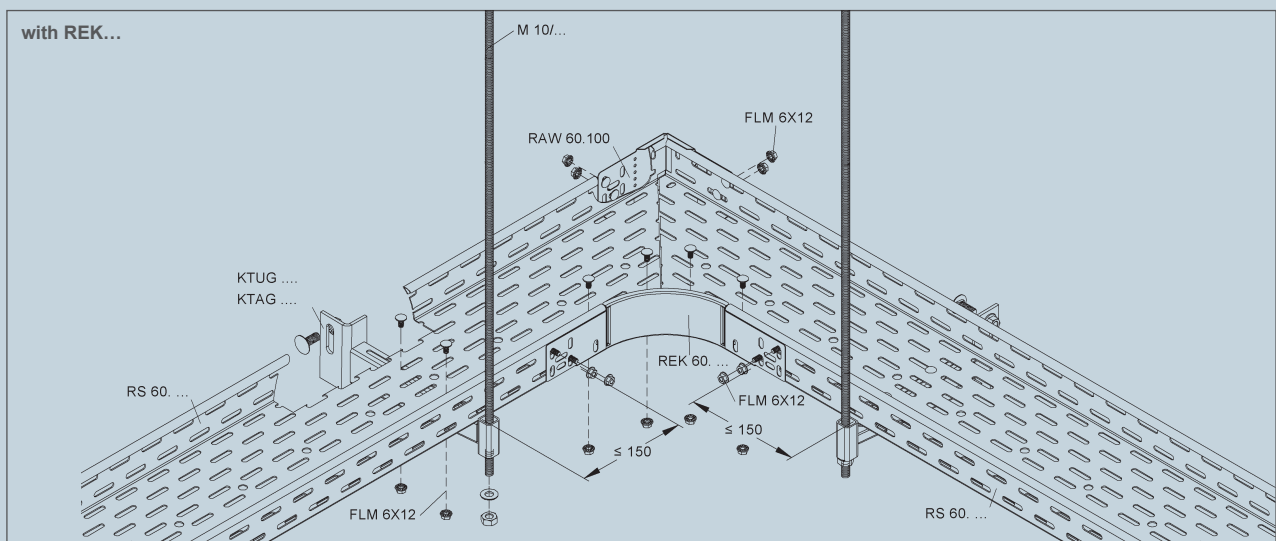
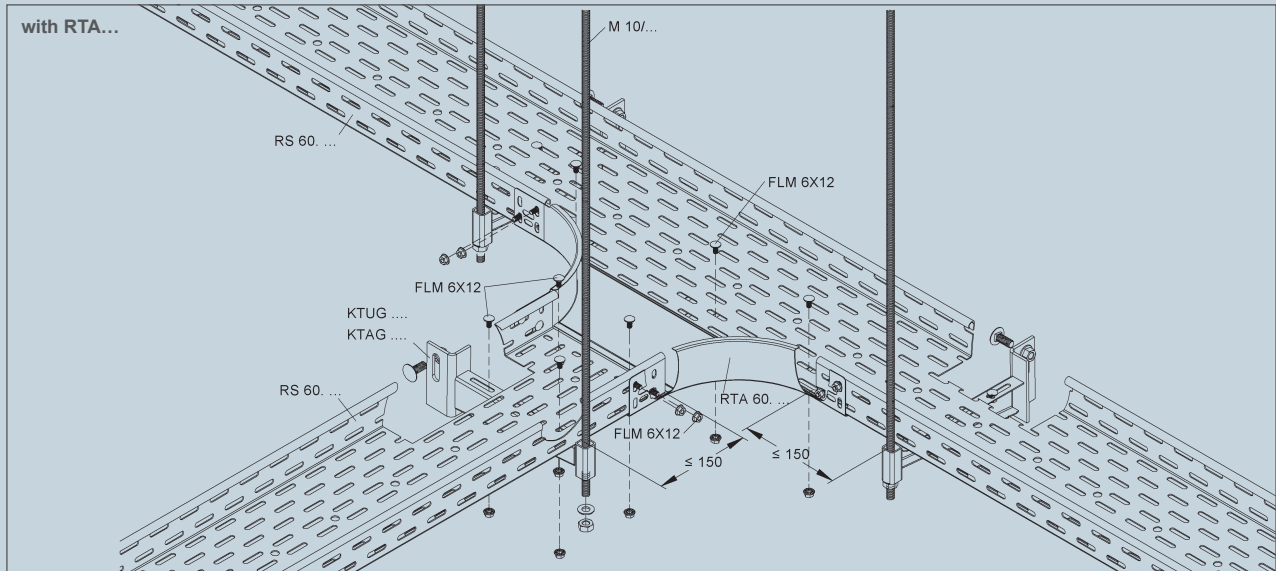
The design and instructions of the expert judgement report on the standard support construction must be taken into account.

Structure of a joint

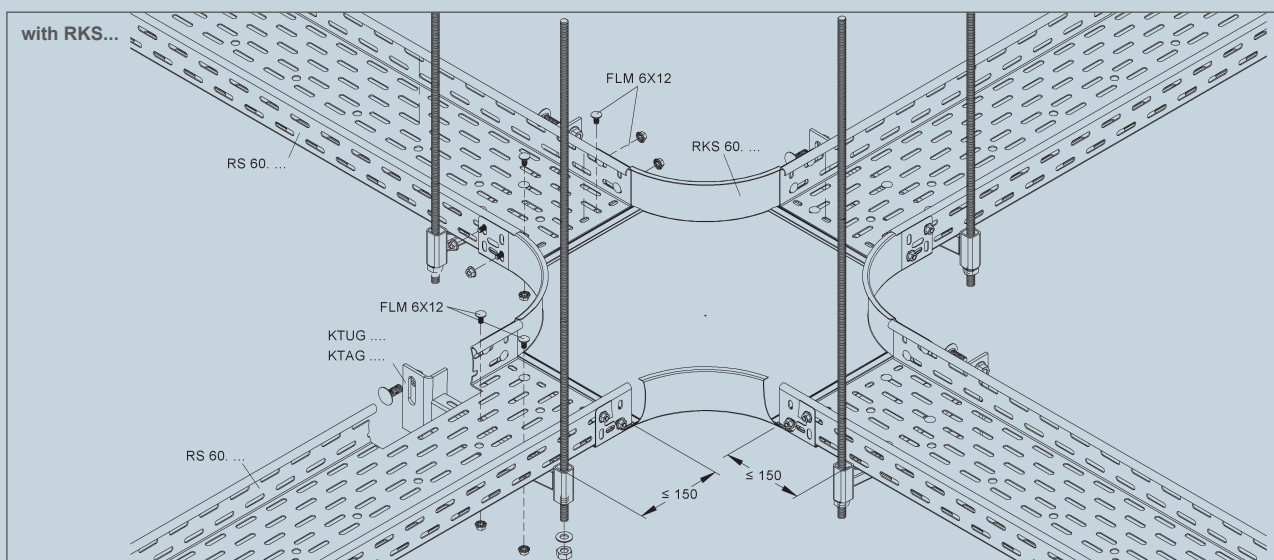
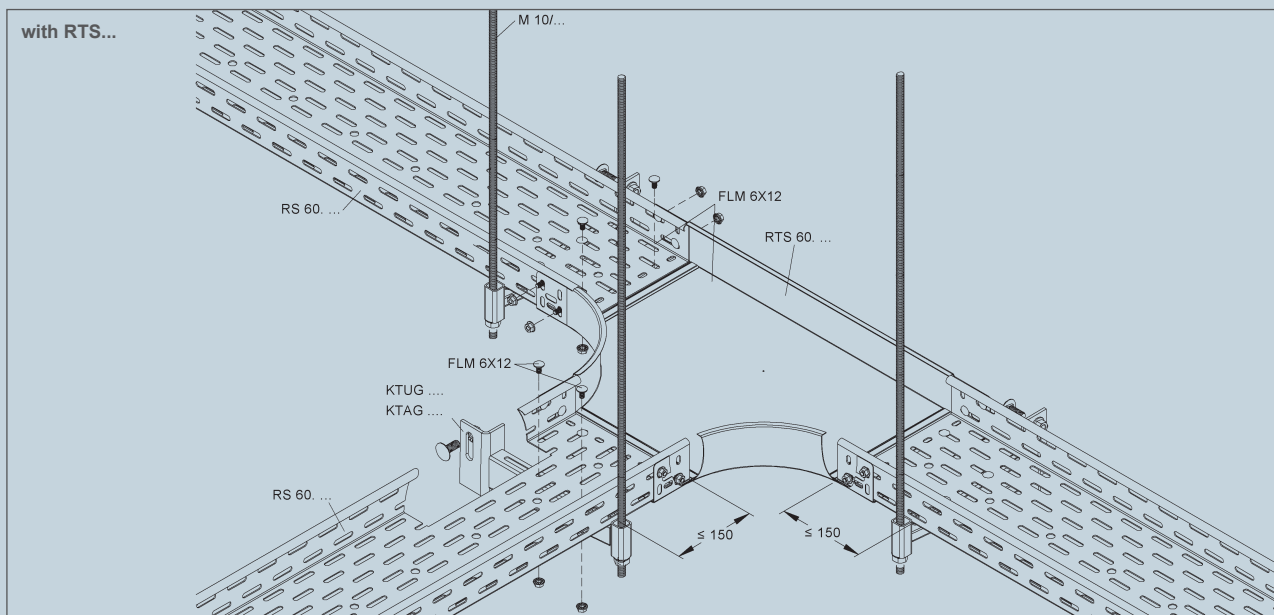
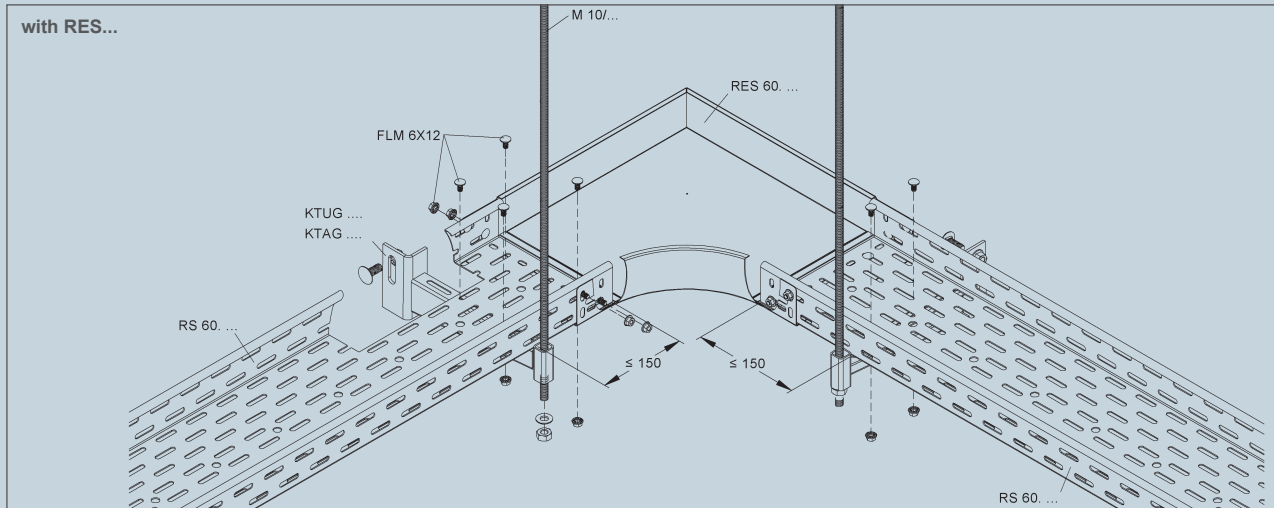


The connection of two cable trays RS 60... is made using the splice plates RVV 60 (4 FLM 6X12 per splice plate) and the joint bar RSLB... (4 FLM 6X12) as shown in the adjacent illustration.

Overhead hanger and wall mounting of fittings for RS 60...

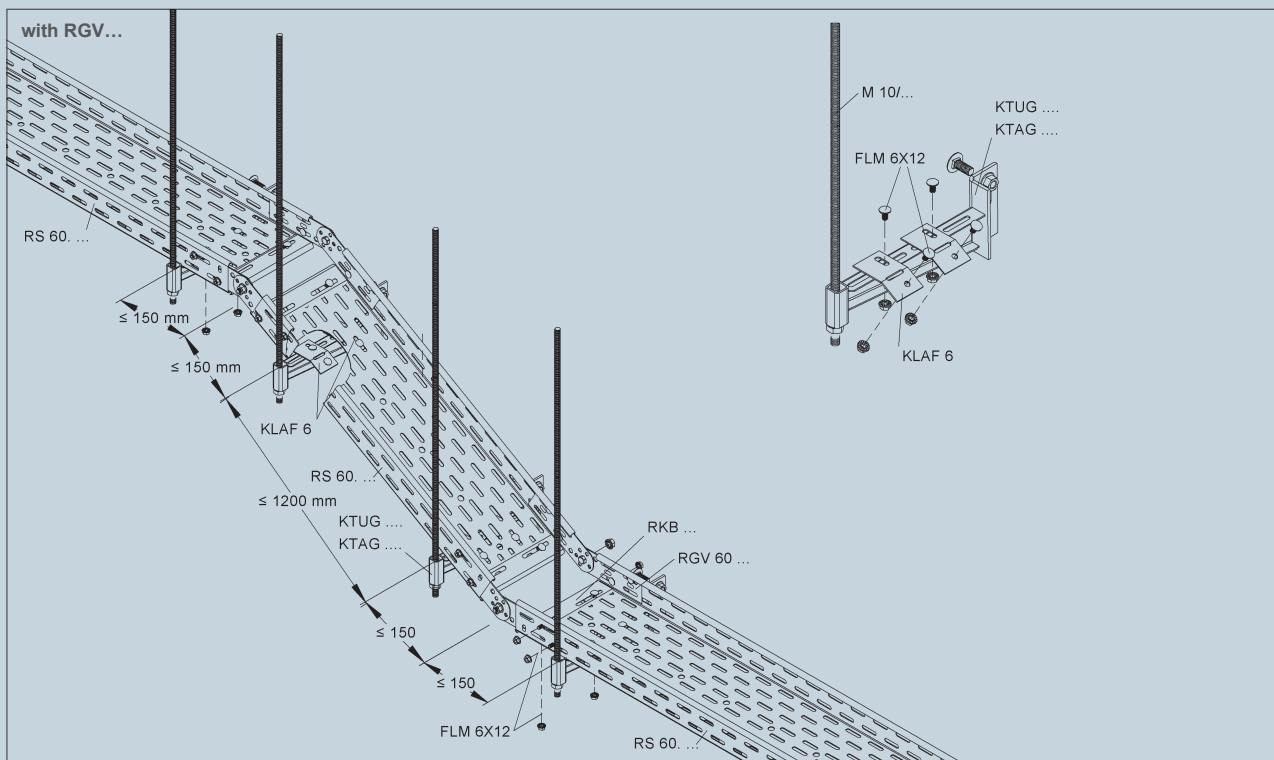
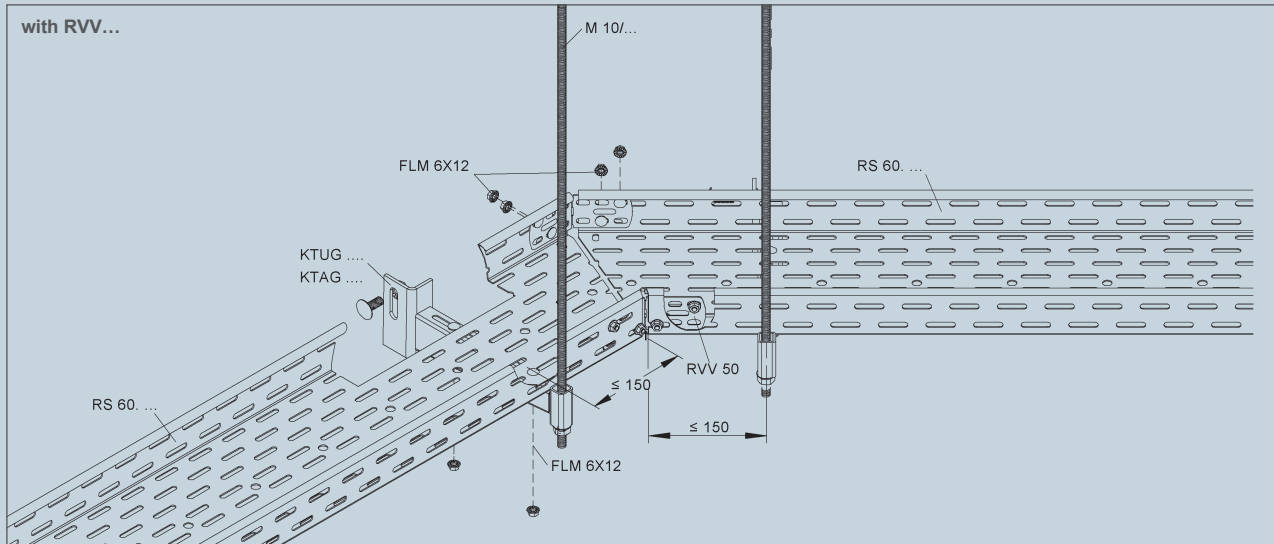


Overhead hanger and wall mounting of fittings for RS 60...

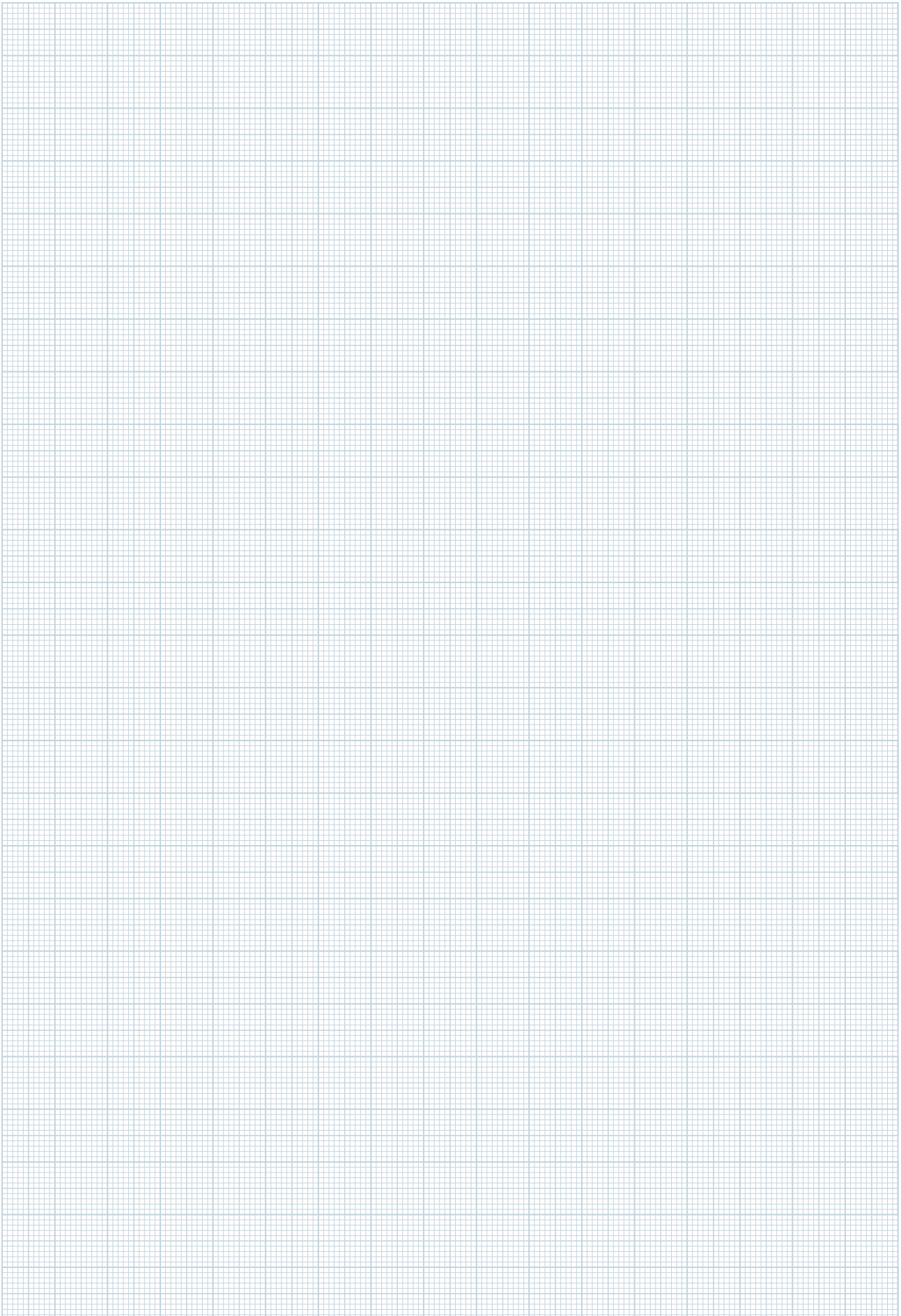


3 STANDARD SUPPORT CONSTRUCTION

3.4 Cable Tray RS...



NOTES



3 STANDARD SUPPORT CONSTRUCTION

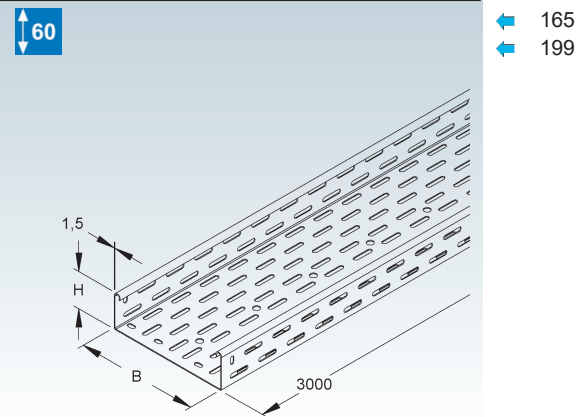
3.4 Cable Tray RS...

Cable Tray, heavy

perforated, splice plate not included

	Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm			
S	RS 60.100 OV	60	100	1,5	248209	244,15	2 x 3 m
S	RS 60.200 OV	60	200	1,5	248308	342,39	2 x 3 m
S	RS 60.300 OV	60	300	1,5	248407	440,63	2 x 3 m
F	RS 60.100 F OV	60	100	1,5	248520	268,57	2 x 3 m
F	RS 60.200 F OV	60	200	1,5	248544	376,63	2 x 3 m
F	RS 60.300 F OV	60	300	1,5	248568	484,69	2 x 3 m

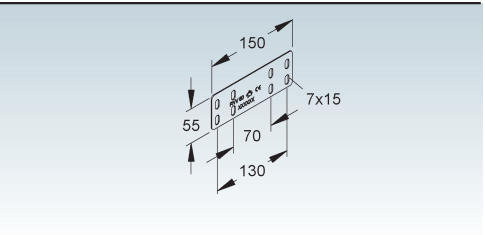
Please order the necessary splice plates and joint bars separately.
Requirement: 2 pieces splice plates RVV 60 and 1 piece joint bar RSLB...



Splice Plate

	Model No.	Height H	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	RVV 60	55	150	4 FLM 6X12	346301	12,44	20 pcs.
F	RVV 60 F	55	150	4 FLM 6X12 F	346356	12,80	20 pcs.

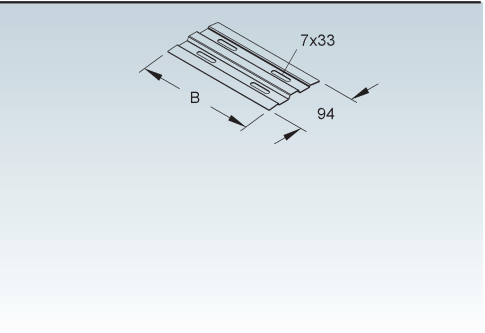
Requirement: 2 pieces per joint



Joint Bar

	Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RSLB 100	90	4 FLM 6X12	345908	10,00	10 pcs.
S	RSLB 200	189	4 FLM 6X12	346004	13,00	10 pcs.
S	RSLB 300	289	4 FLM 6X12	346103	23,00	10 pcs.
F	RSLB 100 F	90	4 FLM 6X12 F	346226	10,70	1 pc.
F	RSLB 200 F	189	4 FLM 6X12 F	346240	13,90	1 pc.
F	RSLB 300 F	289	4 FLM 6X12 F	346264	24,70	1 pc.

Requirement: 1 piece per joint

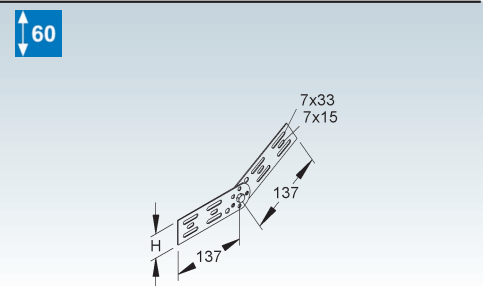


Joint Connector

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RGV 60	47	4 FLM 6X12	227709	19,00	50 pcs.
F	RGV 60 F	47	4 FLM 6X12 F	227808	19,00	50 pcs.

for simple on-site creation of height offsets in horizontal cable systems

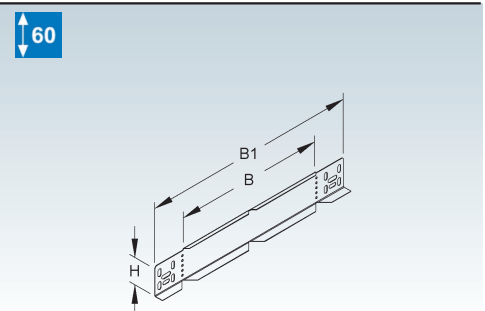
Requirement: 2 pieces per joint



Reducing-/End-/Angle Piece

	Model No.	Height H	Width B	Width B1	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm				
S	RAW 60.100	60	100	222	4 FLM 6X12	763207	13,59	20 pcs.
S	RAW 60.300	60	300	422	4 FLM 6X12	763603	25,17	20 pcs.
F	RAW 60.100 F	60	100	222	4 FLM 6X12 F	540730	14,64	1 pc.
F	RAW 60.300 F	60	300	422	4 FLM 6X12 F	540754	27,38	1 pc.

for creating horizontal changes of direction for terminating cable tray ends and for reducing and extending continuous cable trays

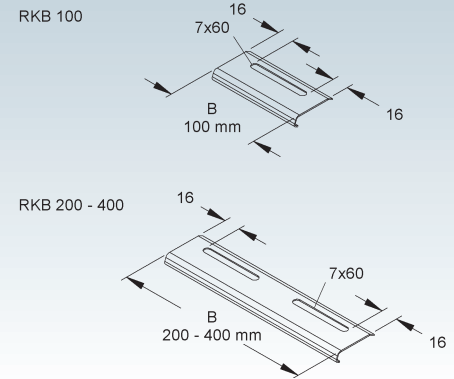


Edge Protection Plate

with rounded edges

	Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RKB 100	92	1 FLM 6X12	270200	4,27	10 pcs.
S	RKB 200	192	2 FLM 6X12	270408	8,87	10 pcs.
S	RKB 300	292	2 FLM 6X12	270606	13,01	10 pcs.
F	RKB 100 F	92	1 FLM 6X12 F	563500	4,62	10 pcs.
F	RKB 200 F	192	2 FLM 6X12 F	563708	9,60	10 pcs.
F	RKB 300 F	292	2 FLM 6X12 F	563906	14,16	10 pcs.

to reinforce the cable tray bottom and protect the cables at the cable tray end

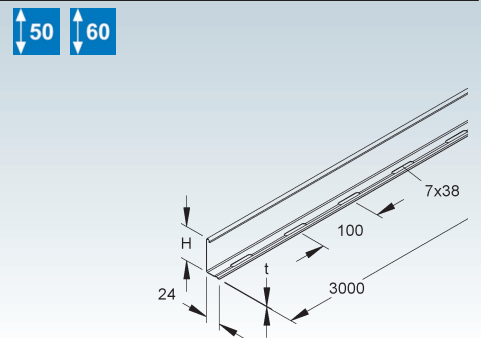


Barrier Strip

	Model No.	Height H	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm				
S	RW 50	47	0,75	4 FLM 6X12	224951	45,68	10 x 3 m
S	RW 60	55	0,75	4 FLM 6X12	225002	50,42	10 x 3 m
F	RW 60 F	55	0,75	4 FLM 6X12 F	225101	55,36	10 x 3 m

for the separation of wires and cables with different functions and/or voltages

The continuously perforated folding allows for stepless mounting.



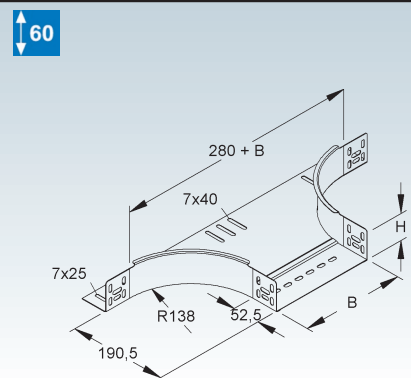
Extension T-Piece

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H	Inside dimensions width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	RTA 60.100	60	102	10 FLM 6X12	226801	79,21	1 pc.
S	RTA 60.200	60	202	10 FLM 6X12	227006	95,01	1 pc.
S	RTA 60.300	60	302	10 FLM 6X12	227204	113,06	1 pc.
F	RTA 60.100 F	60	102	10 FLM 6X12 F	536405	85,00	1 pc.
F	RTA 60.200 F	60	202	10 FLM 6X12 F	536504	104,63	1 pc.
F	RTA 60.300 F	60	302	10 FLM 6X12 F	536603	122,30	1 pc.

for the production of horizontal 90° T-outlets of cable trays of different as well as equal widths

Alternatively, the RTAC... fitting can also be used.

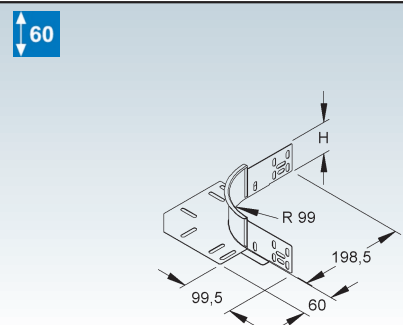


Extension Elbow

with unperforated side profile, but with connector perforations, with integrated splice plates, with continuous cable support through overlapping base plate

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	REK 60	60	6 FLM 6X12	227600	30,89	10 pcs.
F	REK 60 F	60	6 FLM 6X12 F	537006	33,51	10 pcs.

for creating horizontal 90° elbow and T-connections of cable trays



3 STANDARD SUPPORT CONSTRUCTION

3.4 Cable Tray RS...

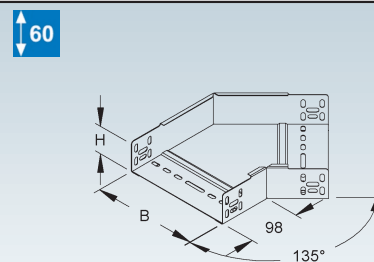
Elbow 45°

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RBA 60.100	60	102	4 FLM 6X12	225200	43,21	1 pc.
S	RBA 60.200	60	202	5 FLM 6X12	225408	70,51	1 pc.
S	RBA 60.300	60	302	5 FLM 6X12	225606	102,85	1 pc.
F	RBA 60.100 F	60	102	4 FLM 6X12 F	535200	47,22	1 pc.
F	RBA 60.200 F	60	202	5 FLM 6X12 F	535309	77,16	1 pc.
F	RBA 60.300 F	60	302	5 FLM 6X12 F	535408	112,73	1 pc.

for creating 45° horizontally angled cable tray run

Alternatively, the RBAC... fitting can also be used.



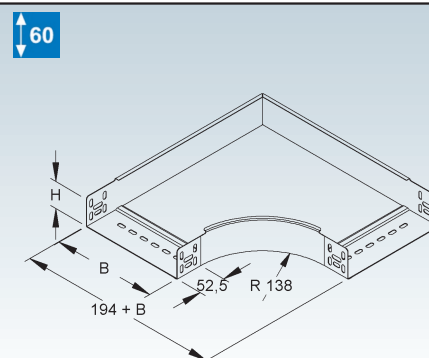
Elbow 90°

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RES 60.100	60	102	4 FLM 6X12	226009	88,06	1 pc.
S	RES 60.200	60	202	5 FLM 6X12	226207	147,35	1 pc.
S	RES 60.300	60	302	5 FLM 6X12	226405	219,82	1 pc.
F	RES 60.100 F	60	102	4 FLM 6X12 F	535804	96,55	1 pc.
F	RES 60.200 F	60	202	5 FLM 6X12 F	535903	161,68	1 pc.
F	RES 60.300 F	60	302	5 FLM 6X12 F	536009	241,40	1 pc.

for creating horizontal 90° corner joints

Alternatively, the RESC... fitting can also be used.



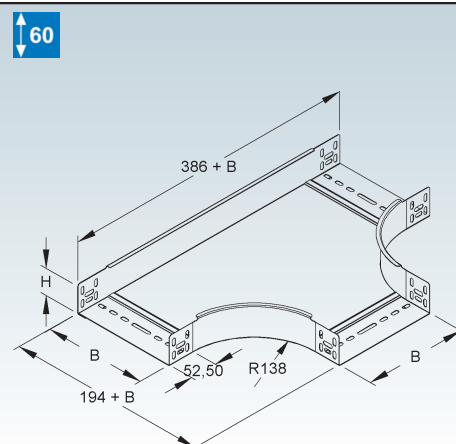
T-Piece

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTS 60.100	60	102	8 FLM 6X12	228805	119,95	1 pc.
S	RTS 60.200	60	202	10 FLM 6X12	229000	200,52	1 pc.
S	RTS 60.300	60	302	12 FLM 6X12	229208	290,89	1 pc.
F	RTS 60.100 F	60	102	8 FLM 6X12 F	538003	131,31	1 pc.
F	RTS 60.200 F	60	202	10 FLM 6X12 F	538102	219,78	1 pc.
F	RTS 60.300 F	60	302	12 FLM 6X12 F	538201	319,03	1 pc.

for creating horizontal 90° T-outlets

Alternatively, the RTSC... fitting can also be used.



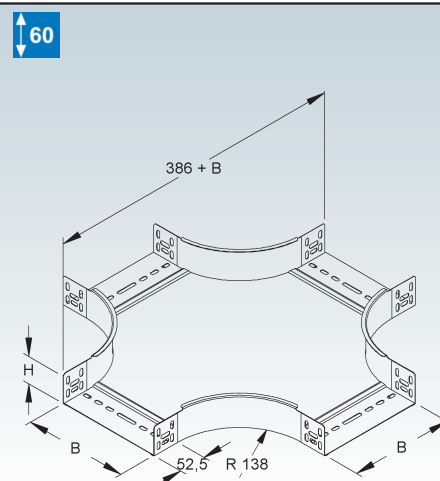
Crossing

with unperforated side profiles, but with connector perforations, with integrated splice plates

	Model No.	Height H mm	Inside dimensions width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RKS 60.100	60	102	12 FLM 6X12	229604	159,37	1 pc.
S	RKS 60.200	60	202	15 FLM 6X12	229802	233,70	1 pc.
S	RKS 60.300	60	302	15 FLM 6X12	230006	332,40	1 pc.
F	RKS 60.100 F	60	102	12 FLM 6X12 F	538607	161,90	1 pc.
F	RKS 60.200 F	60	202	15 FLM 6X12 F	538706	251,20	1 pc.
F	RKS 60.300 F	60	302	15 FLM 6X12 F	538805	357,40	1 pc.

for creating horizontal 90° crossings

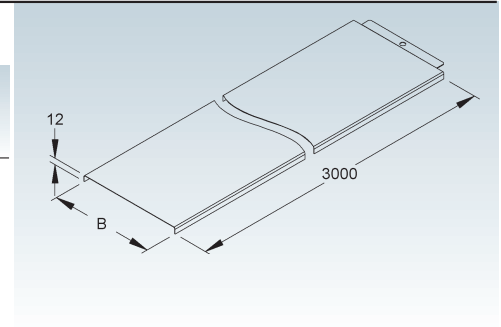
Alternatively, the RKSC... fitting can also be used.



Cover for Cable Tray/-Ladder

with joint strip

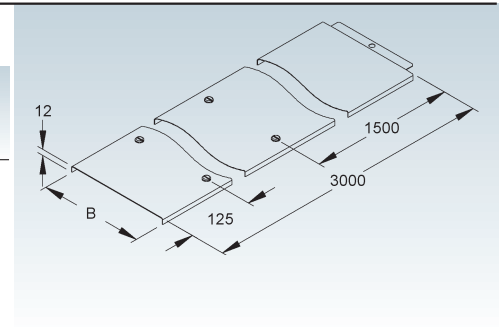
	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RD 100	102	260300	73,24	2 x 3 m
S	RD 200	202	260508	132,51	2 x 3 m
S	RD 300	302	260706	230,09	2 x 3 m
F	RD 100 F	102	262502	80,56	2 x 3 m
F	RD 200 F	202	262700	145,77	2 x 3 m
F	RD 300 F	302	262908	253,10	2 x 3 m



Cover for Cable Tray/-Ladder

with joint strip and pre-mounted turning bolts

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 m	Smallest packaging unit
S	RDV 100	102	261406	74,17	2 x 3 m
S	RDV 200	202	261604	133,44	2 x 3 m
S	RDV 300	302	261802	231,02	2 x 3 m
F	RDV 100 F	102	263608	81,59	2 x 3 m
F	RDV 200 F	202	263806	146,79	2 x 3 m
F	RDV 300 F	302	264001	254,13	2 x 3 m



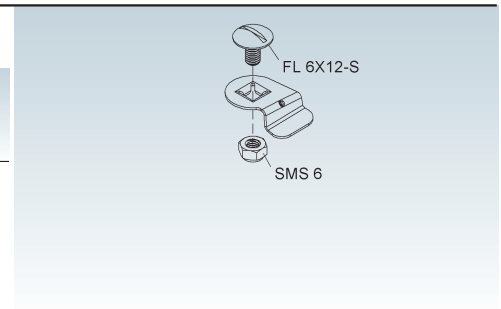
Turning Bolt

incl. locking nut acc. to DIN EN ISO 10511

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RDRS 9	1 FL 6X12-S V, 1 SMS 6 V	269907	1,20	20 pcs.
F	RDRS 9 F	1 FL 6X12-S E3, 1 SMS 6 E3	563463	1,60	20 pcs.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

Delivery unassembled loose



Cover Clamp

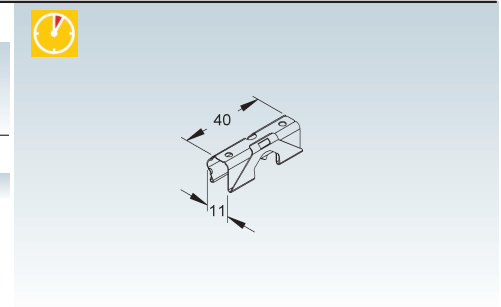
	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E2	RDHF 9 E2	920457	0,47	60 pcs.

for fastening cable tray covers without twist-lock fastener

For additional requirements.

The cover clamp is designed for the horizontal position of the cover.

It is important to note that a minimum clearance of ≥ 50 mm to the start/end of the cover must be maintained when fixing.

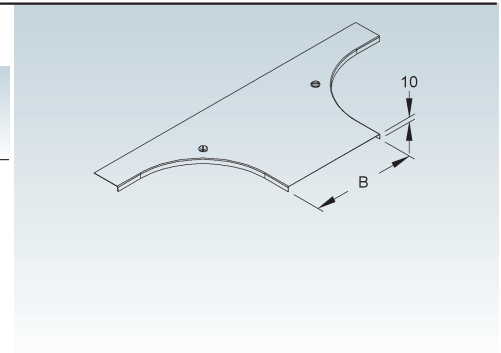


Cover for Extension T-Piece

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTADV 100	104	277100	43,37	1 pc.
S	RTADV 200	204	277308	60,61	1 pc.
S	RTADV 300	304	274802	77,85	1 pc.
F	RTADV 100 F	104	559008	52,44	1 pc.
F	RTADV 200 F	204	559206	67,45	1 pc.
F	RTADV 300 F	304	559404	86,42	1 pc.

If the fitting RTAC... has been installed, the fitting cover RTACDV... should be used.



3 STANDARD SUPPORT CONSTRUCTION

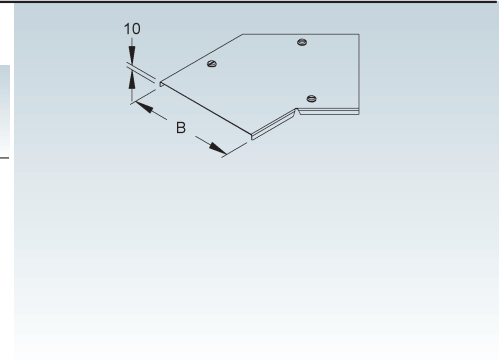
3.4 Cable Tray RS...

Cover for Elbow 45°

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RBADV 100	104	275106	24,99	1 pc.
S	RBADV 200	204	275304	51,21	1 pc.
S	RBADV 300	304	275502	83,94	1 pc.
F	RBADV 100 F	104	555406	28,71	1 pc.
F	RBADV 200 F	204	555604	57,55	1 pc.
F	RBADV 300 F	304	555802	93,54	1 pc.

If the fitting RBAC... has been installed, the fitting cover RBACDV... should be used.

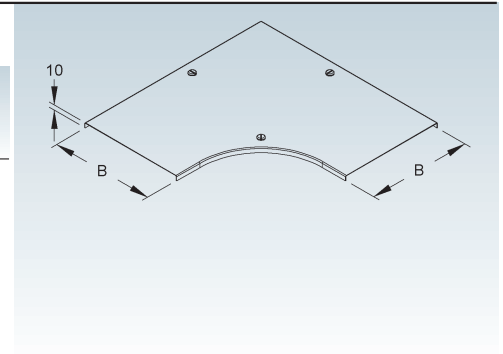


Cover for Elbow 90°

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RESDV 100	104	276202	39,00	1 pc.
S	RESDV 200	204	275007	96,39	1 pc.
S	RESDV 300	304	274901	160,52	1 pc.
F	RESDV 100 F	104	557202	44,10	1 pc.
F	RESDV 200 F	204	557400	107,23	1 pc.
F	RESDV 300 F	304	557608	177,78	1 pc.

If the fitting RESC... has been installed, the fitting cover RESCDV... should be used.

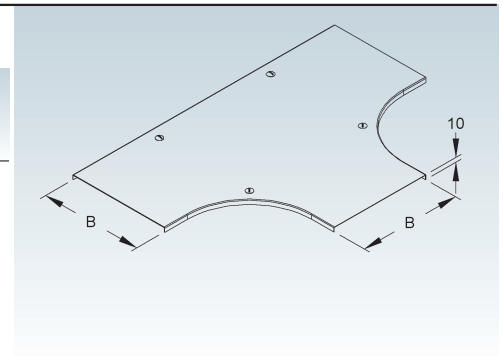


Cover for T-Piece

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RTSDV 100	104	277902	72,24	1 pc.
S	RTSDV 200	204	274703	141,97	1 pc.
S	RTSDV 300	304	278206	227,41	1 pc.
F	RTSDV 100 F	104	560806	81,08	1 pc.
F	RTSDV 200 F	204	561001	157,82	1 pc.
F	RTSDV 300 F	304	561209	251,90	1 pc.

If the fitting RTSC... has been installed, the fitting cover RTSCDV... should be used.

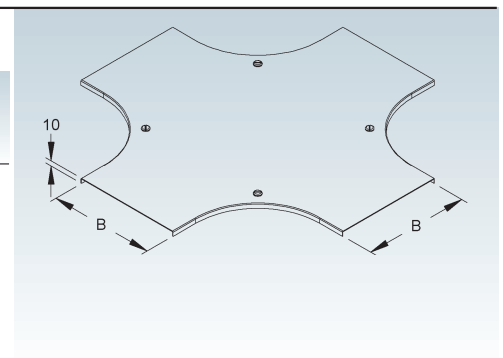


Cover for Crossing

with pre-assembled turning lock fasteners

	Model No.	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RKSDV 100	104	278701	95,41	1 pc.
S	RKSDV 200	204	278909	179,40	1 pc.
S	RKSDV 300	304	279104	279,10	1 pc.
F	RKSDV 100 F	104	562602	106,57	1 pc.
F	RKSDV 200 F	204	562800	198,96	1 pc.
F	RKSDV 300 F	304	563005	308,63	1 pc.

If the fitting RKSC... has been installed, the fitting cover RKSCDV... should be used.



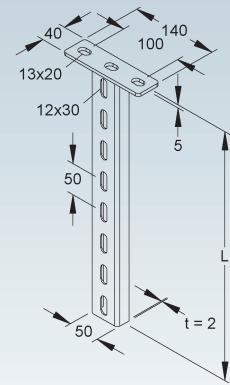
Overhead Hanger

U-profile

	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HUF 50/200	201	168705	48,18	20 pcs.
F	HUF 50/250	255	168804	55,68	20 pcs.
F	HUF 50/300	301	168903	61,97	20 pcs.
F	HUF 50/400	401	169009	75,78	20 pcs.
F	HUF 50/500	501	169108	89,57	20 pcs.
F	HUF 50/600	601	169207	103,37	10 pcs.
F	HUF 50/700	701	169306	117,16	1 pc.
F	HUF 50/800	801	169405	130,96	1 pc.
F	HUF 50/900	905	169504	145,35	1 pc.
F	HUF 50/1000	1005	169603	159,15	1 pc.
F	HUF 50/1100	1105	169702	172,94	1 pc.
F	HUF 50/1200	1205	169801	186,74	1 pc.

Total length = length of U-profile inclusive head plate

HUF 50/200 offers limited space for mounting cable trays (length of overhead hanger - height of bracket).



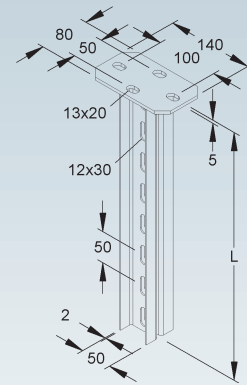
Overhead Hanger

double U-profile

	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HDUF 50/200	201	172702	96,54	1 pc.
F	HDUF 50/250	255	172801	111,53	1 pc.
F	HDUF 50/300	301	172900	124,14	1 pc.
F	HDUF 50/400	401	173006	151,72	1 pc.
F	HDUF 50/500	501	173105	179,31	1 pc.
F	HDUF 50/600	601	173204	206,91	1 pc.
F	HDUF 50/700	701	173303	234,50	1 pc.
F	HDUF 50/800	801	173402	262,09	1 pc.
F	HDUF 50/900	905	173501	290,87	1 pc.
F	HDUF 50/1000	1005	173600	318,47	1 pc.
F	HDUF 50/1100	1105	173709	346,06	1 pc.
F	HDUF 50/1200	1205	173808	373,66	1 pc.
F	HDUF 50/1300	1305	173907	401,25	1 pc.
F	HDUF 50/1400	1405	174003	428,84	1 pc.
F	HDUF 50/1500	1505	174102	456,43	1 pc.

Total length = length of the U-profile incl. the head plate

HDUF 50/200 has a limited amount of space for cable tray equipment (length of the overhead hangers - height of the bracket). The brackets can only be arranged offset in height on both sides.



3 STANDARD SUPPORT CONSTRUCTION

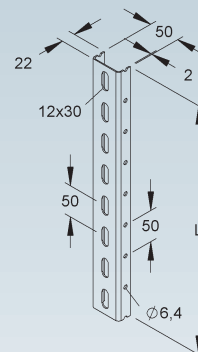
3.4 Cable Tray RS...

Profile U 50

Model No.	Length L	EAN code	Weight in kg per 100 pcs./m	Smallest packaging unit
	mm			
S U 50/200	200	190805	24,68	1 pc.
S U 50/300	300	190904	37,02	1 pc.
S U 50/400	400	191000	49,36	1 pc.
S U 50/500	500	191109	61,70	1 pc.
S U 50/600	600	191208	74,04	1 pc.
S U 50/700	700	191307	86,38	1 pc.
S U 50/800	800	191406	98,72	1 pc.
S U 50/900	900	191505	111,06	1 pc.
S U 50/1000	1000	191604	123,40	1 pc.
S U 50/1500	1500	191703	185,10	1 pc.
S U 50/2000	2000	191802	123,40	2 m
S U 50/3000	3000	190607	123,40	3 m
S U 50/6000	6000	190706	123,40	6 m
F U 50/200 F	200	872503	27,15	1 pc.
F U 50/300 F	300	872534	40,72	1 pc.
F U 50/400 F	400	872565	54,30	1 pc.
F U 50/500 F	500	872596	67,87	1 pc.
F U 50/600 F	600	872626	81,44	1 pc.
F U 50/700 F	700	872657	95,02	1 pc.
F U 50/800 F	800	872688	108,59	1 pc.
F U 50/900 F	900	872718	122,17	1 pc.
F U 50/1000 F	1000	872749	135,74	1 pc.
F U 50/3000 F	3000	190744	135,74	3 m
F U 50/6000 F	6000	190768	135,74	6 m

for creating overhead hangers and supporting structures with system components

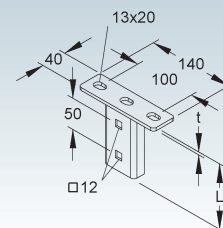
In the hot-dip galvanised version, the side perforation is closed by a zinc skin, but this can be drilled out if necessary.



Screw Head Plate

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KU 50	105	5	2 FLM 10X25 F	191901	50,35	20 pcs.

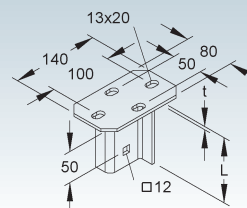
for mounting on straight ceilings



Screw Head Plate

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUD 50	105	5	2 FLM 10X25 F	192007	91,75	10 pcs.

for mounting on straight ceilings

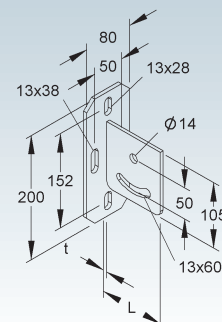


Screw Head Plate

horizontal, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGH 50	106	6	2 FLM 10X25 F	192205	120,92	10 pcs.

for mounting on sloping walls

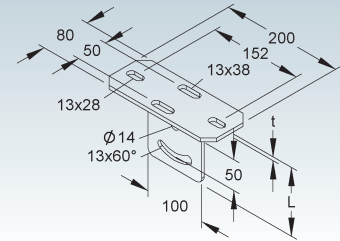


Screw Head Plate

vertical, with adjustment range of $\pm 30^\circ$

Model No.	Total length L	Thickness of head plates (t)	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KUGV 50	111	6	2 FLM 10X25 F	192106	120,92	10 pcs.

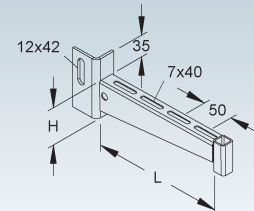
for mounting on sloping walls



Overhead Hanger-Bracket

standard

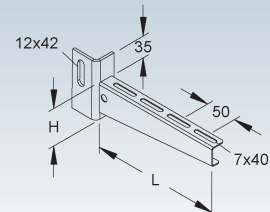
Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KTUG 100	50	110	2 FLM 6X12, 1 FLM 10X25 F	344505	37,80	10 pcs.
F KTUG 200	60	210	2 FLM 6X12, 1 FLM 10X25 F	344604	50,74	10 pcs.
F KTUG 300	75	310	2 FLM 6X12, 1 FLM 10X25 F	344703	79,45	10 pcs.



Overhead Hanger-Bracket

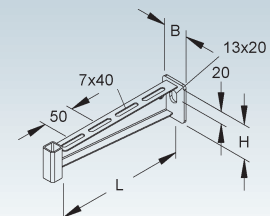
Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KTU 100	50	110	2 FLM 6X12, 1 FLM 10X25 F	174201	32,26	20 pcs.
F KTU 200	60	210	2 FLM 6X12, 1 FLM 10X25 F	174409	45,20	20 pcs.
F KTU 300	75	310	2 FLM 6X12, 1 FLM 10X25 F	174607	73,91	20 pcs.

for mounting overhead hanger in connection with KAWG 12 on HDUF 50/... or HUF 50/...



Wall Bracket

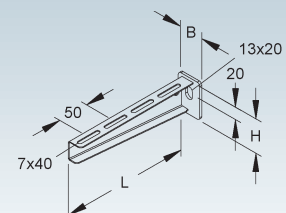
Model No.	Height H	Width B	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
F KTAG 100	45	40	110	2 FLM 6X12	344857	21,06	20 pcs.
F KTAG 200	55	40	210	2 FLM 6X12	344901	32,95	20 pcs.
F KTAG 300	65	50	310	2 FLM 6X12	345007	64,61	20 pcs.



Wall Bracket

Model No.	Height H	Width B	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
F KTA 100	45	40	110	2 FLM 6X12	186907	15,52	20 pcs.
F KTA 200	55	40	210	2 FLM 6X12	187102	27,41	20 pcs.
F KTA 300	65	50	310	2 FLM 6X12	187300	59,08	20 pcs.

for wall mounting in conjunction with KAWG 12



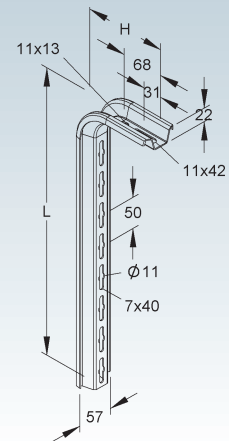
3 STANDARD SUPPORT CONSTRUCTION

3.4 Cable Tray RS...

Bracket/Overhead Hanger

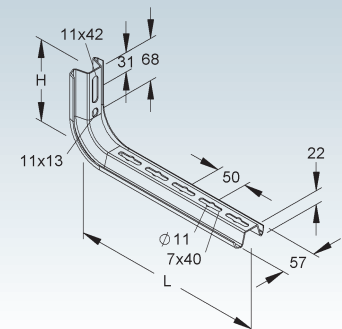
	Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	TKS 100	132	163	2 FLM 6X12	183906	33,58	20 pcs.
S	TKS 200	132	263	2 FLM 6X12	184101	46,08	20 pcs.
S	TKS 300	132	363	2 FLM 6X12	184309	58,57	20 pcs.
S	TKS 400	132	463	2 FLM 6X12	184507	71,07	20 pcs.
S	TKS 450	132	513	—	184606	75,64	10 pcs.
S	TKS 500	132	563	—	184705	81,89	10 pcs.
S	TKS 600	132	663	—	184804	94,39	10 pcs.
S	TKS 700	132	763	—	184828	106,88	1 pc.
S	TKS 800	132	863	—	184842	119,38	1 pc.
S	TKS 900	132	963	—	184866	131,87	1 pc.

for wall and overhead hanger mounting on walls and horizontal ceilings



Bracket

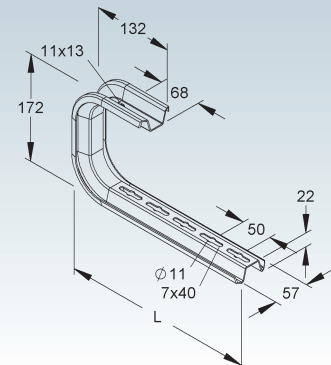
	Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	TKS 150	132	213	2 FLM 6X12	184002	39,74	20 pcs.
S	TKS 250	132	313	2 FLM 6X12	184200	52,32	20 pcs.
S	TKS 350	132	413	2 FLM 6X12	184408	64,82	20 pcs.



Support Console

	Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm				
S	TKSUG 150	172	211	2 FLM 6X12	345205	58,17	20 pcs.
S	TKSUG 250	172	311	2 FLM 6X12	345304	70,78	20 pcs.
S	TKSUG 350	172	411	2 FLM 6X12	345403	83,39	20 pcs.

for ceiling mounting

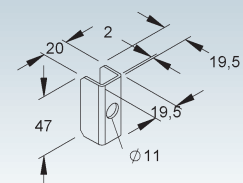


Distance Piece

	Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	TKSD 20	185207	3,77	50 pcs.

for lining the backs of the profiles of the TKS system for wall and overhead hanger mounting

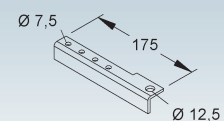
Please order the screws SKM... separately.



Console Adapter

	Model No.	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
F	KAWG 12	175	2 FLM 6X16 F	345526	27,79	20 pcs.

for installation with overhead hanger brackets KTU... as well as wall brackets KTA... and TKS brackets with threaded rods M10 or M12

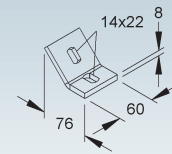


Wall Connection Angle 45°

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F WAWG 12	345533	33,28	20 pcs.

for wall mounting of the threaded rod at an angle of 45° on the same ground with the wall bracket KTAG...

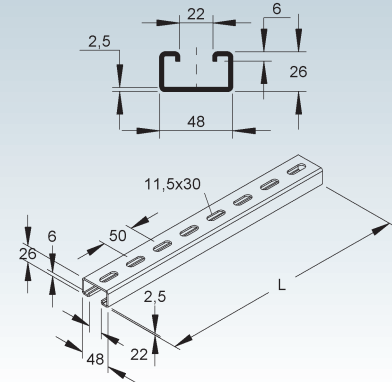
When used with wall bracket KTAG... please order hexagon head screw SKM 10X70 separately.
When used with wall bracket TKS... please order hexagon head screw SKM 10X25 separately.



C-profile Type 2991

C-profile, slot width 22 mm, perforated

Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm			
F 2991/200 FL	200	11,5x30	50	193400	48,06	1 pc.
F 2991/300 FL	300	11,5x30	50	193806	72,08	1 pc.
F 2991/400 FL	400	11,5x30	50	193707	96,11	1 pc.

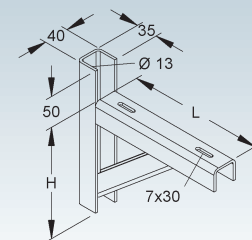


Wall Bracket

heavy

Model No.	Height H	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm				
F KTAF 200	180	221	2 FLM 6X12	345120	191,30	1 pc.
F KTAF 300	240	321	2 FLM 6X12	345144	265,58	1 pc.

for the installation of cable trays and cable ladders without additional threaded rod



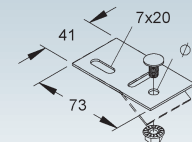
Cable Tray Fastening

Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S KLAF 6 S	1 FLM 6X12	146338	4,00	25 pcs.

for fastening cable trays running at an angle to the bracket

Requirement: 2 pieces per bracket

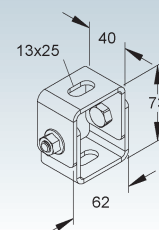
By bending the fastening tongue by hand, the cable tray fastening is adapted to the pitch angle.



Ceiling Bracket

with joint

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F DBG 12	345502	44,70	20 pcs.

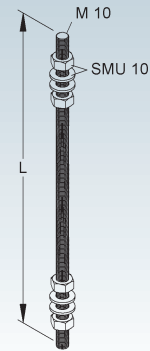


3 STANDARD SUPPORT CONSTRUCTION

3.4 Cable Tray RS...

Threaded Rod, M10

Model No.	Length L	Resistance class	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
V M 10/200	200	4.8	4 SMU 10	202409	16,10	100 pcs.
V M 10/300	300	4.8	4 SMU 10	202508	21,10	100 pcs.
V M 10/400	400	4.8	4 SMU 10	202607	26,10	25 pcs.
V M 10/500	500	4.8	4 SMU 10	202706	31,10	25 pcs.
V M 10/600	600	4.8	4 SMU 10	202805	36,10	25 pcs.
V M 10/700	700	4.8	4 SMU 10	202904	41,10	25 pcs.
V M 10/800	800	4.8	4 SMU 10	203000	46,10	25 pcs.
V M 10/900	900	4.8	4 SMU 10	203109	51,10	25 pcs.
V M 10/1000	1000	4.8	4 SMU 10	203208	56,10	25 pcs.
V M 10/1500	1500	4.8	4 SMU 10	203307	81,10	25 pcs.

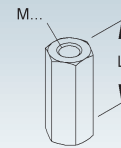


Junction Sleeve

hexagonal

Model No.	Thread M	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm			
V VBSM 10	10	40	345601	2,30	50 pcs.

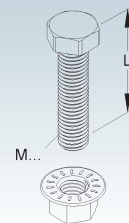
for connecting threaded rods



Hexagon Screw acc. to DIN EN ISO 4017

incl. toothed flange nut acc. to DIN EN 1661

Model No.	Thread M	Length L	Strength class screw / nut	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
V SKM 10X25 V	10	25	8.8 / 8	207305	3,60	50 pcs.
V SKM 10X70 V	10	70	8.8 / 8	207541	5,50	50 pcs.



Hexagon Nut acc. to DIN EN ISO 4032

incl. washer acc. to DIN EN ISO 7089

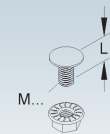
Model No.	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V SMU 10	10	203703	1,53	50 pcs.



Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

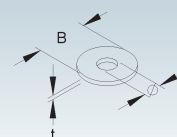
Model No.	Thread M	Length L	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
V FLM 6X12	6	12	-	206209	0,79	10 pcs.
F FLM 6X12 F	6	12	-	206407	0,79	50 pcs.
F FLM 10X25 F	10	25	8.8	206902	4,00	50 pcs.



Body Washer acc. to DIN EN ISO 7093-1

Model No.	Inside-Ø	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm			
V UGM 6	6,4	18	208906	0,26	100 pcs.

for cable tray fastening on perforated anchor rails as well as for covering larger fastening holes



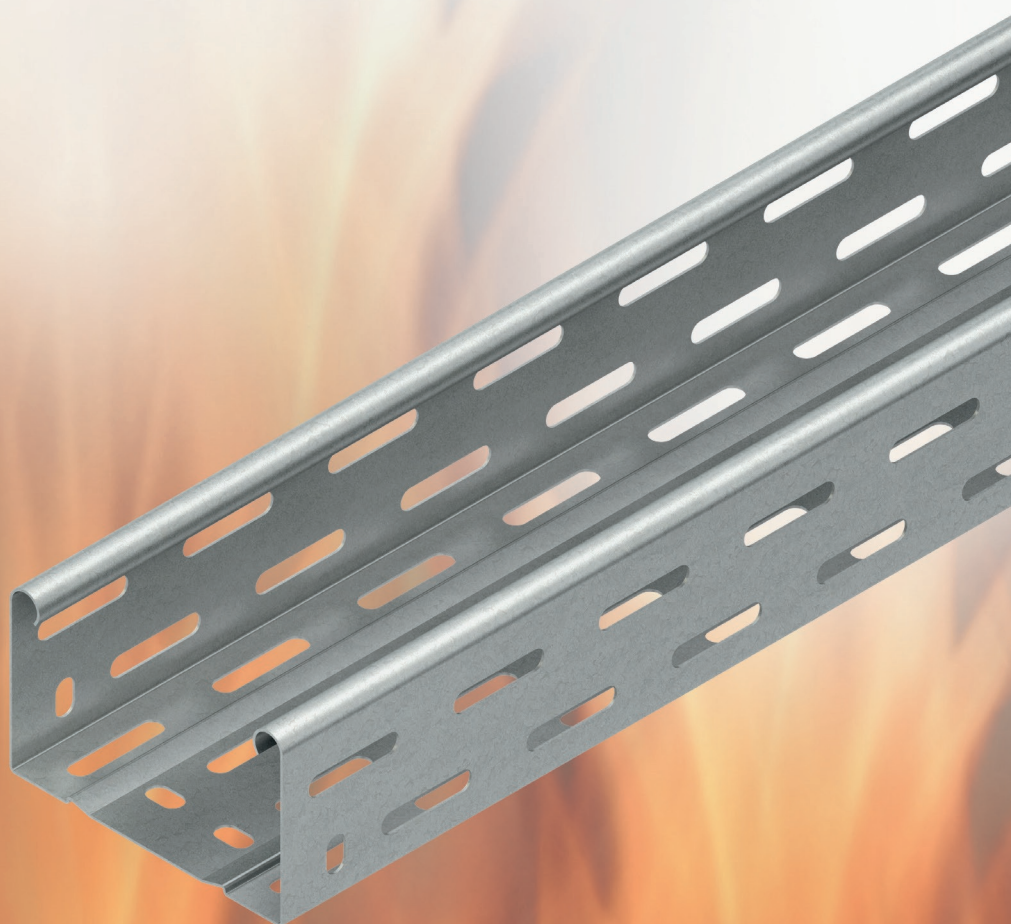
Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E _____ gemäß DIN 4102-12			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
ACHTUNG! Trasse nur für elektrischen Funktionserhalt			



4 MLAR - INSTALLATION SYSTEMS

4.1 Cable Tray RLC... and RS...

In the MLAR 10/2016 Model Guideline for routing Systems, a wide variety of options are listed that enable sufficiently long use of necessary stairwells, rooms between necessary stairwells as well as exits to the outside and necessary corridors as escape routes in case of fire. These include suspended ceilings with fire protection requirements according to section 3.5.3 of MLAR10/2016. According to the provisions of the german classification report for

suspended ceilings, these may not be mechanically loaded in the event of fire.

With the MLAR - installation systems, tested in accordance with DIN 4102 Part 12 according to the unit temperature-time curve (ETK), we offer you a wide range of solutions.

Support span $a \leq 1,5 \text{ m}$

Cable load $q \leq 15 \text{ kg/m}$ per 100 mm cable tray width

The MLAR installation system RLC 60... or RS 60... uses cable trays with a rail height of 60 mm in widths of 100 to 400 mm or 100 to 600 mm.

Two lengths of cable tray RLC 60... are connected using the 2 splice plates RVC 60 and the joint bar RSLC ... with mushroom-head bolts FLM 6X12, while the cable tray RS 60... is connected using the RV 60... and mushroom-head bolts FLM 6X12 included in the scope of delivery. For the number and positioning of the mushroom-head bolts, see page ➔ 196. The position of the joint connections is not bound to a specific position.

Any horizontal and /or vertical change of direction can be realised on site with the fittings as well as the angle and splice plates. All changes of direction must be supported in the immediate vicinity of the joints (distance $\leq 150 \text{ mm}$) by an appropriate supporting structure.

In the case of horizontal routing with height offsets, the inclined cable tray must be fastened to the bracket KTA... using cable tray fasteners KLAFF 6. The fastening plate KLAFF 6 can be adapted to any incline angle by bending it by hand. To protect the cables, use edge protectors RKB... at the cable tray ends.

For ceiling mounting, the overhead hanger HU 5050/... or HU 6040/... or, for greater flexibility on site, corresponding U-profiles and head plates are available.

When mounting the bracket KTA... on the overhead hanger or U-profile, the overhead hanger-distance profile HDS... must be used.

The M12/... threaded rod is mounted with the RGAB 12 F support bracket on the cable tray side rail in the immediate vicinity of the extension arm.

The suspension construction

(max. suspension length 2000 mm) consists of:

Overhead hanger **HU 5050/...**

Overhead hanger/wall bracket **KTA...**

as well as the **M 12/...** threaded rod and **RGAB 12 F** support bracket

When mounting the brackets on the overhead hanger, it is essential to use the overhead hanger-distance profile HDS 50.50 F with screw SKM 10X80 F (see illustrations on the following pages).

For the distances to be maintained between the system and the suspended ceiling, please refer to the fire protection assessment on our homepage www.niedax.com.

The fastening

of the suspension construction is carried out with:

Overhead hanger HU 5050/... and overhead hanger/wall bracket KTA... with building authority approved dowel $\geq$ M 10

Threaded rod M 12/... with building authority-approved dowel M 10 or M 12 (depending on version)

The material requirement

of the suspension construction per suspension unit:

Ceiling mounting

Designation	Model No.	
Overhead hanger	HU 5050/...	1
Bracket	KTA...	1
Overhead hanger-distance profile	HDS 50.50 F	1
Threaded rod	M 12/...	1
Support bracket	RGAB 12 F	1
Dowel	M10 resp. M12	3

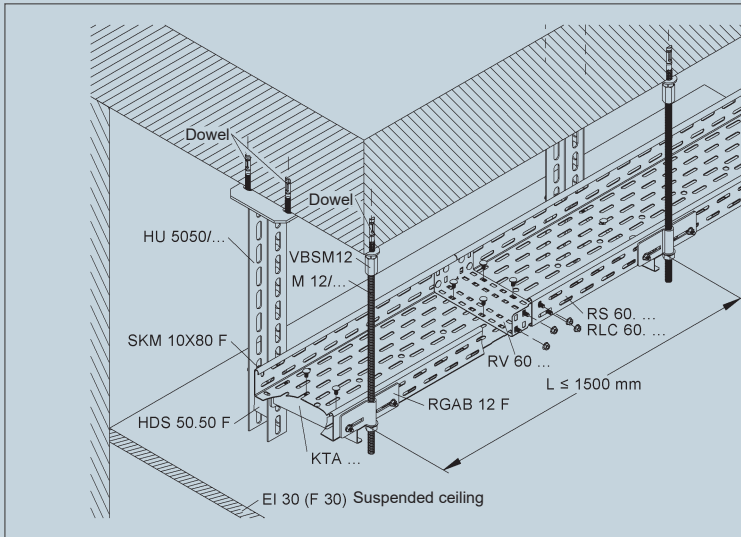
Wall mounting

Designation	Model No.	
Bracket	KTA...	1
Threaded rod	M 12/...	1
Support bracket	RGAB 12 F	1
Dowel	M10 resp. M12	2

Suitable dowels can be found in chapter "8 Fastening Elements". ➡ 256

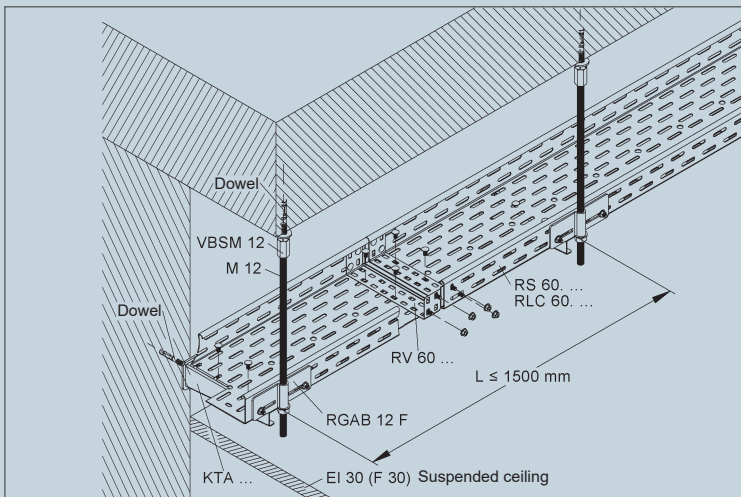
Ceiling mounting

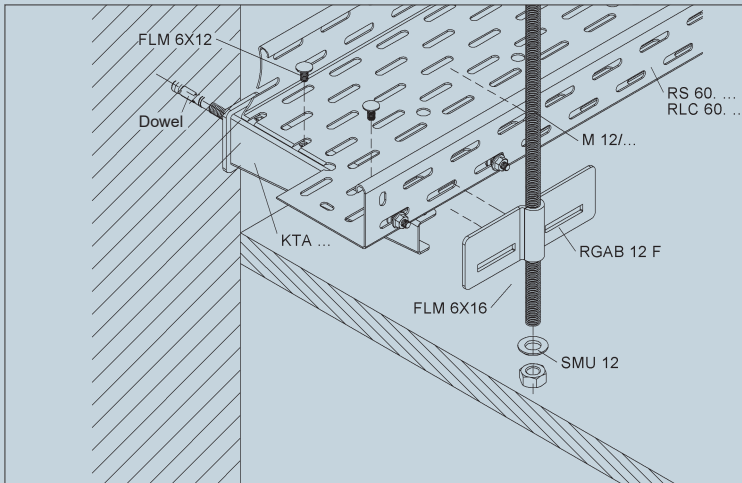
Bracket length = cable tray width . Support span a 1.5 m . Dead weight of cable $q \leq 15 \text{ kg/m}$ per 100 mm cable tray width B



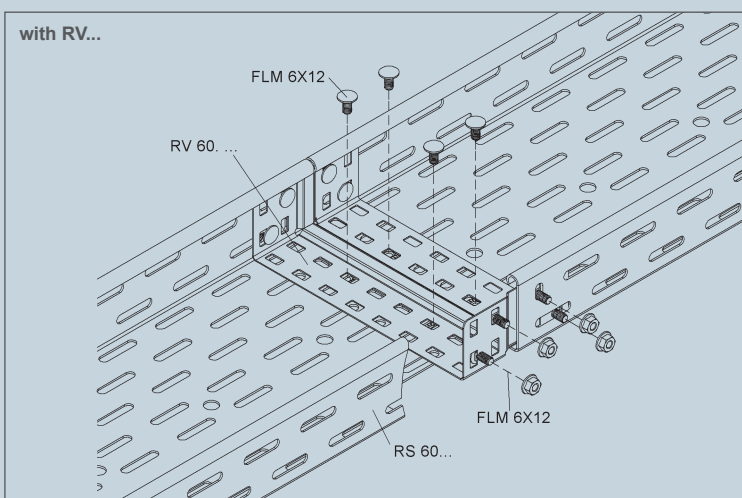
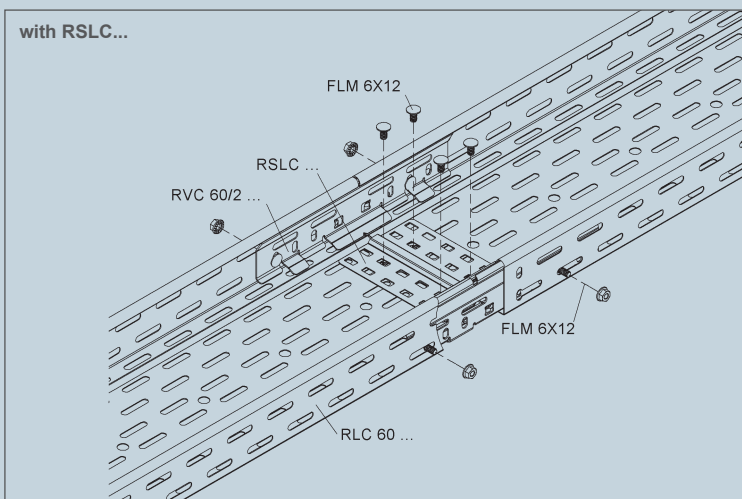
Cable trays of the series (RLC 60.100 - RLC 60.400) as well as (RS 60.100 - RS 60.600) are used for ceiling and wall mounting.

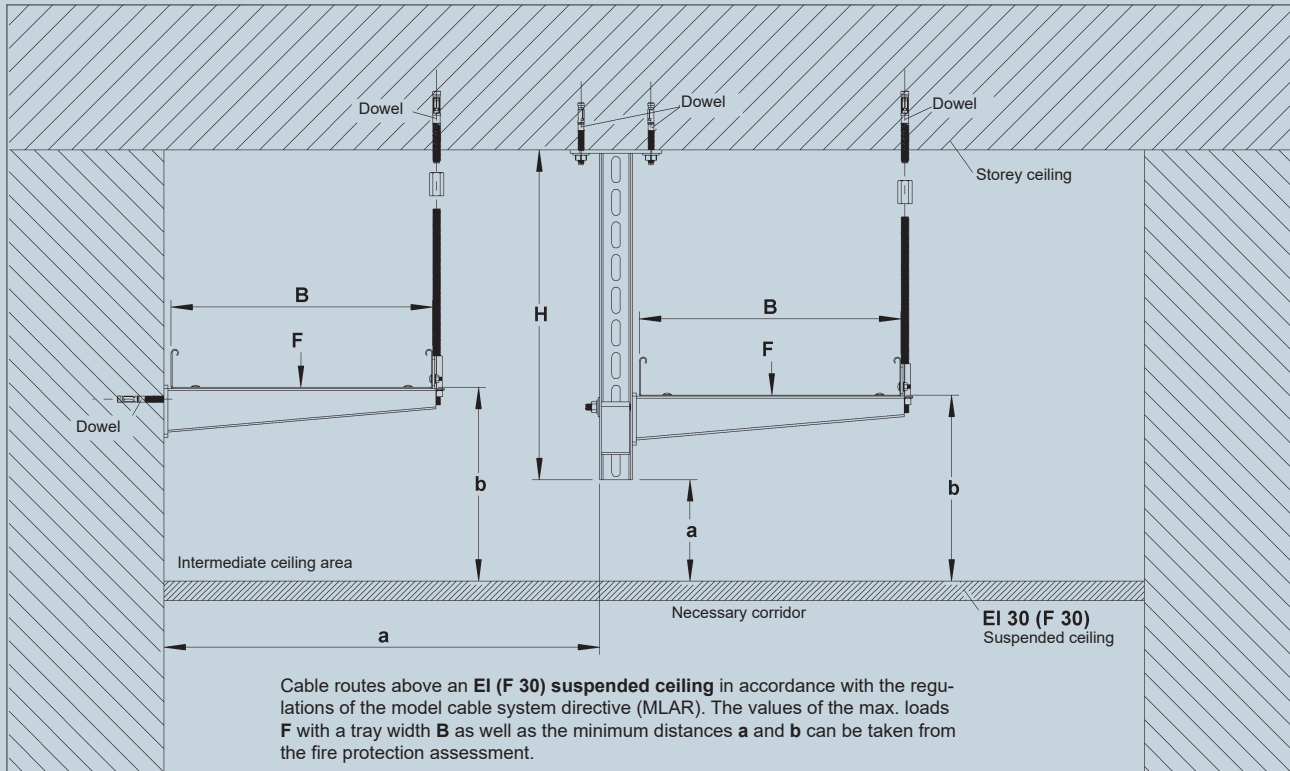
Wall mounting





The joint connections are mounted according to the adjacent illustrations. The cable trays are mounted on the brackets with two mushroom-head bolts (FLM 6X12).





The design and values of the deflection under load according to the table below are to be taken from the fire protection assessment.

Load in kg/m						
Designation \ Cable tray width	100	200	300	400	500	600
RLC 60.100 - RLC 60.400	15	30	45	60	-	-
RS 60.100 - RS 60.600	15	30	45	60	75	90

4 MLAR - INSTALLATION SYSTEMS

4.1 Cable Tray RLC... and RS...

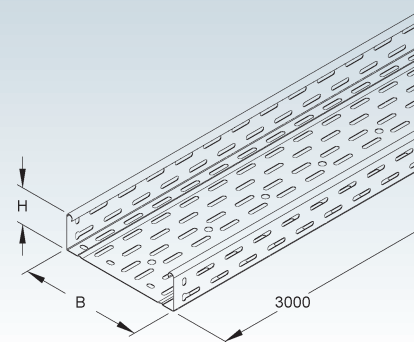
Cable Tray

perforated, splice plate not included

	Model No.	Height H	Width B	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm			
S	RLC 60.100 OV	60	100	917587	151,55	2 x 3 m
S	RLC 60.200 OV	60	200	917600	210,50	2 x 3 m
S	RLC 60.300 OV	60	300	917624	299,03	2 x 3 m
S	RLC 60.400 OV	60	400	917648	364,53	2 x 3 m
F	RLC 60.100 F OV	60	100	919208	166,71	2 x 3 m
F	RLC 60.200 F OV	60	200	919222	231,55	2 x 3 m
F	RLC 60.300 F OV	60	300	919246	328,93	2 x 3 m
F	RLC 60.400 F OV	60	400	919260	400,98	2 x 3 m

2 splice plates RVC 60/2 and 1 joint strip RSLC... please order separately for each joint.

60

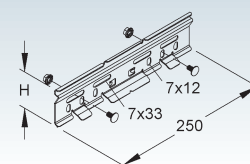


Connector

	Model No.	Height H	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RVC 60/2	60	2 FLM 6X12	870547	18,63	20 pcs.
F	RVC 60/2 F	60	2 FLM 6X12 F	919284	20,25	20 pcs.

Requirement: 2 pieces per joint

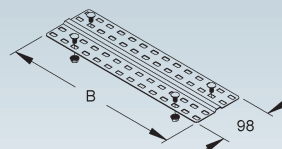
60



Joint Bar

	Model No.	Width B	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm				
S	RSLC 100	41,5	4 FLM 6X12	917655	5,93	10 pcs.
S	RSLC 200	139	4 FLM 6X12	917662	12,67	10 pcs.
S	RSLC 300	239	4 FLM 6X12	917686	19,61	10 pcs.
S	RSLC 400	339	4 FLM 6X12	870608	26,55	10 pcs.
F	RSLC 100 F	41,5	4 FLM 6x12 F	919307	6,21	10 pcs.
F	RSLC 200 F	139	4 FLM 6x12 F	919321	13,63	10 pcs.
F	RSLC 300 F	239	4 FLM 6x12 F	919345	21,26	10 pcs.
F	RSLC 400 F	339	4 FLM 6x12 F	919383	28,89	10 pcs.

Requirement: 1 piece per joint

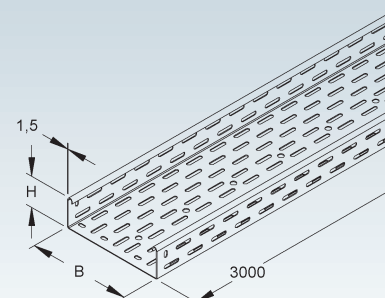


Cable Tray, heavy

perforated

	Model No.	Height H	Width B	Material thickness (t)	Incl. Accessories	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm				
S	RS 60.100	60	100	1,5	8 FLM 6X12	222605	250,01	2 x 3 m
S	RS 60.200	60	200	1,5	8 FLM 6X12	222803	350,29	2 x 3 m
S	RS 60.300	60	300	1,5	10 FLM 6X12	223008	451,10	2 x 3 m
S	RS 60.400	60	400	1,5	12 FLM 6X12	223206	551,91	2 x 3 m
S	RS 60.500	60	500	1,5	12 FLM 6X12	223404	652,20	2 x 3 m
S	RS 60.600	60	600	1,5	12 FLM 6X12	223602	752,48	2 x 3 m
F	RS 60.100 F	60	100	1,5	8 FLM 6X12 F	223800	274,80	2 x 3 m
F	RS 60.200 F	60	200	1,5	8 FLM 6X12 F	224005	385,11	2 x 3 m
F	RS 60.300 F	60	300	1,5	10 FLM 6X12 F	224203	495,95	2 x 3 m
F	RS 60.400 F	60	400	1,5	12 FLM 6X12 F	224401	606,79	2 x 3 m
F	RS 60.500 F	60	500	1,5	12 FLM 6X12 F	224609	717,10	2 x 3 m
F	RS 60.600 F	60	600	1,5	12 FLM 6X12 F	224807	827,42	2 x 3 m

60



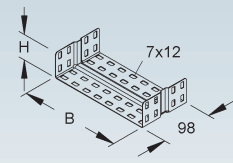
Splice Plate, single

U-shaped

	Model No.	Height H mm	Width B mm	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S	RV 60.100	49	96	8 FLM 6X12	271702	17,63	1 pc.
S	RV 60.200	49	196	8 FLM 6X12	271900	23,77	1 pc.
S	RV 60.300	49	296	10 FLM 6X12	272105	31,48	1 pc.
S	RV 60.400	49	396	12 FLM 6X12	272204	39,20	1 pc.
S	RV 60.500	49	496	12 FLM 6X12	272303	45,34	1 pc.
S	RV 60.600	49	596	12 FLM 6X12	272402	51,47	1 pc.
F	RV 60.100 F	49	96	8 FLM 6X12 F	540808	18,76	1 pc.
F	RV 60.200 F	49	196	8 FLM 6X12 F	540907	25,51	1 pc.
F	RV 60.300 F	49	296	10 FLM 6X12 F	541003	33,84	1 pc.
F	RV 60.400 F	49	396	12 FLM 6X12 F	541102	42,17	1 pc.
F	RV 60.500 F	49	496	12 FLM 6X12 F	541201	48,93	1 pc.
F	RV 60.600 F	49	596	12 FLM 6X12 F	541300	55,67	1 pc.

for additional requirements

60



Of course, joint connectors, angle connectors, reducers/end pieces, edge protectors, barrier strips, fittings and covers may also be used in an MLAR installation. See chapter "Cable Tray RS" for more information.

180

Overhead Hanger

U-profile

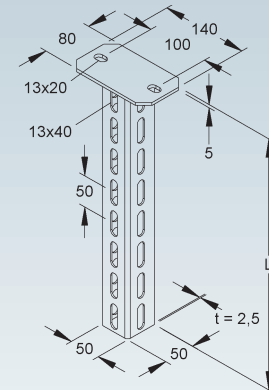
	Model No.	Total length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HU 5050/200	205	858705	93,08	1 pc.
F	HU 5050/300	305	858743	117,38	1 pc.
F	HU 5050/400	405	858767	141,67	1 pc.
F	HU 5050/500	505	858781	165,97	1 pc.
F	HU 5050/600	605	858804	190,27	1 pc.
F	HU 5050/700	705	858828	214,57	1 pc.
F	HU 5050/800	805	858842	238,87	1 pc.
F	HU 5050/900	905	858866	263,16	1 pc.
F	HU 5050/1000	1005	858880	287,46	1 pc.
F	HU 5050/1100	1105	858903	311,76	1 pc.
F	HU 5050/1200	1205	858927	336,06	1 pc.
F	HU 5050/1500	1505	858941	408,96	1 pc.
F	HU 5050/2000	2005	858965	530,44	1 pc.

Total length = U profile length, included fixing plate.

HU 5050/200, has limited space for equipment in cable trays (bracket length & height)

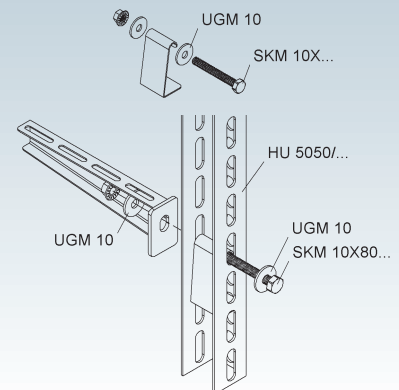
Series of oblong holes (13x40 mm) on 3 profile sides.

For mounting the brackets, the HDS 50.50 F overhead hanger-distance profile must generally be used when circuit integrity maintenance is required.



Overhead Hanger-Distance Profile

	Model No.	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	HDS 50.50 F	1 SKM 10X80 F, 2 UGM 10 F	931705	16,52	50 pcs.



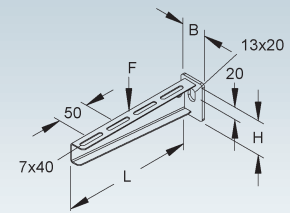
4 MLAR - INSTALLATION SYSTEMS

4.1 Cable Tray RLC... and RS...

Overhead Hanger- and Wall Bracket

standard

	Model No.	Height H	Width B	Length L	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm				
F	KTA 100	45	40	110	2 FLM 6X12	186907	15,52	20 pcs.
F	KTA 200	55	40	210	2 FLM 6X12	187102	27,41	20 pcs.
F	KTA 300	65	50	310	2 FLM 6X12	187300	59,08	20 pcs.
F	KTA 400	75	50	410	2 FLM 6X12	187508	79,08	20 pcs.
F	KTA 500	90	50	510	2 FLM 6X12	187706	111,01	10 pcs.
F	KTA 600	90	50	610	2 FLM 6X12	187904	127,42	10 pcs.

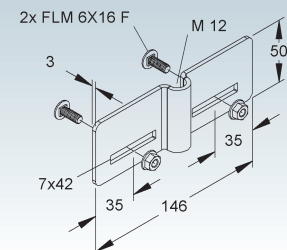


Support Bracket

to flange on

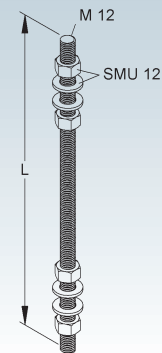
	Model No.	Incl. Accessories	for threaded rod	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	RGAB 12 F	2 FLM 6X16 F	M 12	947218	29,20	20 pcs.

for mounting the threaded rod on the cable tray beam in the direct vicinity of the bracket



Threaded Rod, M12

	Model No.	Length L	Resistance class	Incl. Accessories	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm					
V	M 12/200	200	4.8	4 SMU 12	203512	23,79	100 pcs.
V	M 12/300	300	4.8	4 SMU 12	203529	31,05	100 pcs.
V	M 12/400	400	4.8	4 SMU 12	203536	38,31	10 pcs.
V	M 12/500	500	4.8	4 SMU 12	203543	45,57	10 pcs.
V	M 12/600	600	4.8	4 SMU 12	203550	52,83	10 pcs.
V	M 12/800	800	4.8	4 SMU 12	203574	67,35	10 pcs.
V	M 12/1000	1000	4.8	4 SMU 12	345809	81,87	20 pcs.



Hexagon Nut acc. to DIN EN ISO 4032

incl. washer acc. to DIN EN ISO 7089

	Model No.	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V	SMU 12	12	344406	2,32	40 pcs.



Hexagon Screw acc. to DIN EN ISO 4017

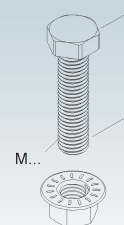
incl. toothed flange nut acc. to DIN EN 1661

	Model No.	Thread M	Length L	Strength class screw / nut	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
			mm				
F	SKM 10X80 F	10	80	8.8 / 8	886203	6,00	50 pcs.

The strength class of the screw is stamped on the screw head.

Especially for connections which have to transmit vertical loads via friction, it is essential to pay attention to the screw tightening torque and check it with the torque spanner!

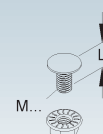
SKM 10..., screw tightening torque 48 Nm, width across flats 17/16



Mushroom-Head Bolt, similar to DIN 603

incl. toothed flange nut acc. to DIN EN 1661

	Model No.	Thread M	Length L	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
			mm				
V	FLM 6X12	6	12	-	206209	0,79	10 pcs.
F	FLM 6X12 F	6	12	-	206407	0,79	50 pcs.
F	FLM 6X16 F	6	16	-	206506	0,86	10 pcs.

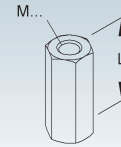


Junction Sleeve

hexagonal

Model No.	Thread M	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V VBSM 12	12	40	345700	4,40	50 pcs.

for connecting threaded rods



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co.KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
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Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
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4 MLAR - INSTALLATION SYSTEMS

4.2 Ceiling Support DT 50...

With the ceiling support DT 50..., we offer a very flexible, space-saving MLAR installation system that is characterised by low deflection in case of fire. For mounting on the ceiling, you only need a suitable M6 dowel

every 0.8 m and a mesh cable tray retaining bracket. The ceiling support DT 50... can be easily adapted to the structural conditions and allows cables to be laid without threading.

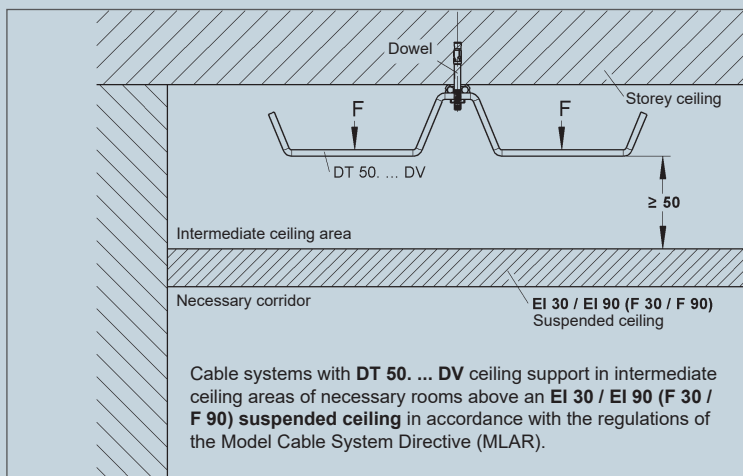
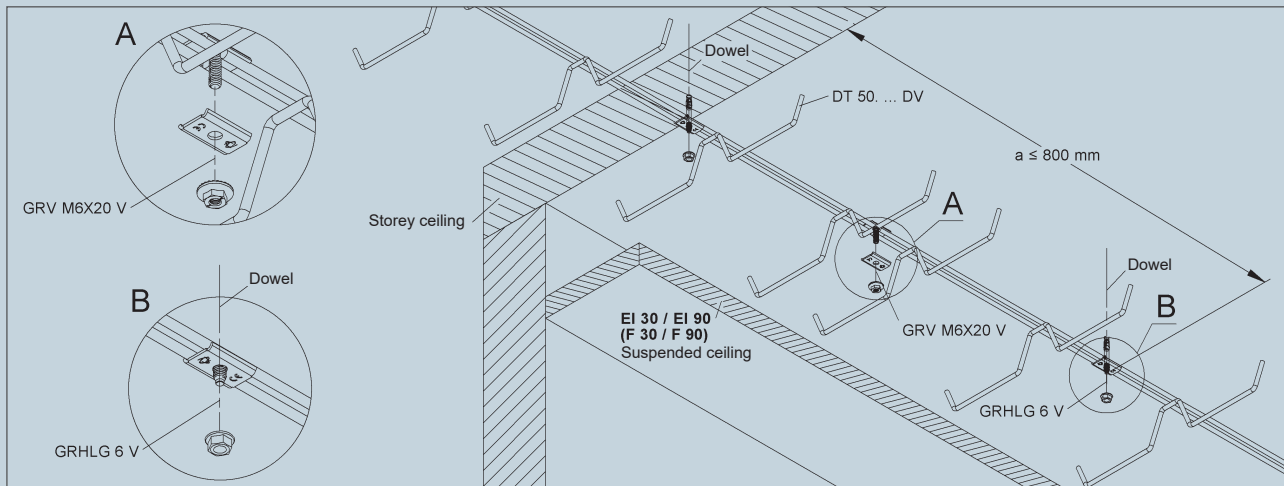
Fastening spacing $a \leq 0,8 \text{ m}$
Cable load $q \leq 3 \text{ kg/m}$

The ceiling support DT 50... consists of two longitudinal wires and all 211 mm orthogonally arranged cranked wires that serve as cable supports. Ceiling supports are available in widths of 200 mm and 300 mm with an installation depth of 55 mm.

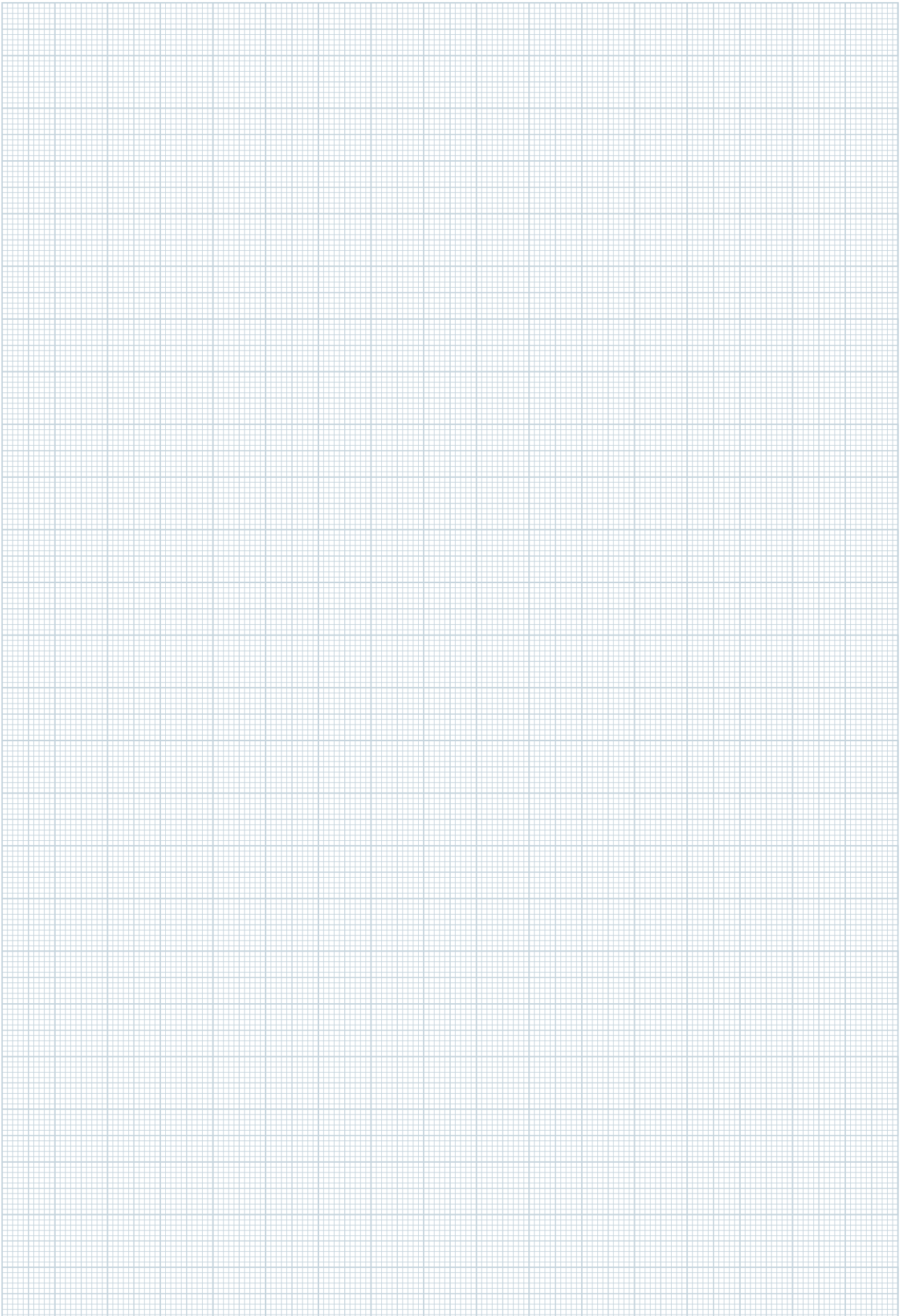
The joint connection is made with universal splice plate GRV M6X20 V. The ceiling fixing is made with a suitable M6 dowel and the GRHLG 6 V wire mesh tray support lug. The designs and values can be found in the fire protection evaluation.

Overview

Fastening spacing $a \leq 800 \text{ mm}$. Dead weight of cable $q \leq 3 \text{ kg/m}$ per side



NOTES



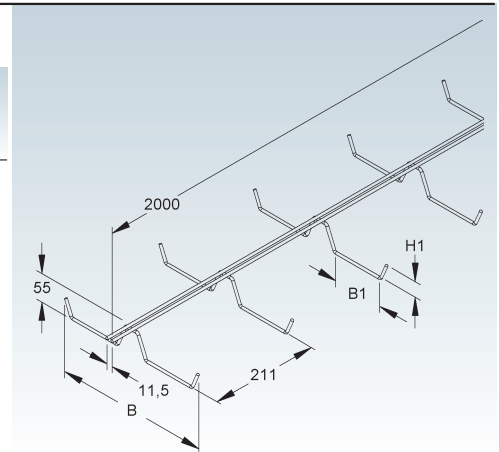
4 MLAR - INSTALLATION SYSTEMS

4.2 Ceiling Support DT 50...

Ceiling Support

W-shaped, galvanised wire according to DIN EN 10244-2

Model No.	Width B	Width B1	Steel wire-Ø lengthwise	Steel wire-Ø crosswise	EAN code	Weight in kg per 100 m	Smallest packaging unit
DV DT 50.200 DV	200	50	5	4	116072	45,44	2 m
DV DT 50.300 DV	300	99	5	5	088454	61,11	2 m

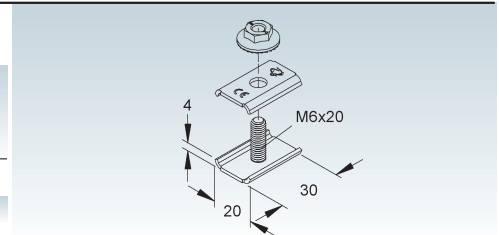


Wire Mesh Tray Universal Splice Plate

three-part, incl. toothed flange nut similar to DIN EN 1661

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V GRV M6X20 V	100996	2,26	50 pcs.

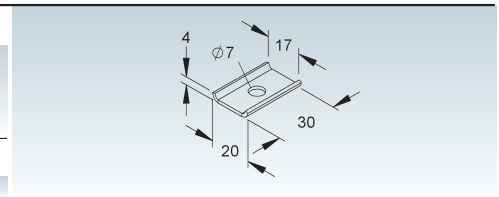
for creating longitudinal connections of continuous ceiling beams



Wire Mesh Tray Support Lug

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V GRHLG 6 V	100989	0,69	50 pcs.

for fastening the ceiling support to the ceiling



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

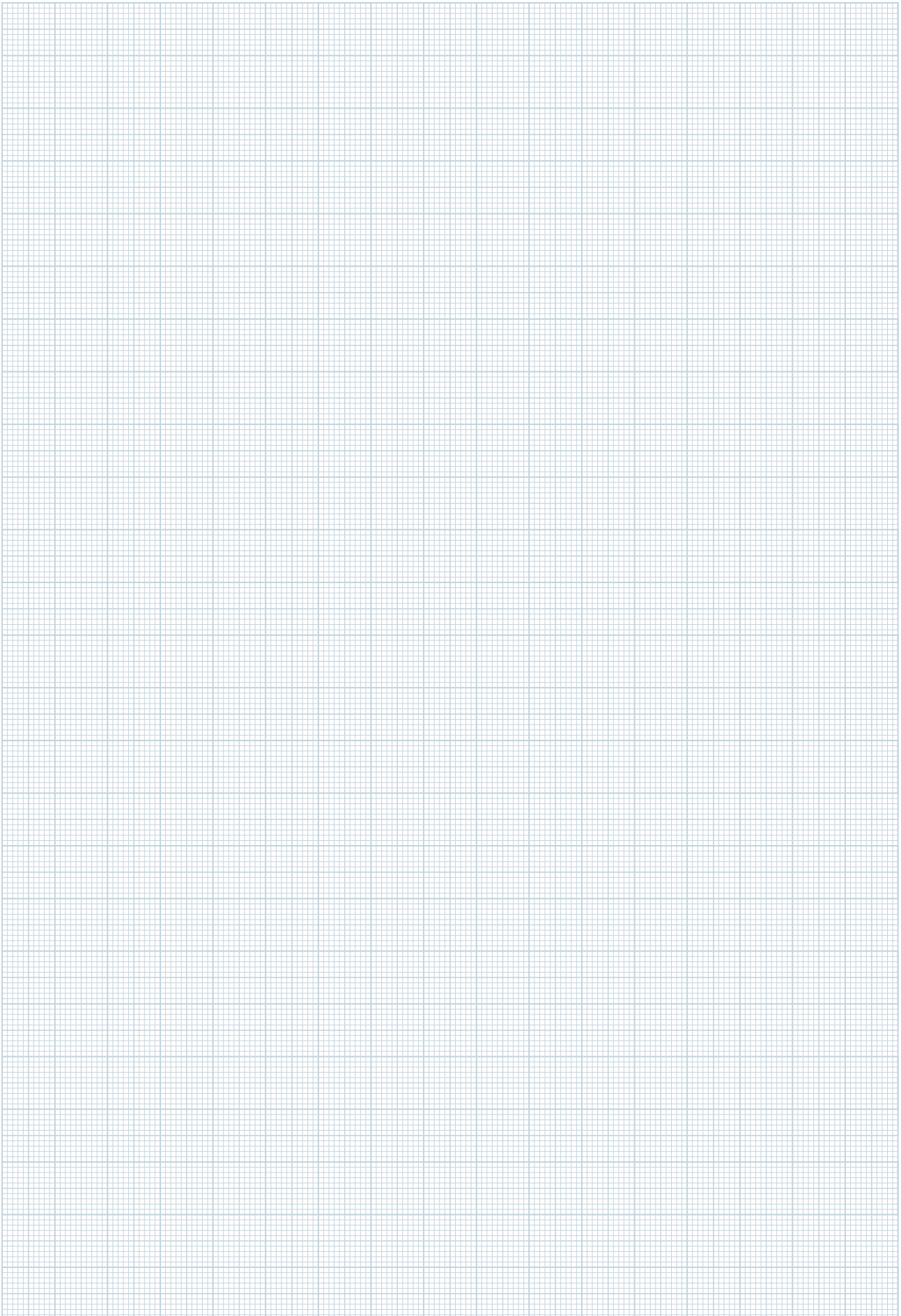
Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

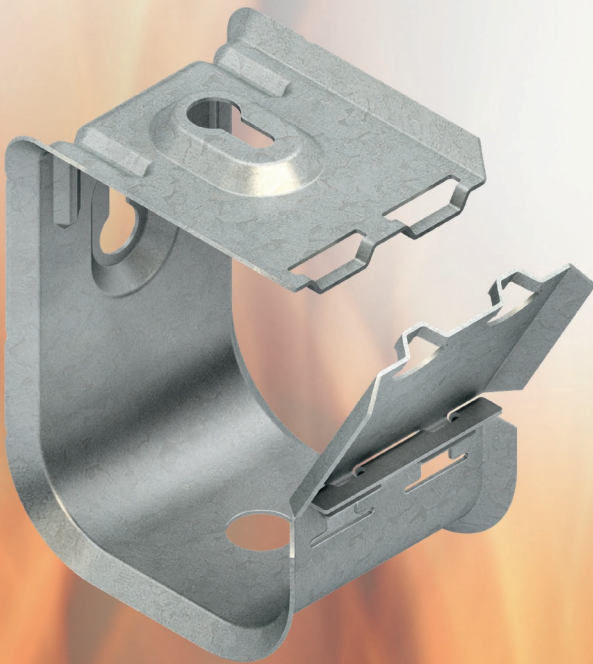
for marking functional maintenance cable trays

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NOTES





4 MLAR - INSTALLATION SYSTEMS

4.3 Collective Holder SHS...

The MLAR - installation system SHS... collective holder is characterised by practice-oriented fastening spacings $a \leq 0.6/0.8$ m and loads $q \leq 2.2/4.5/15$ kg/m.

The large opening allows easy insertion of cables without threading. Once the cable has been fully inserted, simply close the cap. Rewiring is possible at any time.

Support span $a \leq 0.6/0.8$ m
Cable load $q \leq 2.2/4.5/15$ kg/m

With this cable routing system for horizontal cable routing on walls and ceilings in accordance with MLAR, SHS... collective holders are available in 3 sizes.

Depending on the amount of cable to be routed, the SHS 15 and SHS 30 collective holders can be used for a fastening spacing of $a \leq 600$ mm and a cable weight of $q \leq 2.2$ or 4.5 kg/m, or the SHS 80 collective holder for a fastening spacing of $a \leq 800$ mm and a cable weight of $q \leq 15$ kg/m.

They can be used above suspended EI 30 (F 30) to EI 90 (F 90) intermediate ceilings in accordance with the MLAR.

For fastening spacings and loads, please refer to the fire protection assessments.

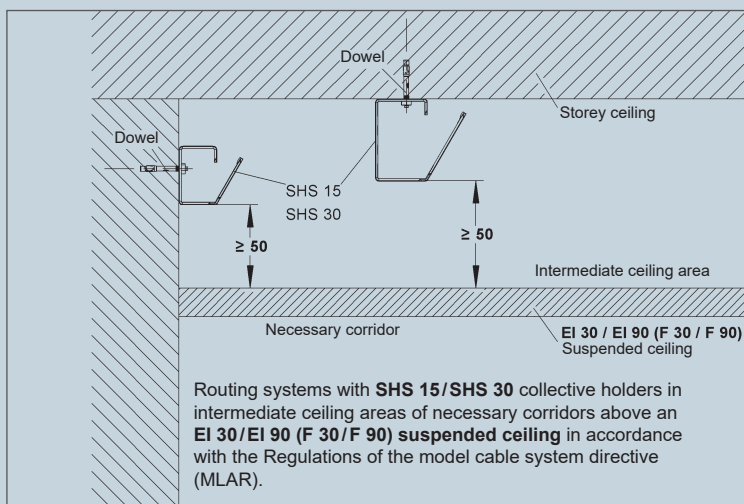
The SHS... collective holders have keyholes for fastening to the wall or ceiling, which eliminates the need to remove the pre-assembled nut and washer from the fastener.

The mounting of the collective holders is done with suitable and tested fasteners $\geq M6$.

Overview

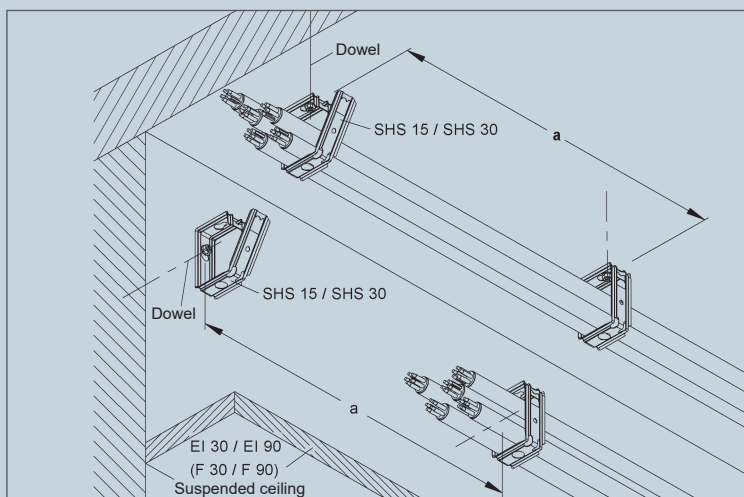
Collective holders SHS 15 - SHS 30 . Fastening spacing $a \leq 600$ mm . Dead weight of cable SHS 15 $q \leq 2.2$ kg/m / SHS 30 $q \leq 4.5$ kg/m
 Collective holder SHS 80 S . Fastening spacing $a \leq 800$ mm . Dead weight of cable SHS 80 S $q \leq 15$ kg/m

For the distances to be maintained between the system and the suspended ceiling, please refer to the fire protection assessment on our homepage www.niedax.com.



Suitable dowels can be found in chapter "8 Fastening Elements". ➔ 256

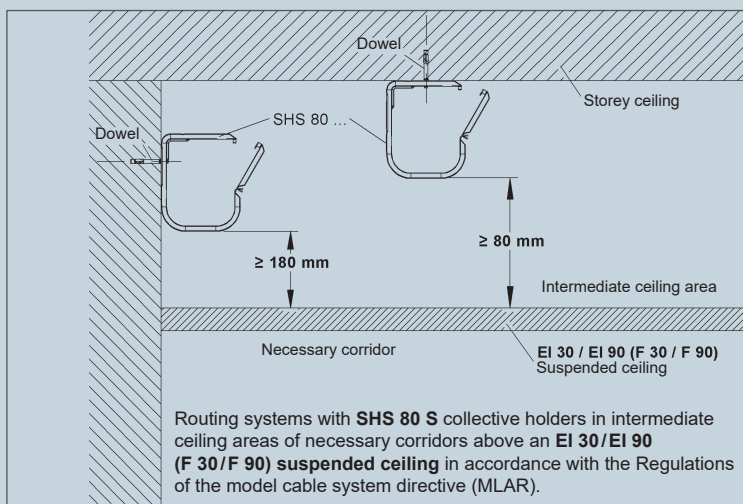
Mounting SHS 15 and SHS 30



Overview

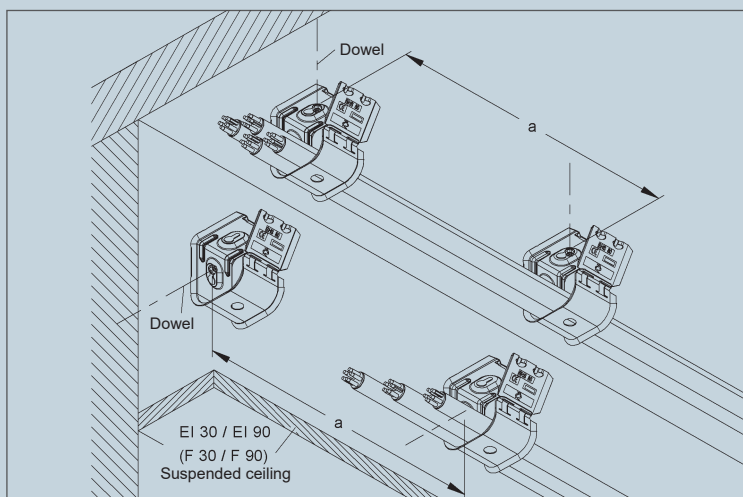
Collective holders SHS 15 - SHS 30 . Fastening spacing $a \leq 600$ mm . Dead weight of cable SHS 15 $q \leq 2.2$ kg/m / SHS 30 $q \leq 4.5$ kg/m
 Collective holder SHS 80 S . Fastening spacing $a \leq 800$ mm . Dead weight of cable SHS 80 S $q \leq 15$ kg/m

For the distances to be maintained between the system and the suspended ceiling, please refer to the fire protection assessment on our homepage www.niedax.com.



Suitable dowels can be found in chapter "8 Fastening Elements". ➔ 256

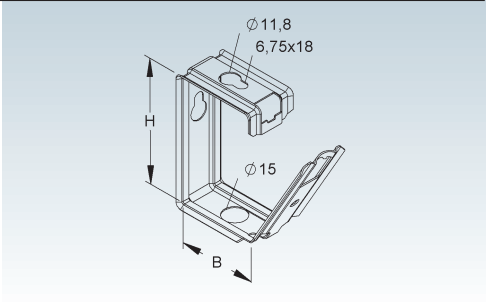
Mounting SHS 80 S



Cable Bundler

Model No.	Inside height H mm	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S SHS 15	56	34	837908	3,44	50 pcs.
S SHS 30	81	50	837953	5,19	25 pcs.

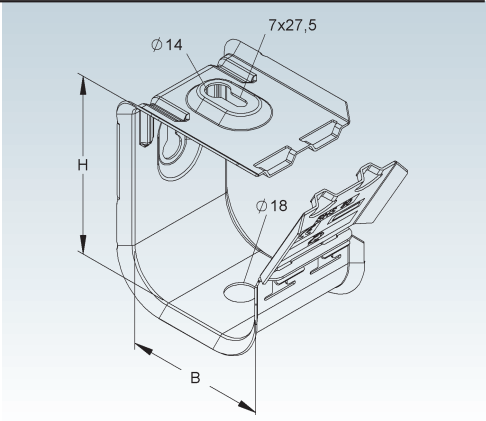
for laying cable bundles on wall and ceiling
for laying cables in false ceilings in accordance with the Model Cable Installation Guidelines (MLAR)
for cable laying in functional maintenance acc. to DIN 4102-12
High mechanical strength



Cable Bundler

Model No.	Inside height H mm	Inside dimensions width B mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
S SHS 80 S	114,5	90	092772	32,58	10 pcs.

for laying cable bundles on wall and ceiling
for laying cables for the general power supply in false ceilings in accordance with the Model Cable Installation Guidelines (MLAR).
for cable laying in functional maintenance acc. to DIN 4102-12
High mechanical strength



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

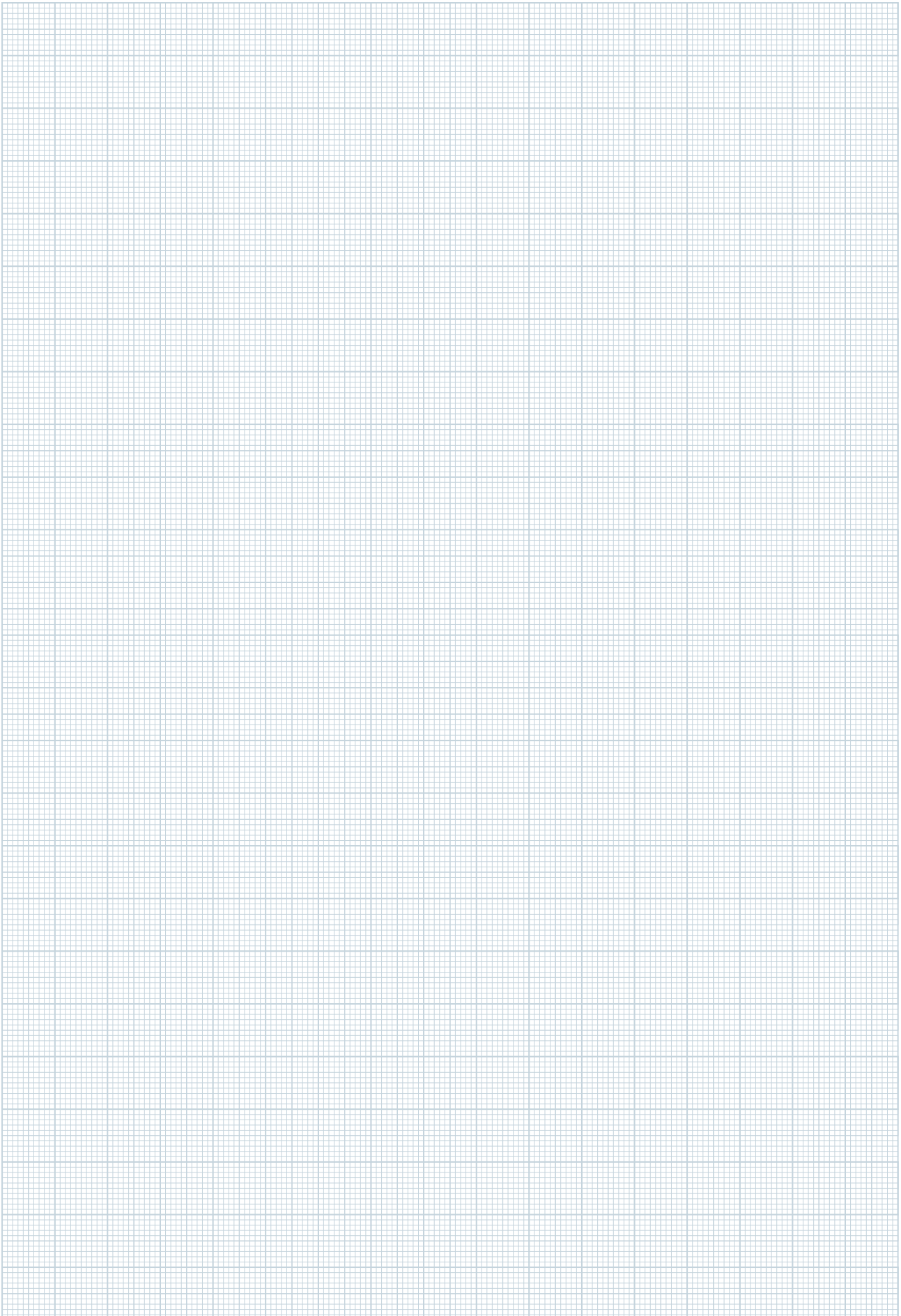
for marking functional maintenance cable trays

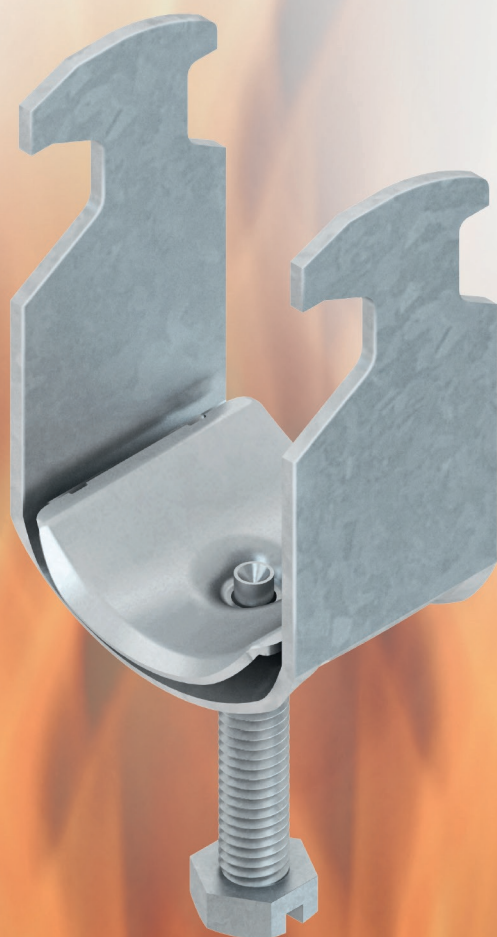
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Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		
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Suitable dowels can be found in chapter "8 Fastening Elements".



NOTES





4 MLAR - INSTALLATION SYSTEMS

4.4 Clamps B..., BU..., LW..., SAS... and 85...

The cable installation systems clamps SAS..., 85... as well as B... and BU... with or without long trough LW... of the so-called standard support construction can also be used in the MLAR installation system.

This installation system enables fast, flexible and space-saving installation of individual cables above EI 30/EI 90 (F 30/F 90) suspended ceilings.

Fastening spacing
 $a \leq 0,3 \text{ m}$ resp. $a \leq 0,6 \text{ m}$

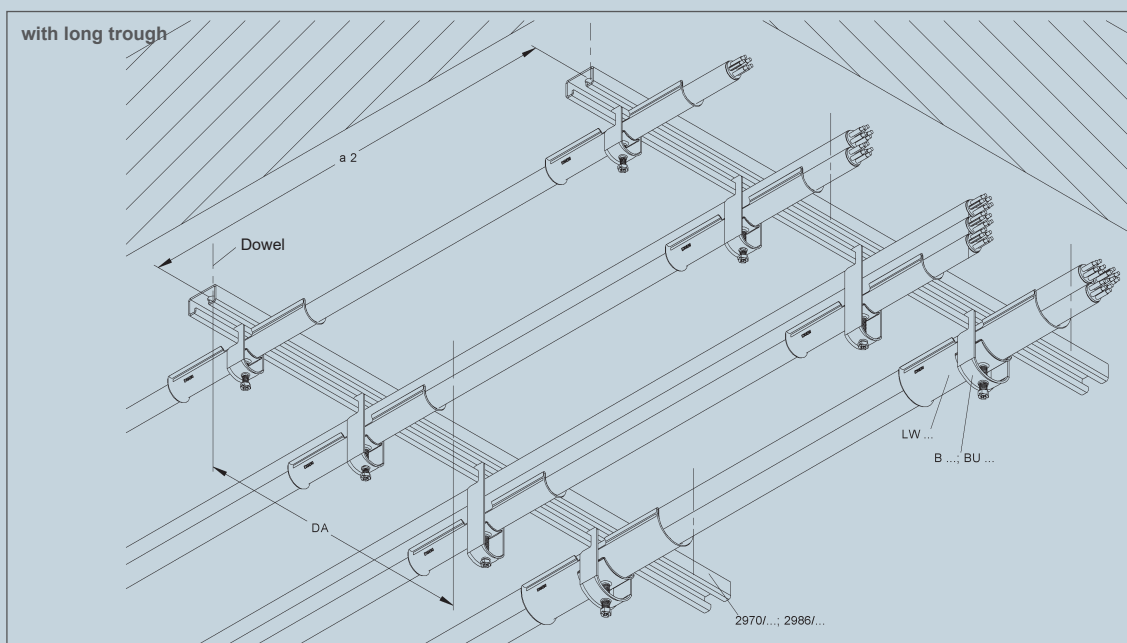
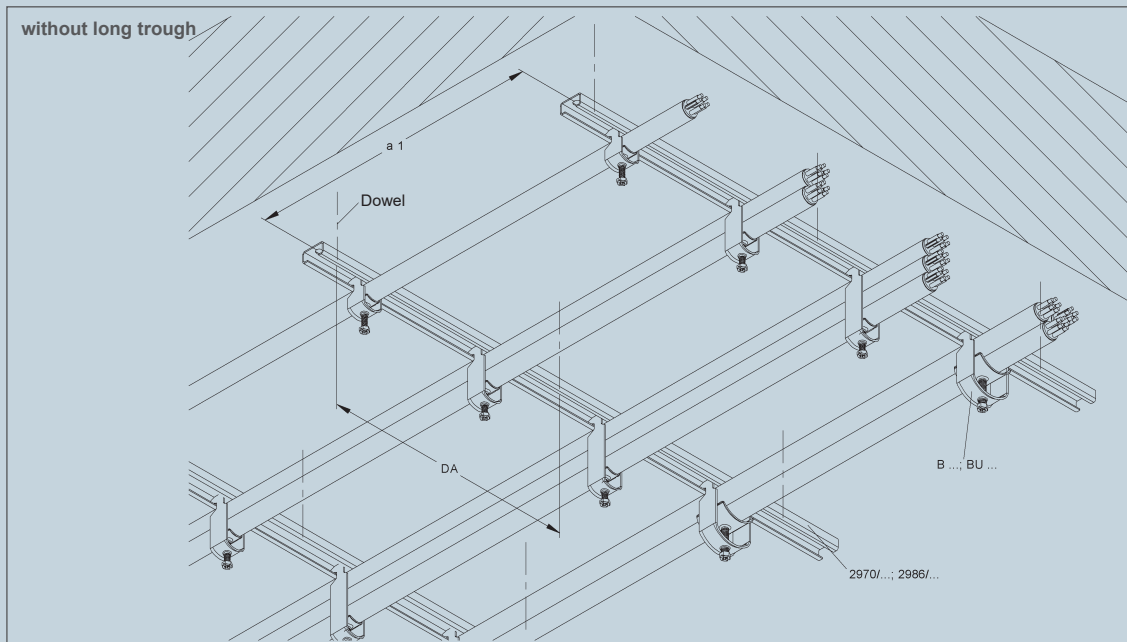
The screw distance clamps SAS... and 85... as well as the cable U-clamps B... and BU... with or without long trough LW..., galvanised or stainless steel, fulfil the criteria as a standard support construction according to DIN 4102 Part 12 for the circuit integrity maintenance classes E30 to E90 and can be used for horizontal cable laying on walls and ceilings as well as vertically. When laying cables horizontally on walls with U-clamps and C-profile rails, suitable measures must be taken to prevent slipping.

For screw distance clamps SAS... and 85... as well as for U-clamps B... and BU... the fastening spacing a is $\leq 300 \text{ mm}$, for U-clamps B... or BU... with long trough LW... the fastening spacing a is $\leq 600 \text{ mm}$.

For fastening in the ground, use fastening elements M6 for screw distance clamps SAS... and 85... and fastening elements $\geq \text{M6}$ for C-profile rails of the U-clamp. The fastening spacing DA (dowel spacing) along a C-profile rail is $\leq 250 \text{ mm}$.

Mounting B... and BU...

Fastening spacings without long trough $a \leq 300$ mm . Fastening spacings with long trough $a \leq 600$ mm



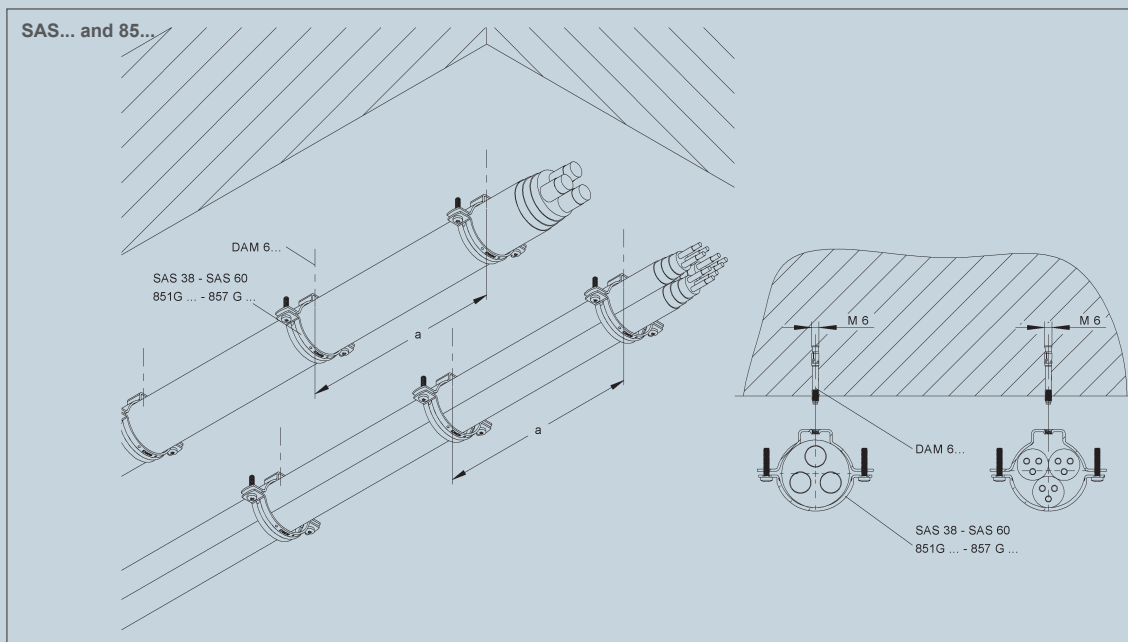
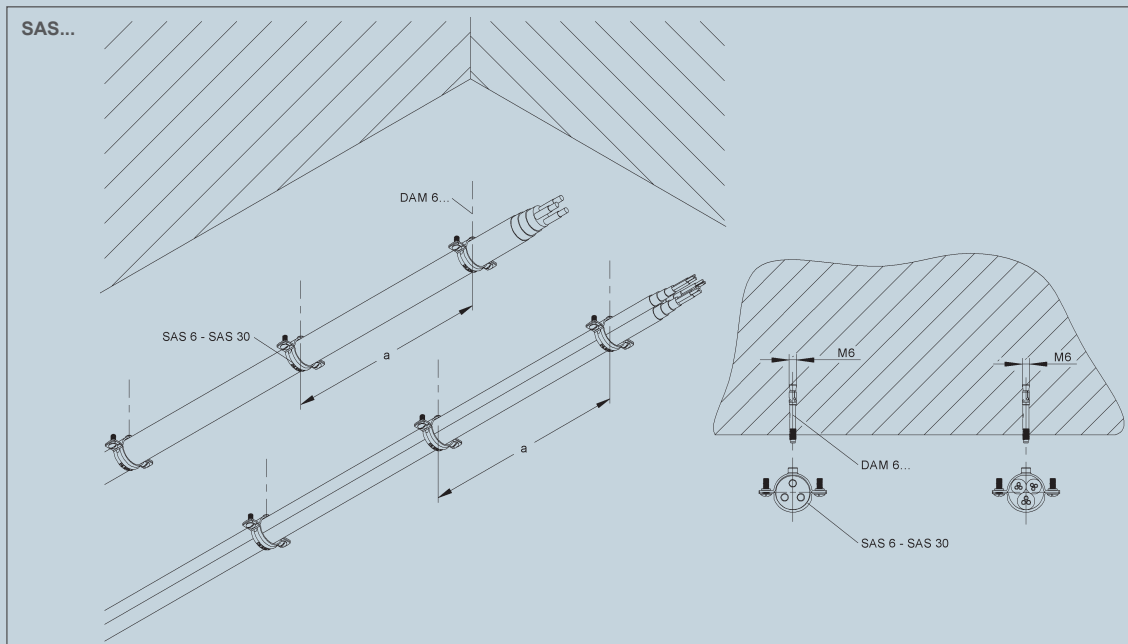
When laying cables horizontally on the wall with cable U-clamps and C-profile rails, it must be ensured that the cable U-clamps do not slip sideways out of the C-profile in case of fire.

The design and instructions of the expert judgement report on the standard support construction must be taken into account.

Stainless steel can be used as an alternative to the galvanised steel version.

Mounting SAS... and 85...

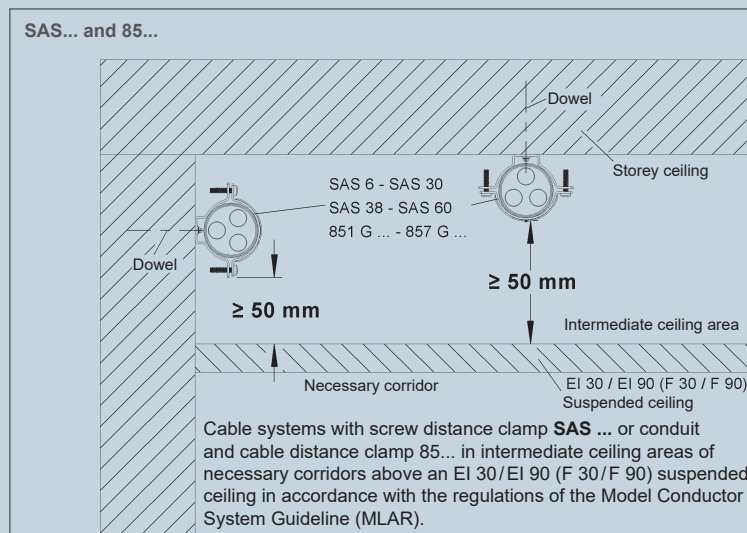
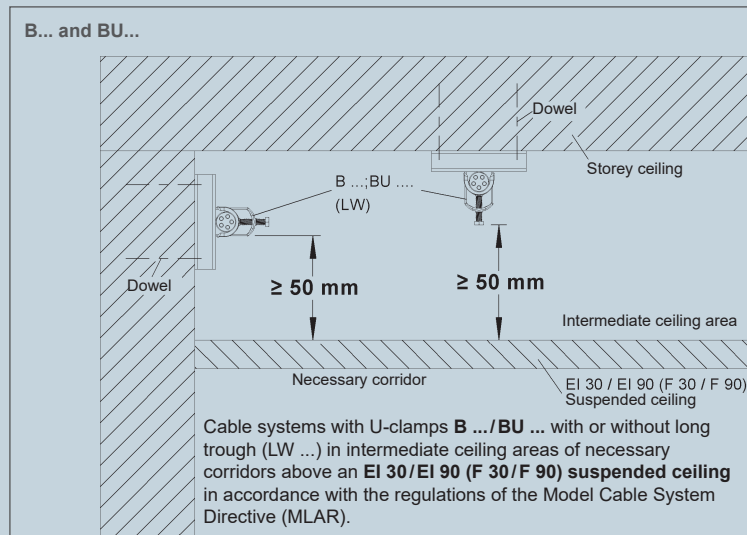
Fastening spacing $a \leq 300$ mm



The explanations and notes in the expert judgement report on the standard support construction are to be taken into account.

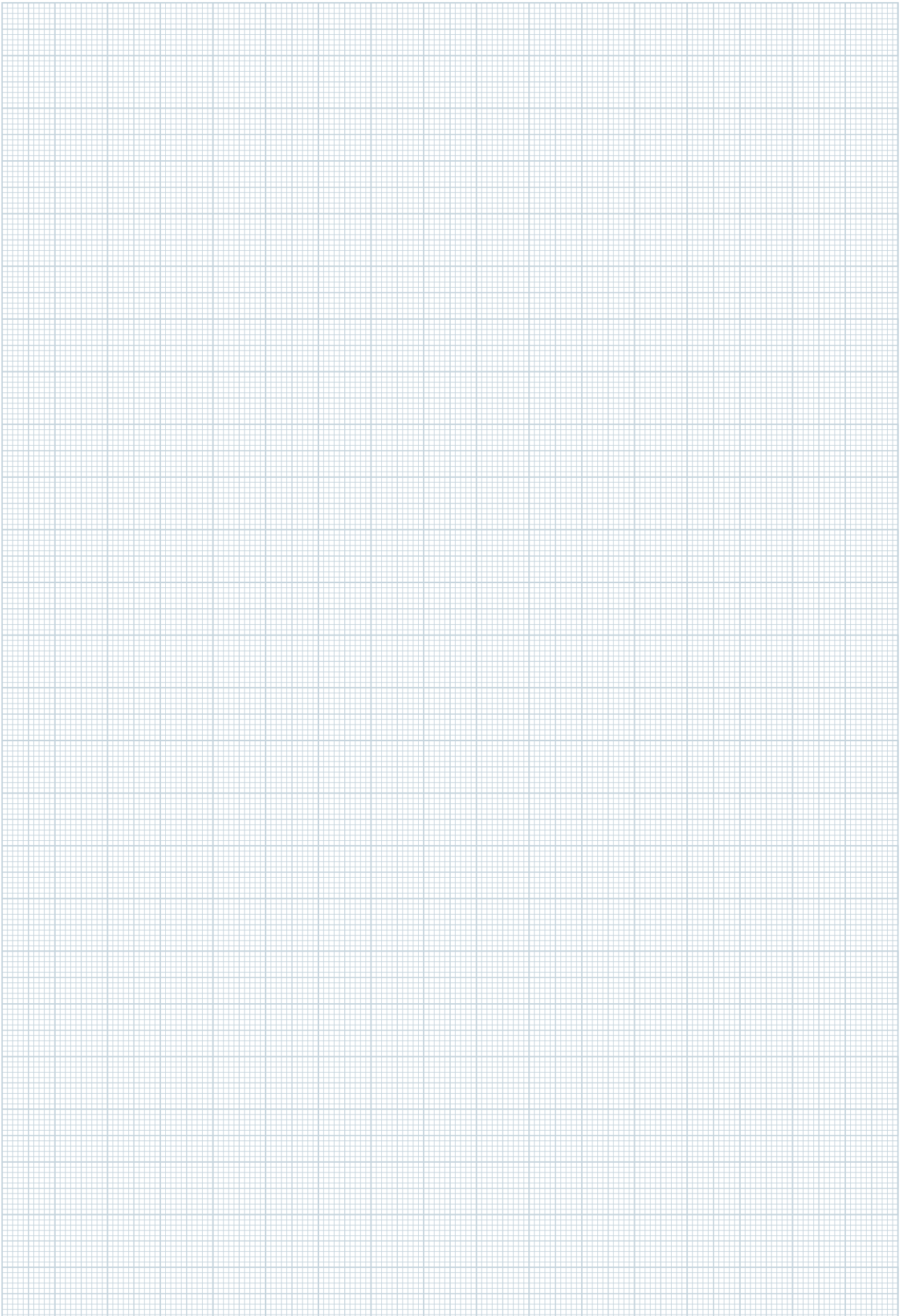
Stainless steel can be used as an alternative to the galvanised steel version.

Suspended ceiling installation B..., BU..., SAS and 85...



Suitable dowels can be found in chapter “8 Fastening Elements”. ➡ 256

NOTES



4 MLAR - INSTALLATION SYSTEMS

4.4 Clamps B..., BU..., LW..., SAS... and 85...

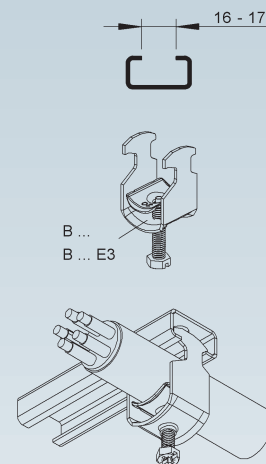
Cable U-Clamp

with pressure trough

Model No.	For cable-Ø	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
F B 12	6 - 12	SH with multiple drive	6	047406	2,63	100 pcs.
F B 14	10 - 14	SH with multiple drive	6	047505	2,78	100 pcs.
F B 16	12 - 16	SH with multiple drive	6	047604	2,92	100 pcs.
F B 18	14 - 18	SH with multiple drive	6	047703	3,14	100 pcs.
F B 22	16 - 22	SH with multiple drive	6	047802	3,67	100 pcs.
F B 26	22 - 26	SH with multiple drive	6	047901	4,10	100 pcs.
F B 30	22 - 30	SH with multiple drive	6	048007	4,70	100 pcs.
F B 34	28 - 34	SH with multiple drive	6	048106	6,07	100 pcs.
F B 38	34 - 38	SH with multiple drive	6	048205	8,07	100 pcs.
F B 42	34 - 42	SH with multiple drive	6	048304	8,61	100 pcs.
F B 46	40 - 46	SH with multiple drive	8	048403	10,15	100 pcs.
F B 50	46 - 50	SH with multiple drive	8	048502	10,55	50 pcs.
F B 54	46 - 54	SH with multiple drive	8	048601	11,44	50 pcs.
F B 58	52 - 58	SH with multiple drive	8	048700	12,00	50 pcs.
F B 64	58 - 64	SH with multiple drive	8	048809	13,09	50 pcs.
F B 70	64 - 70	SH with multiple drive	8	048908	14,49	50 pcs.
F B 76	70 - 76	SH with multiple drive	8	049004	18,10	50 pcs.
F B 82	76 - 82	SH with multiple drive	8	049103	18,76	50 pcs.
F B 90	82 - 90	SH with multiple drive	8	049202	21,62	50 pcs.
F B 100	90 - 100	SH with multiple drive	8	049301	23,55	25 pcs.
F B 110	100 - 110	SH with multiple drive	8	049400	26,00	25 pcs.
E3 B 14 E3	8 - 14	SH with multiple drive	6	081905	2,39	100 pcs.
E3 B 18 E3	12 - 18	SH with multiple drive	6	082001	2,78	100 pcs.
E3 B 22 E3	16 - 22	SH with multiple drive	6	082100	3,14	100 pcs.
E3 B 26 E3	22 - 26	SH with multiple drive	6	082209	3,93	100 pcs.
E3 B 30 E3	22 - 30	SH with multiple drive	6	082308	4,50	100 pcs.
E3 B 34 E3	28 - 34	SH with multiple drive	6	082407	5,82	100 pcs.
E3 B 38 E3	34 - 38	SH with multiple drive	6	082506	6,47	100 pcs.
E3 B 42 E3	34 - 42	SH with multiple drive	6	082605	6,92	100 pcs.
E3 B 46 E3	40 - 46	SH with multiple drive	8	082704	9,73	100 pcs.
E3 B 50 E3	46 - 50	SH with multiple drive	8	082803	10,11	50 pcs.
E3 B 54 E3	46 - 54	SH with multiple drive	8	082902	10,97	50 pcs.
E3 B 58 E3	52 - 58	SH with multiple drive	8	083008	11,50	50 pcs.
E3 B 64 E3	58 - 64	SH with multiple drive	8	083107	12,58	50 pcs.
E3 B 70 E3	64 - 70	SH with multiple drive	8	083206	13,88	50 pcs.
E3 B 76 E3	70 - 76	SH with multiple drive	8	083305	17,33	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



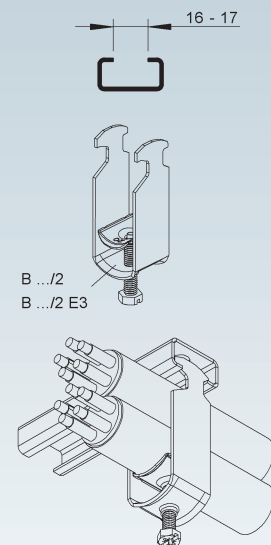
Cable U-Clamp

with pressure trough

Model No.	For cable-Ø	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm					
F B 12/2	10 - 12	SH with multiple drive	6	049509	3,34	100 pcs.
F B 14/2	12 - 14	SH with multiple drive	6	049608	3,73	100 pcs.
F B 16/2	14 - 16	SH with multiple drive	6	049707	4,11	100 pcs.
F B 18/2	16 - 18	SH with multiple drive	6	049806	4,44	100 pcs.
F B 22/2	18 - 22	SH with multiple drive	6	049905	5,27	100 pcs.
F B 26/2	22 - 26	SH with multiple drive	6	050000	5,94	100 pcs.
F B 30/2	26 - 30	SH with multiple drive	6	050109	6,60	100 pcs.
F B 34/2	30 - 34	SH with multiple drive	6	050208	8,42	100 pcs.
F B 38/2	34 - 38	SH with multiple drive	6	050307	11,65	50 pcs.
F B 42/2	38 - 42	SH with multiple drive	6	050406	11,99	50 pcs.
F B 46/2	42 - 46	SH with multiple drive	8	050505	14,03	50 pcs.
F B 50/2	46 - 50	SH with multiple drive	8	050604	15,08	50 pcs.
E3 B 14/2 E3	12 - 14	SH with multiple drive	6	083404	3,14	100 pcs.
E3 B 18/2 E3	16 - 18	SH with multiple drive	6	083503	3,82	100 pcs.
E3 B 22/2 E3	20 - 22	SH with multiple drive	6	083602	4,42	100 pcs.
E3 B 26/2 E3	24 - 26	SH with multiple drive	6	083701	5,69	100 pcs.
E3 B 30/2 E3	26 - 30	SH with multiple drive	6	083800	6,32	100 pcs.
E3 B 34/2 E3	32 - 34	SH with multiple drive	6	083909	8,07	100 pcs.
E3 B 38/2 E3	36 - 38	SH with multiple drive	6	084005	9,06	50 pcs.
E3 B 42/2 E3	40 - 42	SH with multiple drive	6	084104	9,80	50 pcs.
E3 B 46/2 E3	44 - 46	SH with multiple drive	8	084203	13,44	50 pcs.
E3 B 50/2 E3	48 - 50	SH with multiple drive	8	084302	14,45	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



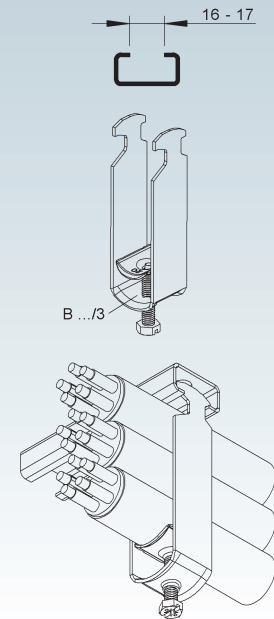
Cable U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	B 12/3	9 - 12	SH with multiple drive	6	050703	3,93	100 pcs.
F	B 14/3	12 - 14	SH with multiple drive	6	050802	4,73	100 pcs.
F	B 16/3	14 - 16	SH with multiple drive	6	050901	5,12	100 pcs.
F	B 18/3	16 - 18	SH with multiple drive	6	051007	5,45	100 pcs.
F	B 20/3	18 - 20	SH with multiple drive	6	051106	6,01	100 pcs.
F	B 22/3	20 - 22	SH with multiple drive	6	051205	6,58	100 pcs.
F	B 24/3	22 - 24	SH with multiple drive	6	051304	6,73	100 pcs.
F	B 26/3	24 - 26	SH with multiple drive	6	051403	7,66	100 pcs.
F	B 28/3	26 - 28	SH with multiple drive	6	051502	8,22	100 pcs.
F	B 30/3	28 - 30	SH with multiple drive	6	051601	8,32	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 16-17 mm



4 MLAR - INSTALLATION SYSTEMS

4.4 Clamps B..., BU..., LW..., SAS... and 85...

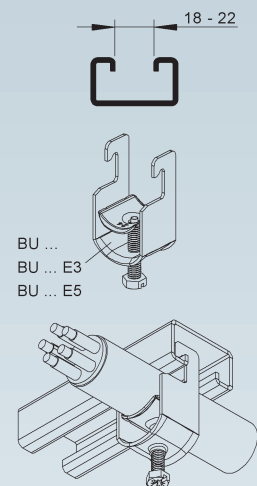
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12	6 - 12	SH with multiple drive	6	064601	2,83	100 pcs.
F	BU 14	10 - 14	SH with multiple drive	6	064700	3,16	100 pcs.
F	BU 16	12 - 16	SH with multiple drive	6	064908	3,30	100 pcs.
F	BU 18	14 - 18	SH with multiple drive	6	065004	3,46	100 pcs.
F	BU 22	16 - 22	SH with multiple drive	6	065103	3,91	100 pcs.
F	BU 26	22 - 26	SH with multiple drive	6	065202	4,33	100 pcs.
F	BU 30	22 - 30	SH with multiple drive	6	065301	4,81	100 pcs.
F	BU 34	28 - 34	SH with multiple drive	6	065400	6,06	100 pcs.
F	BU 38	34 - 38	SH with multiple drive	6	065509	8,03	100 pcs.
F	BU 42	34 - 42	SH with multiple drive	6	065608	8,61	100 pcs.
F	BU 46	40 - 46	SH with multiple drive	8	065707	9,95	100 pcs.
F	BU 50	46 - 50	SH with multiple drive	8	065806	10,31	50 pcs.
F	BU 54	46 - 54	SH with multiple drive	8	065905	11,25	50 pcs.
F	BU 58	52 - 58	SH with multiple drive	8	066001	11,88	50 pcs.
F	BU 64	58 - 64	SH with multiple drive	8	066100	12,68	50 pcs.
F	BU 70	64 - 70	SH with multiple drive	8	066209	14,15	50 pcs.
F	BU 76	70 - 76	SH with multiple drive	8	066308	17,83	50 pcs.
F	BU 82	76 - 82	SH with multiple drive	8	066407	18,40	50 pcs.
F	BU 90	82 - 90	SH with multiple drive	8	066506	20,34	50 pcs.
F	BU 100	90 - 100	SH with multiple drive	8	066605	22,62	25 pcs.
F	BU 110	100 - 110	SH with multiple drive	8	066704	24,77	25 pcs.
E3	BU 12 E3	6 - 12	SH with multiple drive	6	757701	2,56	100 pcs.
E3	BU 14 E3	10 - 14	SH with multiple drive	6	757800	2,71	100 pcs.
E3	BU 18 E3	14 - 18	SH with multiple drive	6	757909	2,95	100 pcs.
E3	BU 22 E3	18 - 22	SH with multiple drive	6	758005	3,50	100 pcs.
E3	BU 26 E3	22 - 26	SH with multiple drive	6	758104	4,37	100 pcs.
E3	BU 30 E3	26 - 30	SH with multiple drive	6	758203	4,90	100 pcs.
E3	BU 34 E3	30 - 34	SH with multiple drive	6	758302	6,16	100 pcs.
E3	BU 38 E3	34 - 38	SH with multiple drive	6	758401	6,83	100 pcs.
E3	BU 42 E3	38 - 42	SH with multiple drive	6	758500	7,27	100 pcs.
E3	BU 46 E3	42 - 46	SH with multiple drive	8	758609	9,38	100 pcs.
E3	BU 50 E3	46 - 50	SH with multiple drive	8	758708	9,90	50 pcs.
E3	BU 54 E3	50 - 54	SH with multiple drive	8	758807	10,62	50 pcs.
E3	BU 58 E3	54 - 58	SH with multiple drive	8	758906	11,23	50 pcs.
E5	BU 12 E5	6 - 12	SK with multiple drive	6	890507	2,58	100 pcs.
E5	BU 14 E5	10 - 14	SK with multiple drive	6	890101	2,73	100 pcs.
E5	BU 18 E5	12 - 18	SK with multiple drive	6	890149	2,98	100 pcs.
E5	BU 22 E5	16 - 22	SK with multiple drive	6	890163	3,36	100 pcs.
E5	BU 26 E5	22 - 26	SK with multiple drive	6	890187	4,41	100 pcs.
E5	BU 30 E5	22 - 30	SK with multiple drive	6	890200	4,96	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



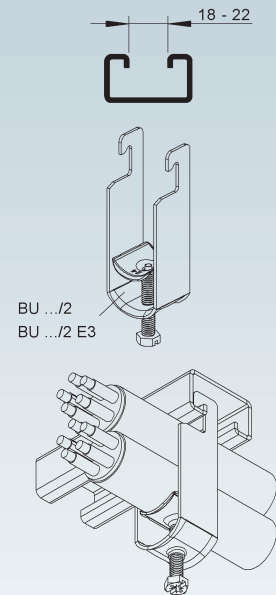
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12/2	10 - 12	SH with multiple drive	6	066803	3,67	100 pcs.
F	BU 14/2	12 - 14	SH with multiple drive	6	066902	4,14	100 pcs.
F	BU 16/2	14 - 16	SH with multiple drive	6	067008	4,37	100 pcs.
F	BU 18/2	16 - 18	SH with multiple drive	6	067107	4,64	100 pcs.
F	BU 22/2	18 - 22	SH with multiple drive	6	067206	5,40	100 pcs.
F	BU 26/2	22 - 26	SH with multiple drive	6	067305	6,21	100 pcs.
F	BU 30/2	26 - 30	SH with multiple drive	6	067404	6,87	100 pcs.
F	BU 34/2	30 - 34	SH with multiple drive	6	067503	8,36	100 pcs.
F	BU 38/2	34 - 38	SH with multiple drive	6	067602	11,45	50 pcs.
F	BU 42/2	38 - 42	SH with multiple drive	6	067701	12,43	50 pcs.
F	BU 46/2	42 - 46	SH with multiple drive	8	067800	13,91	50 pcs.
F	BU 50/2	46 - 50	SH with multiple drive	8	067909	14,92	50 pcs.
E3	BU 12/2 E3	10 - 12	SH with multiple drive	6	759002	3,26	100 pcs.
E3	BU 14/2 E3	12 - 14	SH with multiple drive	6	759101	3,48	100 pcs.
E3	BU 16/2 E3	14 - 16	SH with multiple drive	6	759156	3,86	100 pcs.
E3	BU 18/2 E3	16 - 18	SH with multiple drive	6	759200	4,09	100 pcs.
E3	BU 22/2 E3	18 - 22	SH with multiple drive	6	759309	4,77	100 pcs.
E3	BU 26/2 E3	22 - 26	SH with multiple drive	6	759408	5,95	100 pcs.
E3	BU 30/2 E3	26 - 30	SH with multiple drive	6	759507	6,97	100 pcs.
E3	BU 34/2 E3	30 - 34	SH with multiple drive	6	759606	8,47	100 pcs.
E3	BU 38/2 E3	34 - 38	SH with multiple drive	6	759705	9,43	50 pcs.
E3	BU 42/2 E3	38 - 42	SH with multiple drive	6	759804	10,18	50 pcs.
E3	BU 46/2 E3	42 - 46	SH with multiple drive	8	759903	13,34	50 pcs.
E3	BU 50/2 E3	46 - 50	SH with multiple drive	8	760008	14,31	50 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



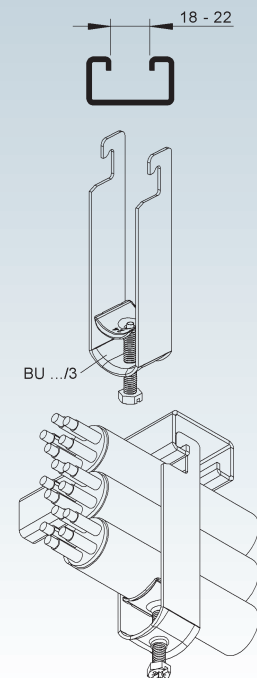
Universal-U-Clamp

with pressure trough

	Model No.	For cable-Ø mm	Screw Head	Thread M	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F	BU 12/3	10 - 12	SH with multiple drive	6	068005	4,61	100 pcs.
F	BU 14/3	12 - 14	SH with multiple drive	6	068104	5,11	100 pcs.
F	BU 16/3	14 - 16	SH with multiple drive	6	068203	5,47	100 pcs.
F	BU 18/3	16 - 18	SH with multiple drive	6	068302	5,83	100 pcs.
F	BU 20/3	18 - 20	SH with multiple drive	6	068401	6,27	100 pcs.
F	BU 22/3	20 - 22	SH with multiple drive	6	068500	6,91	100 pcs.
F	BU 24/3	22 - 24	SH with multiple drive	6	068609	7,48	100 pcs.
F	BU 26/3	24 - 26	SH with multiple drive	6	068708	7,87	100 pcs.
F	BU 28/3	26 - 28	SH with multiple drive	6	068807	8,35	100 pcs.
F	BU 30/3	28 - 30	SH with multiple drive	6	068906	8,82	100 pcs.

In version F, the steel pressure trough is pre-galvanised acc. to DIN EN 10346.

Used for: C-profiles with slot width 18-22 mm



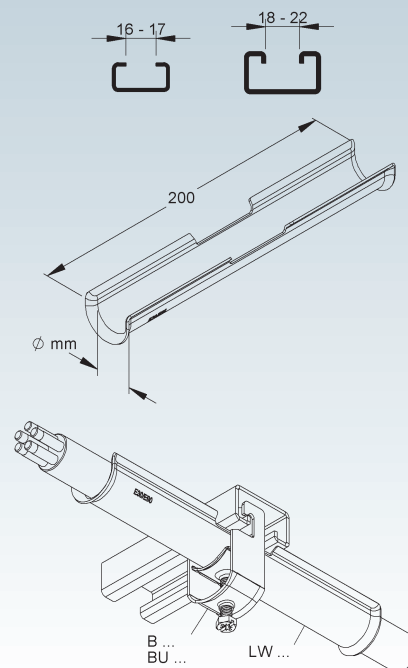
4 MLAR - INSTALLATION SYSTEMS

4.4 Clamps B..., BU..., LW..., SAS... and 85...

Long Trough for all U-clamps

Model No.	For cable-Ø	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
S LW 16	8 - 13	113408	7,41	100 pcs.
S LW 22	13 - 19	113507	9,27	100 pcs.
S LW 26	19 - 23	113606	10,52	100 pcs.
S LW 34	23 - 31	113705	13,00	100 pcs.
S LW 38	31 - 36	113804	14,24	100 pcs.
S LW 42	36 - 40	113903	15,48	100 pcs.
S LW 46	39 - 43	114009	16,73	100 pcs.
S LW 50	43 - 47	114108	17,97	50 pcs.
S LW 54	47 - 51	114207	19,21	50 pcs.
S LW 58	51 - 55	787609	20,45	50 pcs.
S LW 64	55 - 61	787708	22,32	50 pcs.
S LW 70	61 - 67	794508	24,18	50 pcs.
S LW 76	67 - 73	794607	26,04	50 pcs.
S LW 82	73 - 79	794706	27,91	50 pcs.

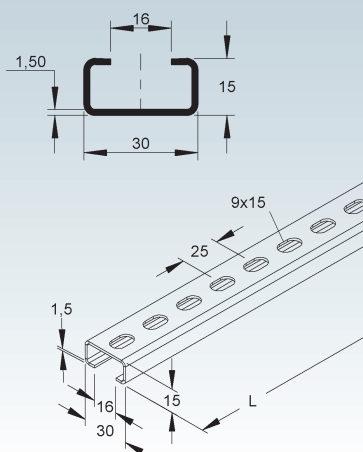
to increase the bearing surface



C-Profile Type 2970

C-profile, slot width 16 mm, acc. to DIN EN 60715, perforated

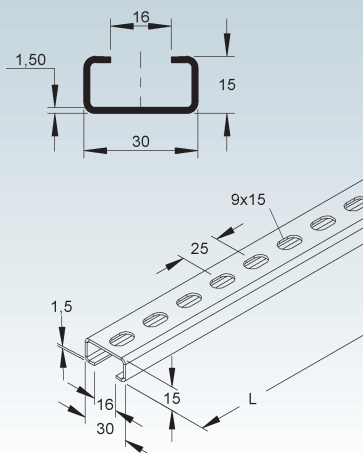
Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
S 2970/2 SL	2000	9x15	25	030309	69,94	10 x 2 m



C-Profile Type 2970

C-profile, slot width 16 mm, according to DIN EN 60715, with special perforation

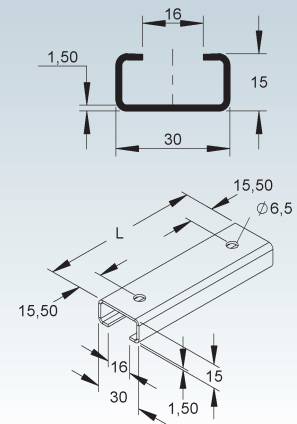
Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm	mm	mm			
E3 2970/2 E3L	2000	9x15	25	038107	70,38	10 x 2 m
E3 2970/6 E3L	6000	9x15	25	342204	70,38	10 x 6 m



C-Profile Type 2970

C-profile, slot width 16 mm, according to DIN EN 60715, with 2 end holes

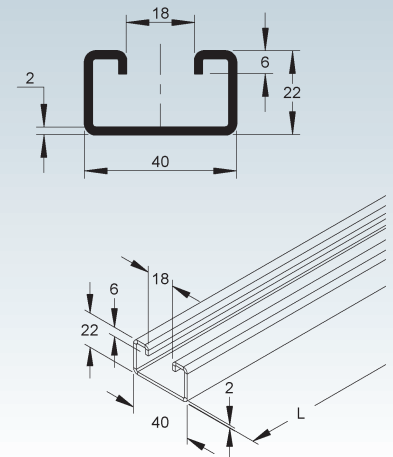
Model No.	Length L	Perforation	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm			
S 2970/100-2 SL	100	2xØ6,5	037841	7,47	100 pcs.
S 2970/200-2 SL	200	2xØ6,5	037308	15,02	50 pcs.
S 2970/300-2 SL	300	2xØ6,5	037605	22,56	50 pcs.
S 2970/400-2 SL	400	2xØ6,5	037209	30,11	50 pcs.
S 2970/500-2 SL	500	2xØ6,5	037704	37,66	25 pcs.



C-profile Type 2986

C-profile, slot width 18 mm, acc. to DIN EN 60715, unperforated

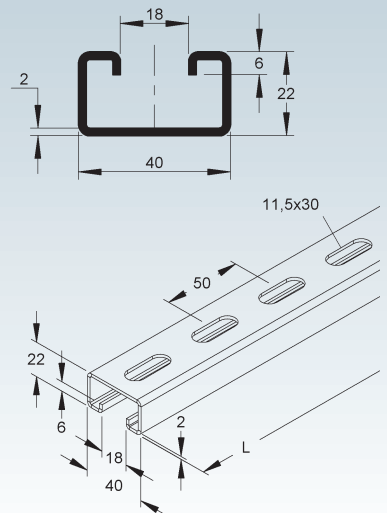
Model No.	Length L	Perforations for galvanisation, on both sides	EAN code	Weight in kg per 100 m	Smallest packaging unit
	mm				
S 2986/2 SO	2000	-	044009	159,01	5 x 2 m
F 2986/2 FO	2000	✓	043705	178,40	5 x 2 m



C-Profile Type 2986

C-profile, slot width 18 mm, acc. to DIN EN 60715, perforated

Model No.	Length L	Perforation	Hole Distance	EAN code	Weight in kg per 100 pcs./m	Smallest packaging unit
	mm	mm	mm			
S 2986/2 SL	2000	11,5x30	50	899722	149,07	5 x 2 m
S 2986/3 SL	3000	11,5x30	50	193158	149,07	5 x 3 m
S 2986/6 SL	6000	11,5x30	50	032259	149,07	5 x 6 m
F 2986/100 FL	100	11,5x30	50	873104	16,40	1 pc.
F 2986/200 FL	200	11,5x30	50	873128	32,79	1 pc.
F 2986/300 FL	300	11,5x30	50	873142	49,19	1 pc.
F 2986/400 FL	400	11,5x30	50	873166	65,59	1 pc.
F 2986/500 FL	500	11,5x30	50	873180	81,98	1 pc.
F 2986/600 FL	600	11,5x30	50	193134	98,38	1 pc.
F 2986/2 FL	2000	11,5x30	50	043750	163,97	5 x 2 m
F 2986/3 FL	3000	11,5x30	50	193165	163,97	2 x 3 m
F 2986/6 FL	6000	11,5x30	50	032204	163,97	6 m
E3 2986/3 E3L	3000	11,5x30	50	342228	150,02	5 x 3 m
E5 2986/3 E5L	3000	11,5x30	50	728923	151,53	5 x 3 m
E5 2986/6 E5L	6000	11,5x30	50	728954	151,54	5 x 6 m



4 MLAR - INSTALLATION SYSTEMS

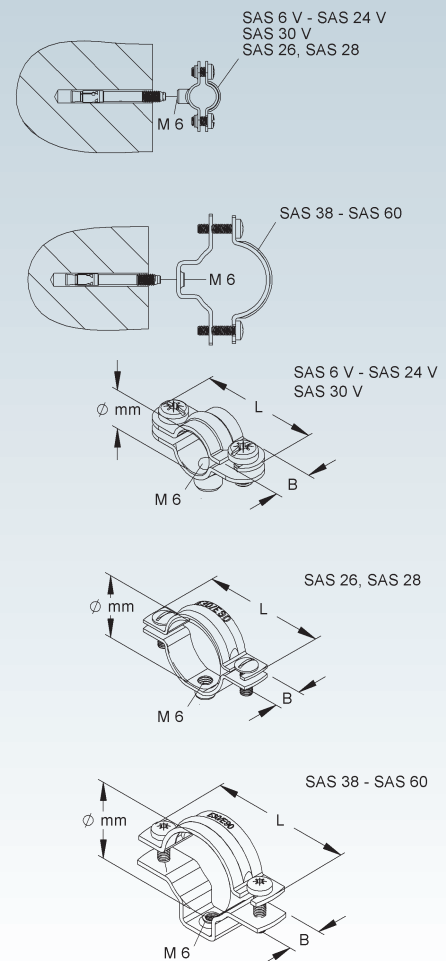
4.4 Clamps B..., BU..., LW..., SAS... and 85...

Screw Distance Clamp

with female connection thread M6

Model No.	Width B	Length L	For cable-Ø	for metric pipes	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
V SAS 6 V	12	31	5 - 6	-	733002	0,92	50 pcs.
V SAS 8 V	12	33	7,5 - 10	-	733101	0,95	50 pcs.
V SAS 10 V	12	35	10 - 11	-	733200	1,02	50 pcs.
V SAS 12 V	12	37	11 - 13	12	733309	1,20	50 pcs.
V SAS 14 V	12	39	13 - 15	-	733408	1,25	50 pcs.
V SAS 16 V	12	44	15 - 17	16	733507	1,32	50 pcs.
V SAS 18 V	12	45	17 - 19	-	733606	1,40	50 pcs.
V SAS 20 V	12	45	19 - 21	20	733705	1,46	50 pcs.
V SAS 22 V	12	47	21 - 23	-	733804	1,55	50 pcs.
V SAS 24 V	12	49	23 - 25	25	733903	1,59	50 pcs.
V SAS 26 V	12	54	25 - 27	25	734009	1,64	50 pcs.
G SAS 28	12	56	27 - 29	-	734108	1,75	100 pcs.
V SAS 30 V	12	58	28 - 30	-	734207	1,82	50 pcs.
G SAS 38	16	69	29 - 38	32	734603	5,13	25 pcs.
G SAS 47	16	79,5	38 - 47	40	734948	6,01	20 pcs.
G SAS 55	18	89	47 - 55	50	735303	7,44	20 pcs.
G SAS 60	18	100	55 - 63	63	735501	8,31	20 pcs.

for cables and electrical installation conduits acc. to DIN EN 61386-21



Conduit- and Cable Distance Clamp

with female connection thread M6

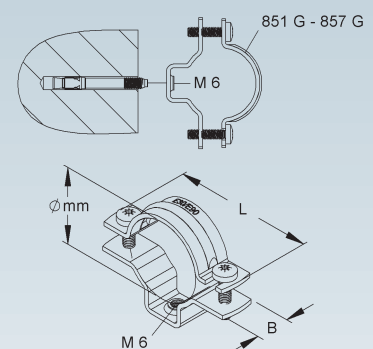
Model No.	Width B	Length L	For cable-Ø	for metric pipes	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
S 851 G	14	49,5	15 - 19	16	012800	2,40	50 pcs.
S 852 G	14	53	19 - 24	20	013104	2,62	50 pcs.
S 853 G	14	59	24 - 29	25	013203	4,07	50 pcs.
S 854 G	16	69	29 - 38	32	013302	5,13	25 pcs.
S 855 G	16	79,5	38 - 47	40	013401	6,01	20 pcs.
S 856 G	18	89	47 - 55	50	013500	7,49	20 pcs.
S 857 G	18	100	55 - 63	63	013609	8,31	20 pcs.
F 851 G F	14	49,5	15 - 19	16	923304	2,52	50 pcs.
F 852 G F	14	53	19 - 24	20	923328	2,75	50 pcs.
F 853 G F	14	59	24 - 29	25	923342	4,28	50 pcs.
F 854 G F	16	69	29 - 38	32	923366	5,39	25 pcs.
F 855 G F	16	79,5	38 - 47	40	923380	6,32	20 pcs.
F 856 G F	18	89	47 - 55	50	923403	7,88	20 pcs.
F 857 G F	18	100	55 - 63	63	923427	8,74	20 pcs.
E5 851 G E5	14	49,5	15 - 19	16	923441	2,44	50 pcs.
E5 852 G E5	14	53	19 - 24	20	923465	2,66	50 pcs.
E5 853 G E5	14	59	24 - 29	25	923489	4,14	50 pcs.
E5 854 G E5	16	69	29 - 38	32	923502	5,21	25 pcs.
E5 855 G E5	16	79,5	38 - 47	40	923526	6,12	20 pcs.
E5 856 G E5	18	89	47 - 55	50	923540	7,62	20 pcs.
E5 857 G E5	18	100	55 - 63	63	923564	8,45	20 pcs.

for screwing onto screw anchors up to 8 mm thread length

for cables and electrical installation conduits acc. to DIN EN 61386-21

In version S, the screws are galvanised.

In version F, the screws are made of stainless steel E3.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E _____ gemäß DIN 4102-12			
Errichtungsdatum: _____			
Errichter der Anlage: _____			
Prüfzeugnis-Nr.: _____			
Prüfzeugnis Inhaber: _____			
		ACHTUNG! Trasse nur für elektrischen Funktionserhalt 	



4 MLAR - INSTALLATION SYSTEMS

4.5 Cable Protection Duct LLK...

The LLK... cable protection duct installation system is a rational way of discreetly embedding what is required by

building regulations in the interior design environment.

Support span $a \leq 0,5 \text{ m}$
Cable load $q \leq 0,3 \text{ resp. } 3 \text{ kg/m}$

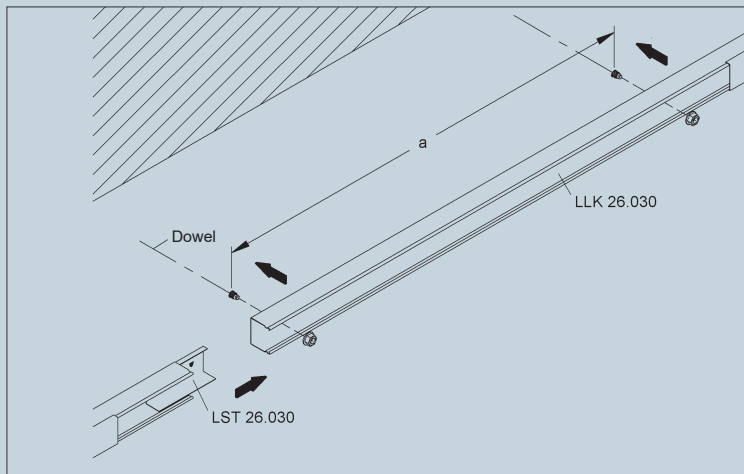
With this cable routing system for horizontal cable laying on walls and ceilings above fire protection ceilings in EI 30 / EI 90 (F 30 / F 90) according to MLAR, cable protection ducts are available in 2 sizes. Depending on the amount of cable to be laid, the cable protection duct LLK 26.030 can be used with a fastening spacing of $a \leq 500 \text{ mm}$ and a cable dead weight of $q \leq 0.3 \text{ kg/m}$ or the cable protection duct LLK 60.100 with a fastening spacing of $a \leq 500 \text{ mm}$ and a cable dead weight of $q \leq 3 \text{ kg/m}$.

For cable retention in the cable protection duct LLK 60.100, cable support clamps LHS 60.100 are available, which are mounted offset from each other at a distance of 500 mm.

Continuous electrical conductivity can be ensured with the system-related accessories LST 26.030 or LST 60.

Fastening is done with suitable and tested fasteners $\geq \text{M6}$.

Wall and ceiling mounting LLK 26.030



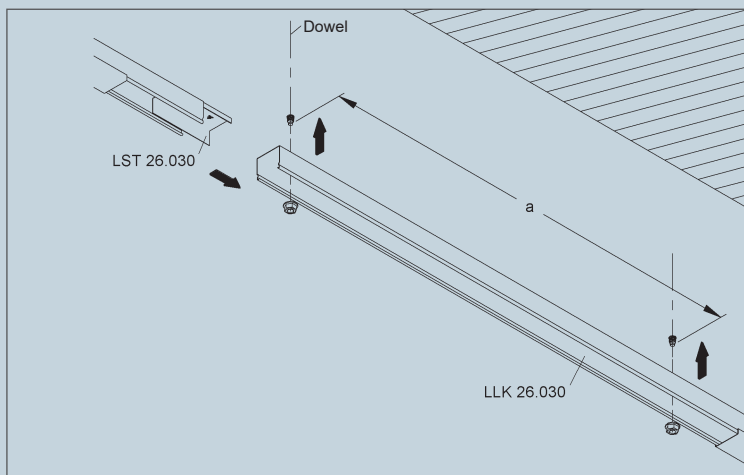
Wall mounting

cable protection duct LLK 26.030

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq$ M6 per 500 mm

Dead weight of cable: $q \leq 0.3$ kg/m



Ceiling mounting

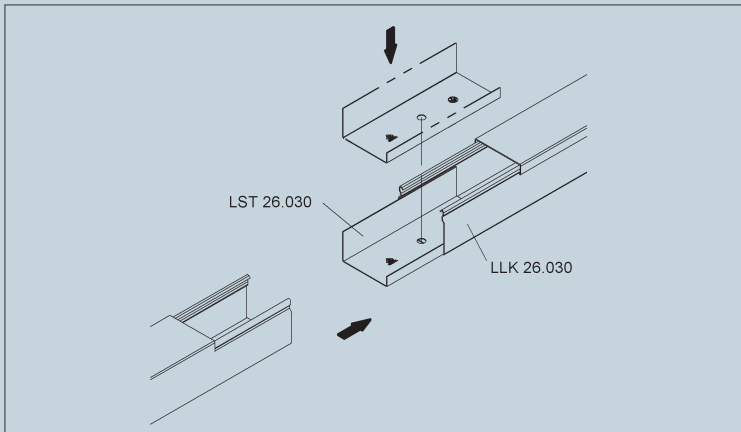
cable protection duct LLK 26.030

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq$ M6 per 500 mm

Dead weight of cable: $q \leq 0.3$ kg/m

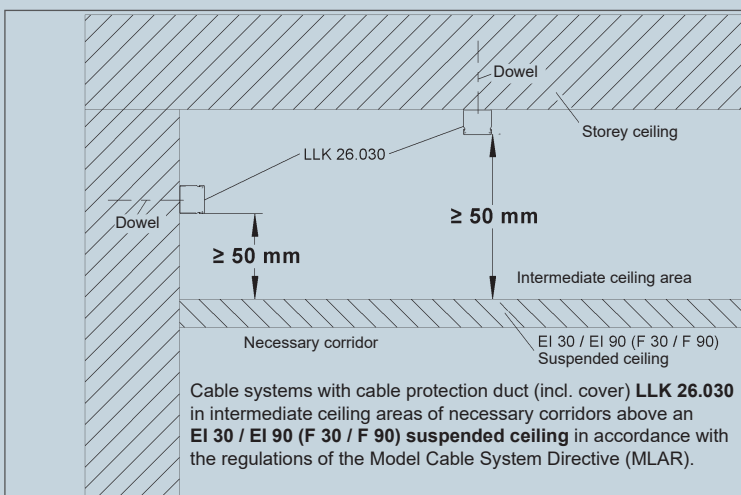
Suitable dowels can be found in chapter "8 Fastening Elements". ➡ 256



Installation

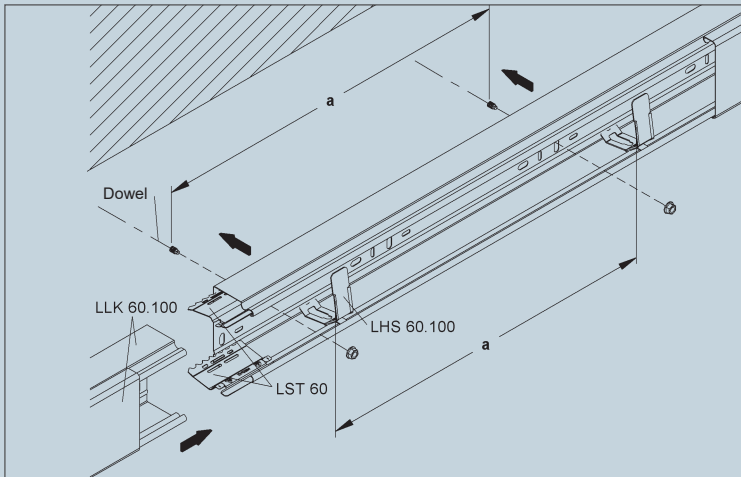
splice plate LST 26.030

The cable protection duct must be included in the equipotential bonding. The electrical and mechanical connection is made via the boltless splice plate LST 26.030 and, in the case of the cover, by snapping it on.



Suitable dowels can be found in chapter "8 Fastening Elements". ➡ 256

Wall and ceiling mounting LLK 60.100



Wall mounting

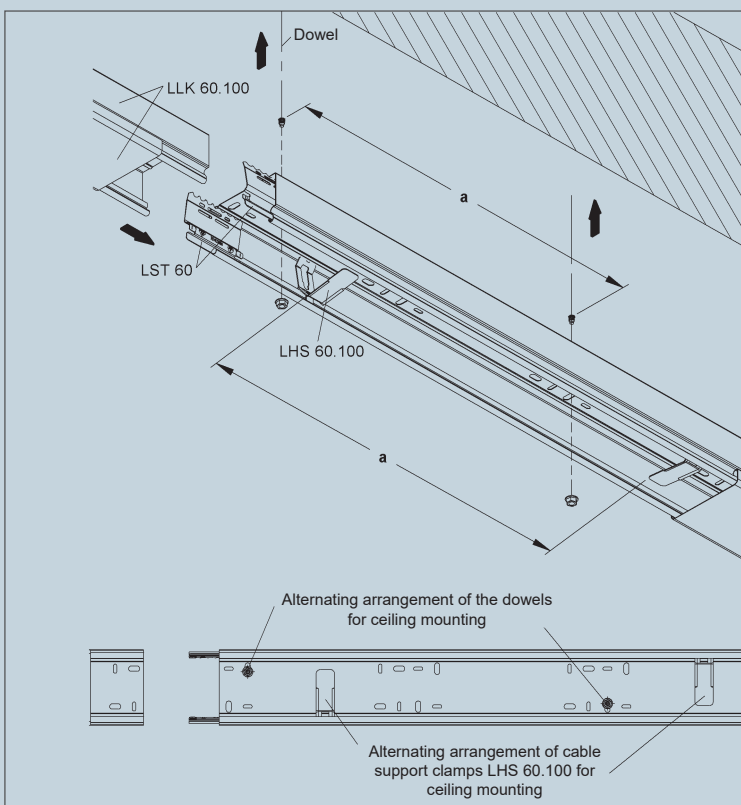
cable protection duct LLK 60.100

Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq M6$ per 500 mm

Dead weight of cable: $q \leq 3$ kg/m

Cable support clamp: 1 piece per 500 mm according to illustration



Ceiling mounting

cable protection duct LLK 60.100

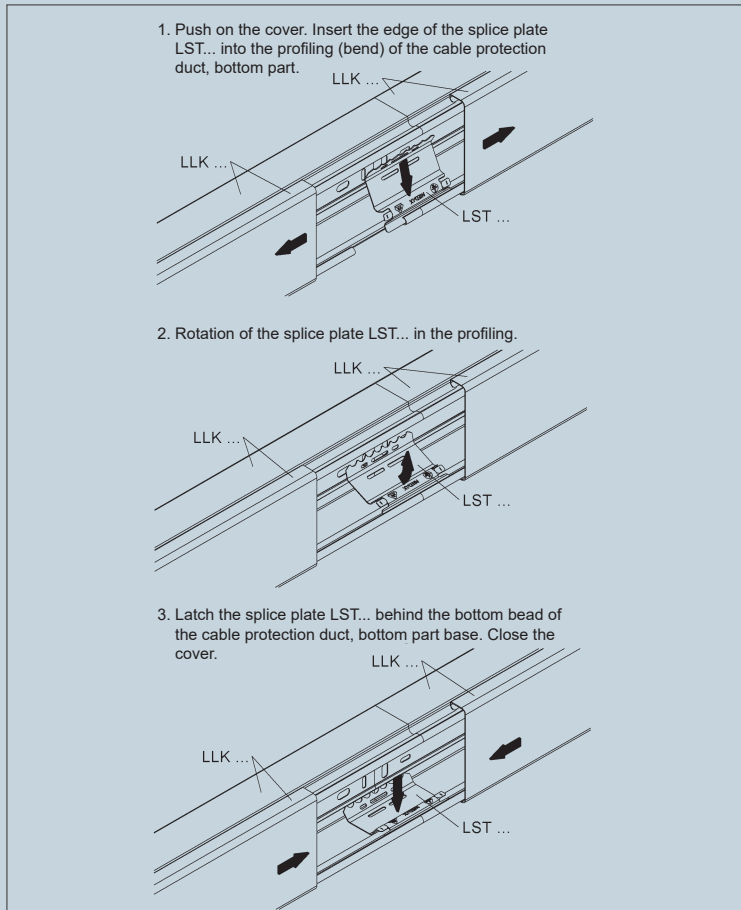
Fastening spacing: $a \leq 500$ mm

Fastening: 1 anchor bolt $\geq M6$ per 500 mm alternately according to illustration

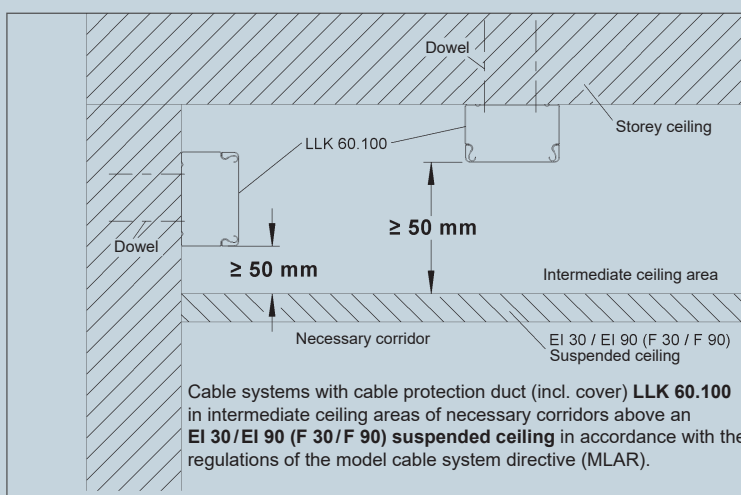
Dead weight of cable: $q \leq 3$ kg/m

Cable support clamp: 1 piece per 500 mm alternately against each other according to illustration

Suitable dowels can be found in chapter "8 Fastening Elements". ➡ 256



Installation
splice plate LST...



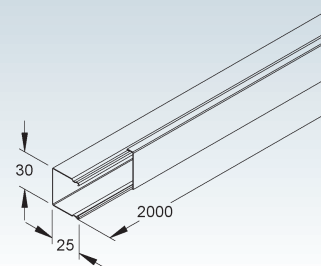
Suitable dowels can be found in chapter “8 Fastening Elements”. ➔ 256

Mini-Cable Protection Duct

with perforated bottom, incl. cover

Model No.	RAL colour	Height H	Width B	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm			
S LLK 26.030	—	26	30	506903	50,02	18 x 2 m

26

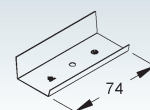


Splice Plate

Model No.	Length L	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
MS LST 26.030	74	516407	1,30	20 pcs.

connects the trunking bases electrically and mechanically in one operation

26

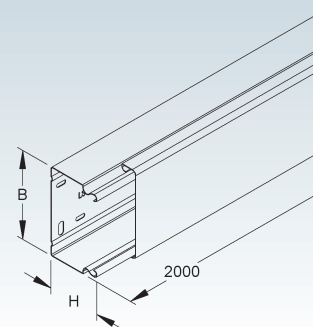


Cable Protection Duct

with perforated bottom, incl. cover

Model No.	RAL colour	Height H	Width B	Centered hole distance A	EAN code	Weight in kg per 100 m	Smallest packaging unit
		mm	mm	mm			
S LLK 60.100	—	60	100	50	509201	235,04	4 x 2 m

60



Splice Plate

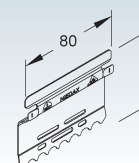
with flat plug 6,3 mm

Model No.	Height H	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
S LST 60	60	516605	2,71	20 pcs.

connects the trunking bases electrically and mechanically in one operation

Requirement: 2 pieces per joint

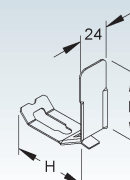
60



Cable Support Clamp

Model No.	Height H	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm			
E2 LHS 60.100 E2	60	517206	2,03	20 pcs.

60



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

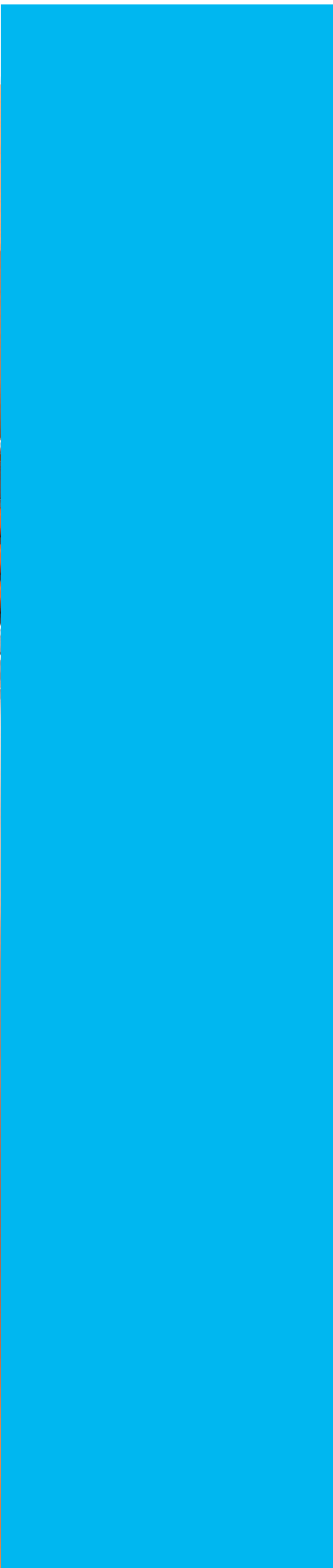
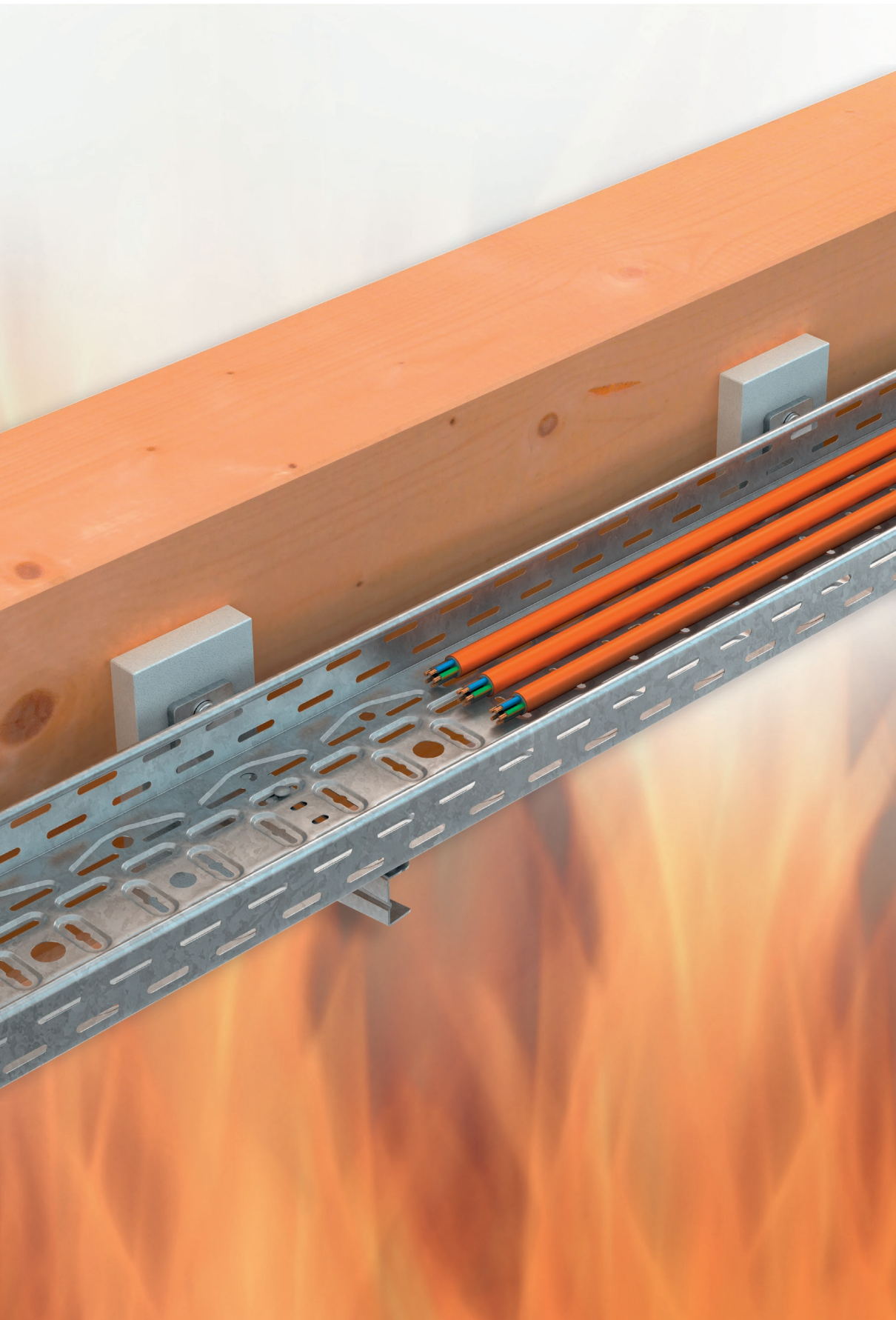
for marking functional maintenance cable trays

		Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com	
Kabelanlage E _____ gemäß DIN 4102-12					
Errichtungsdatum: _____					
Errichter der Anlage: _____					
Prüfzeugnis-Nr.: _____					
Prüfzeugnis Inhaber: _____					
ACHTUNG! Trasse nur für elektrischen Funktionserhalt					

Suitable dowels can be found in chapter "8 Fastening Elements".

➡ 256

5 MOUNTING OF CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS,
TO LOAD-BEARING TIMBER COMPONENTS



5 MOUNTING OF CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS TO LOAD-BEARING TIMBER COMPONENTS

Wood as a building material is experiencing a renaissance in modern architecture worldwide.

Wood:

- impresses with its durability, environmental friendliness and sustainability
- is a building material with a future
- is a renewable raw material that is well suited as a building material
- in the event of fire, its mechanical properties withstand the same static dimensioning far longer than unprotected steel
- has the effect of being in harmony with nature and conveys a sense of well-being

Wood has a low density and at the same time a high load-bearing capacity, and is also easy to process.

The quality of timber is regulated by relevant standards. In terms of load-bearing capacity, wood offers advantages in terms of weight and chemical resistance compared to steel and prestressed concrete structures at a similar price.

The strength of wood, unlike that of steel, is not dependent on temperature and in the event of fire a protective layer of carbon forms, which slows down the burning and maintains the load-bearing capacity for longer than in the case of an unprotected statically identically designed steel beam.

This is an aspect that must be taken into account when installing fire protection measures that are mandatory under building law.

What must be considered when installing cable systems with circuit integrity maintenance in accordance with DIN 4102 Part 12 on load-bearing timber components?

Basic requirements for the individual components:

- Wooden components
- Cable system
- Fire protection plates
- Fasteners

The components made of solid or solid wood in unprotected design are load-bearing room-enclosing or non-room-enclosing components that, in addition to the mathematical verification for the service condition, must also be designed for fire exposure for a fire resistance duration of 30 or 60 minutes (F30 or F60).

This structural fire design is based on Eurocode 5 (DIN EN 1995-1-2).

Cable systems with circuit integrity maintenance according to DIN 4102-12 are used to supply power to fire protection equipment (fire alarm, escape route lighting, smoke extractors, etc.) for 30 or 60 minutes (E30, E 60).

The required proof of usability according to VV TB (Administrative Regulation on Technical Building Regulations) is the German classification report for electric cable systems with circuit integrity maintenance (abP).

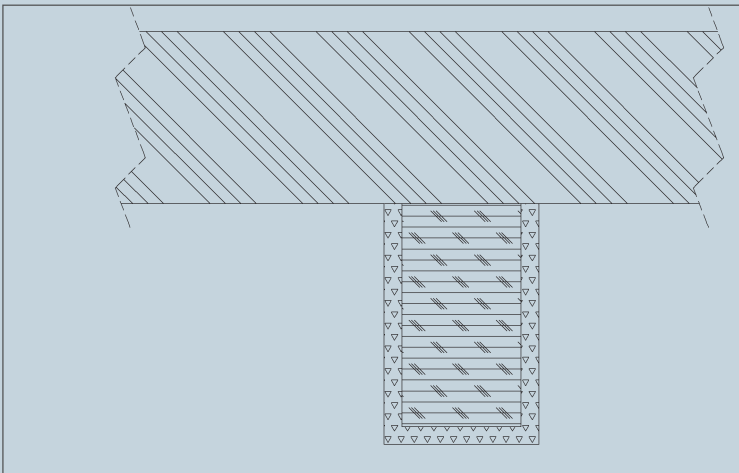
Fire protection plates must comply with building material class A according to EN 13501-1 (classification of building products and types of construction for their fire behaviour) and have a fire resistance category F30 or F60 according to EN 13501-2 (classification with the results from the fire resistance tests).

The required proof of usability according to VV TB is the ETA approval.

Screws as wood fasteners with the corresponding length, nominal diameter and minimum head diameter must be approved by the building authorities.

The required proof of usability according to VV TB is the ETA approval.

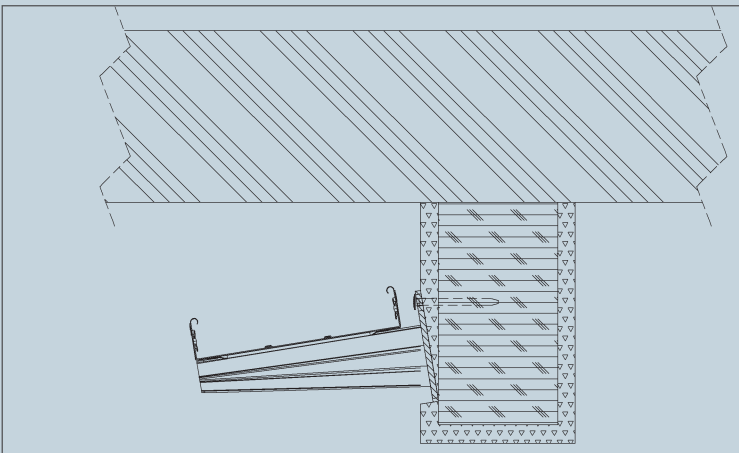
Structural fire design of the timber component according to Eurocode 5 (DIN EN 1995-1-2)



Depending on the type of wood and its density, Eurocode 5 specifies a burning rate of 0.55 mm/min or 0.8 mm/min.

This means that a 60-minute fire exposure of a timber beam with a burning rate of 0.8 mm/min, a 48 mm thick layer of charcoal is formed.

Thus, the thickness of the beam is reduced by 96 mm in the case of three-sided flaming.

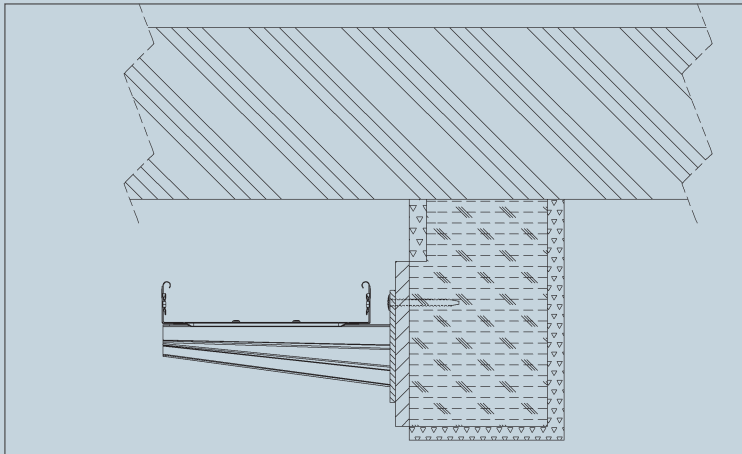


The protective carbon layer cannot absorb any acting forces, so that the circuit integrity maintenance installation system would "dig in".

The reduction of the protective carbon layer leads to a deeper burn around the installation system, which may have a negative influence on the load-bearing capacity of the wooden beam.

Furthermore, the "tilting" of the cable system would be added to the deformation proven in fire tests. This influence on the fire resistance categories cannot be assessed.

5 MOUNTING OF CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS TO LOAD-BEARING TIMBER COMPONENTS



If a fire protection plate of building material class A according to EN 13501-1 with a fire resistance category of F30 or F60 is installed between the circuit integrity maintenance installation system and the wooden beam, burning of the wooden beam is avoided in this area and a negative influence on the load-bearing capacity of the wooden beam and the circuit integrity maintenance installation system is prevented.

The fire protection plates must lie on the full surface. The size is at least 60 mm all around the fixing screw. The required panel thickness is 20 mm for F30 and 30 mm for F60. In this way, the occurring forces can be absorbed without any problems and without negatively affecting the load-bearing capacity of the wooden support or the classifications of the cable system.

For fastening the circuit integrity maintenance installation system and the fire protection plate, screws approved by the building authorities (timber fasteners) with the appropriate length, nominal diameter and minimum head diameter must be used.

The length of the wood construction screw results from the sum of

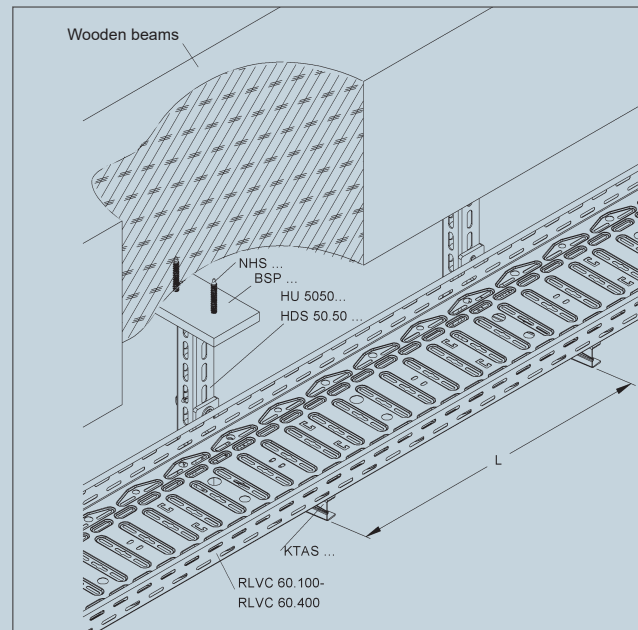
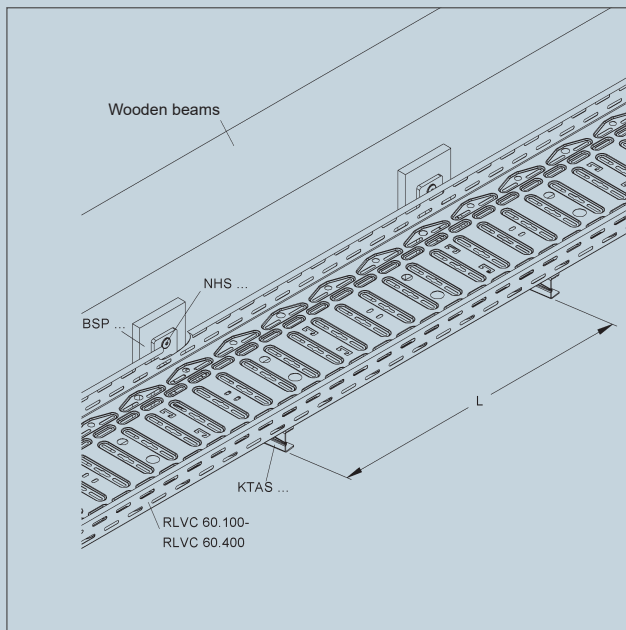
- required screw-in depth according to ETA approval
- thickness of the burn-off layer
- thickness of the fire protection plate
- thickness of the bracket/hanging support

The diameter results from the max. permissible load according to ETA approval and compliance with the max. permissible tensile stress of 9 N/mm² and max. permissible shear stress of 15 N/mm².

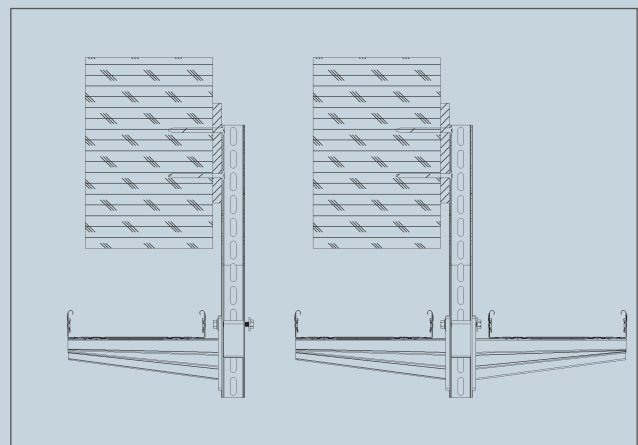
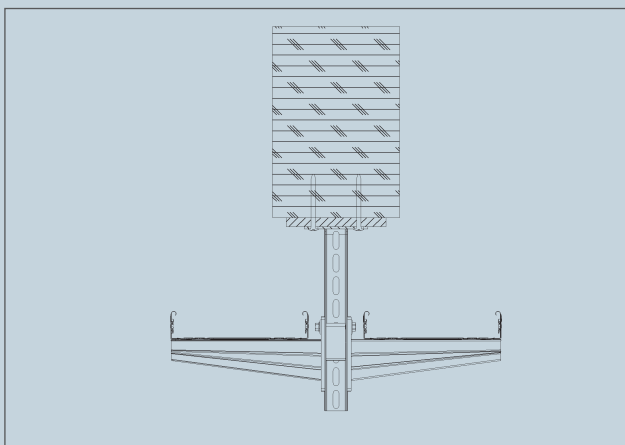
Practical applications

Lateral and underside fastening of cable systems with circuit integrity maintenance without additional threaded rod (cable trays, wire mesh cable trays and cable ladders)

In these applications, a fire protection plate is required in any case.



Alternatively, the MTC 54... and KL 60... wire mesh cable trays can be used.



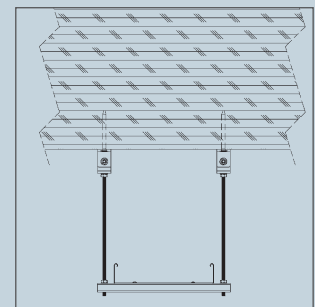
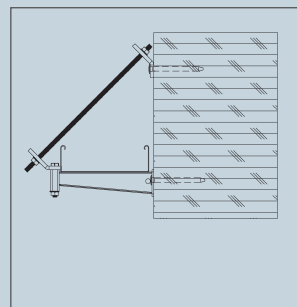
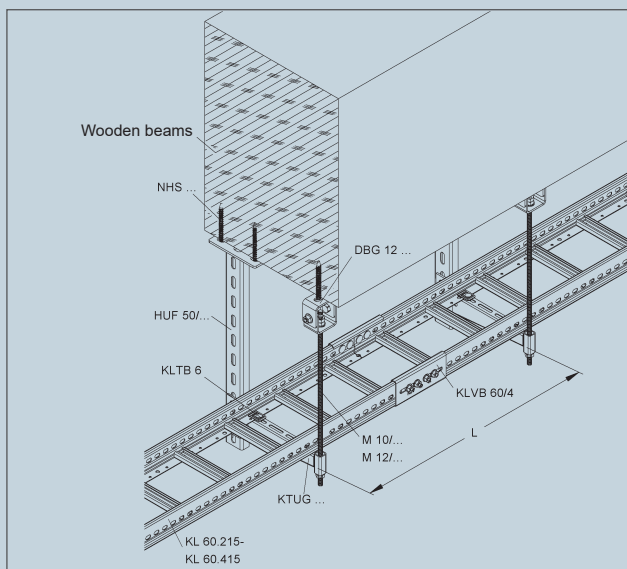
The corresponding products for these installation options can be found in the chapters:

- 1.1 KFO Cable Tray RLVC... ➔ 6
- 1.2 KFO Wire Mesh Cable Tray MTC... ➔ 28
- 1.3 KFO Cable Ladder KL... ➔ 44
- 2.2 KFO Cable Ladder KL... E5 and Suspensions in E5 ➔ 88

The matching fire protection plates and fastening screws can be found on the following pages.

Lateral and underside fastening of so-called standard support systems (cable trays and cable ladders with additional threaded rod)

No fire protection plates are required for underside installations, as only tensile forces act here and the protective carbon layer is not mechanically stressed.

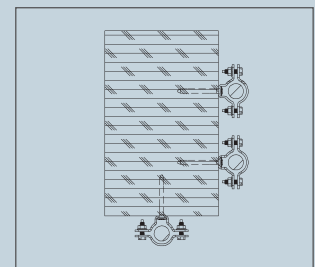
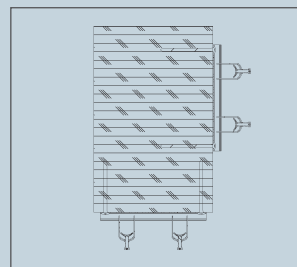
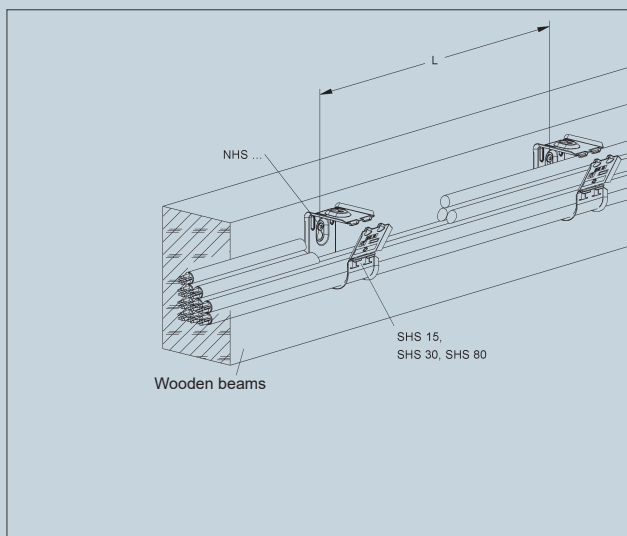


The corresponding products for these installation options can be found in the chapters:

- 3.3 Cable Ladder KL... ➔ 144
- 3.4 Cable Tray RS... ➔ 164

Lateral and underside fastening of installation systems such as cable U-clamps with C-profile rails, single clamps and collective holders

Due to the low force effect on the protective carbon layer, the fire protection plate can also be dispensed with here.



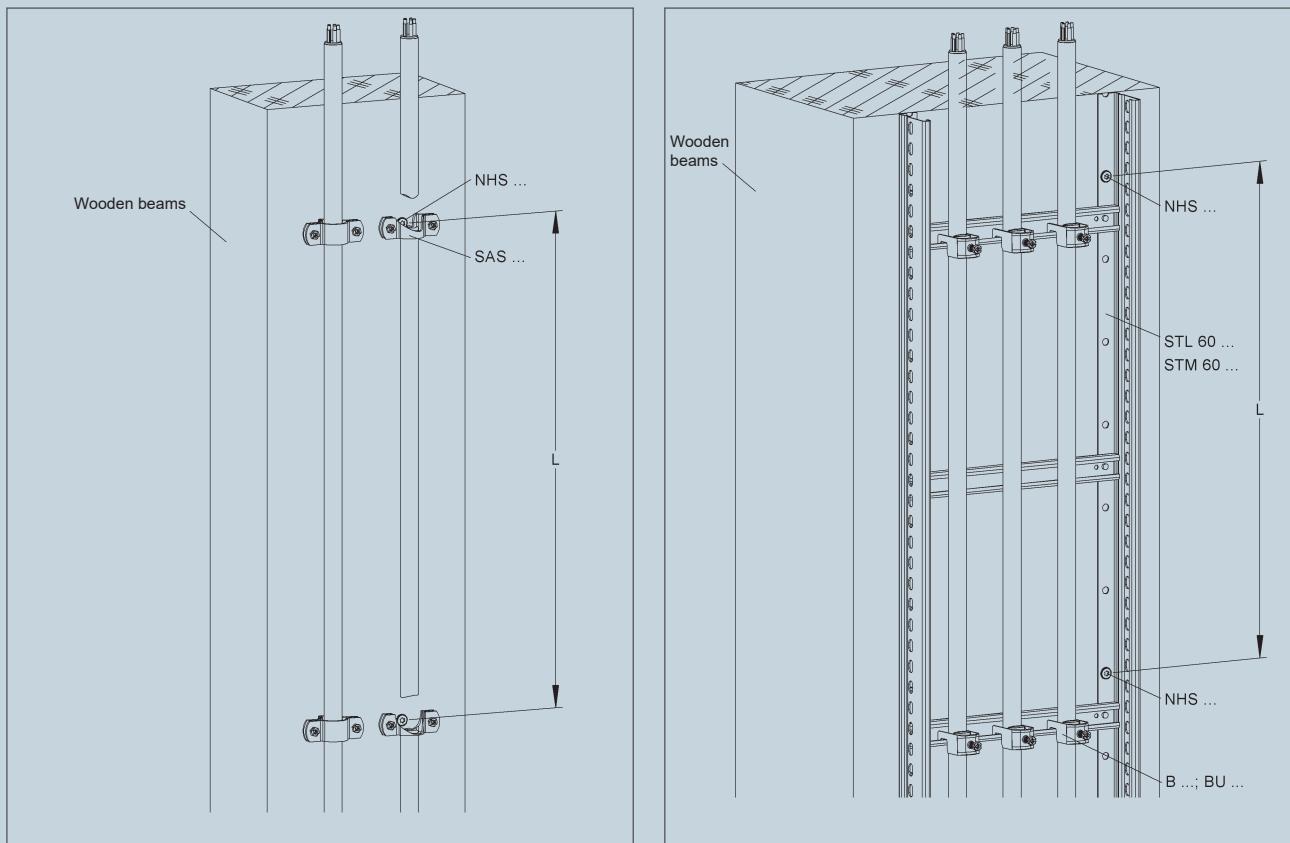
The corresponding products for these installation options can be found in the chapters:

- 1.4 SHS... Collective Holders ➔ 60
- 4.3 SHS... Collective Holders ➔ 208
- 3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW... ➔ 132

The matching fire protection plates and fixing screws can be found on the following pages.

Lateral fastening of vertically running installation systems (U-clamps with C-profile rail, single clamps and vertical cable ladders)

Due to the low force effect on the protective carbon layer, the fire protection plate can also be dispensed with here.



Alternatively, C-profile rails 2970... or 2986... and cable U-clamps B... or BU... can be used.

The corresponding products for these installation options can be found in the chapters:

- 3.1 STL..., STM... and STIC... Vertical Cable Ladders ➡ 120
- 3.2 Clamps SAS..., 85... as well as B... and BU... with/without Long Trough LW... ➡ 132

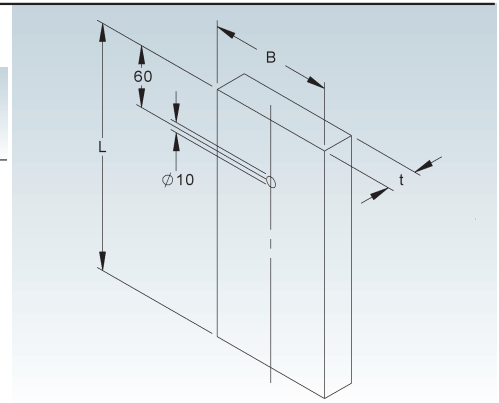
The matching fire protection plates and fixing screws can be found on the following pages.

5 MOUNTING OF CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS TO LOAD-BEARING TIMBER COMPONENTS

Fire Protection Plate

Approval no. ETA-11/0458, building material class A1, with pre-drilled mounting hole $\varnothing$ 10 mm

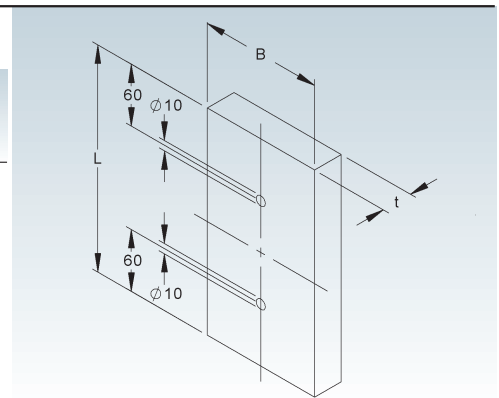
Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm			
BSP 120.120.20	120	120	20	192366	14,32	1 pc.
BSP 120.120.30	120	120	30	192373	21,48	1 pc.
BSP 195.120.20	195	120	20	192380	23,32	1 pc.
BSP 195.120.30	195	120	30	192397	34,98	1 pc.
BSP 240.120.20	240	120	20	192434	28,72	1 pc.
BSP 240.120.30	240	120	30	192441	43,08	1 pc.



Fire Protection Plate

Approval no. ETA-11/0458, building material class A1, with two pre-drilled mounting holes $\varnothing$ 10 mm

Model No.	Height H	Width B	Material thickness (t)	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm			
BSP 220.120.20	220	120	20	192410	26,24	1 pc.
BSP 220.120.30	220	120	30	192427	39,36	1 pc.



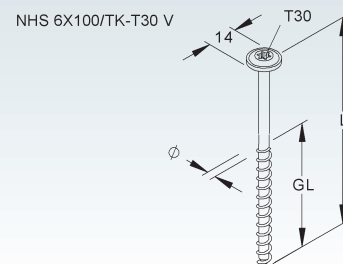
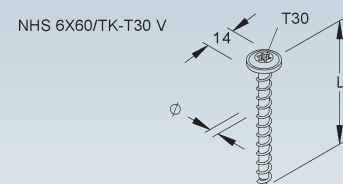
Wood Screw

Approval no. ETA-19/0553, with plate head $\varnothing$ 14 and torx drive T30

Model No.	Dia- meter	Length L	Thread length GL	Actuator size	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
NHS 6X60/TK-T30 V	6	60	56	T30	192359	0,92	100 pcs.
NHS 6X100/TK-T30 V	6	100	60	T30	192342	1,38	100 pcs.

for fastening Niedax cable support systems for cable systems with circuit integrity maintenance to load-bearing timber components of fire resistance classes F30 or F60 according to DIN 4102 Part 12

Further details can be found in the above-mentioned ETA approval.



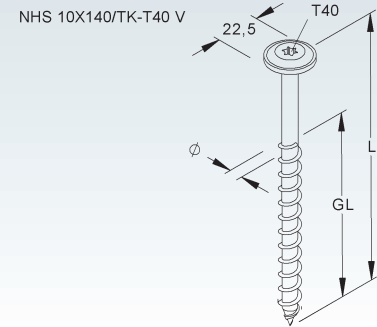
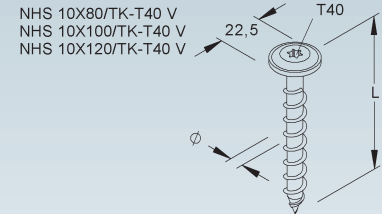
Wood Screw

Approval no. ETA-19/0553, with plate head Ø 22,5 and torx drive T40

	Model No.	Dia- meter	Length L	Thread length GL	Actuator size	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm				
✓	NHS 10X80/TK-T40 V	10	80	73	T40	192335	3,36	50 pcs.
✓	NHS 10X100/TK-T40 V	10	100	93	T40	192298	3,98	50 pcs.
✓	NHS 10X120/TK-T40 V	10	120	100	T40	202621	4,55	50 pcs.
✓	NHS 10X140/TK-T40 V	10	140	84	T40	192328	5,15	50 pcs.

for fastening Niedax cable support systems for cable systems with circuit integrity maintenance to load-bearing timber components of fire resistance classes F30 or F60 according to DIN 4102 Part 12

Further details can be found in the above-mentioned ETA approval.



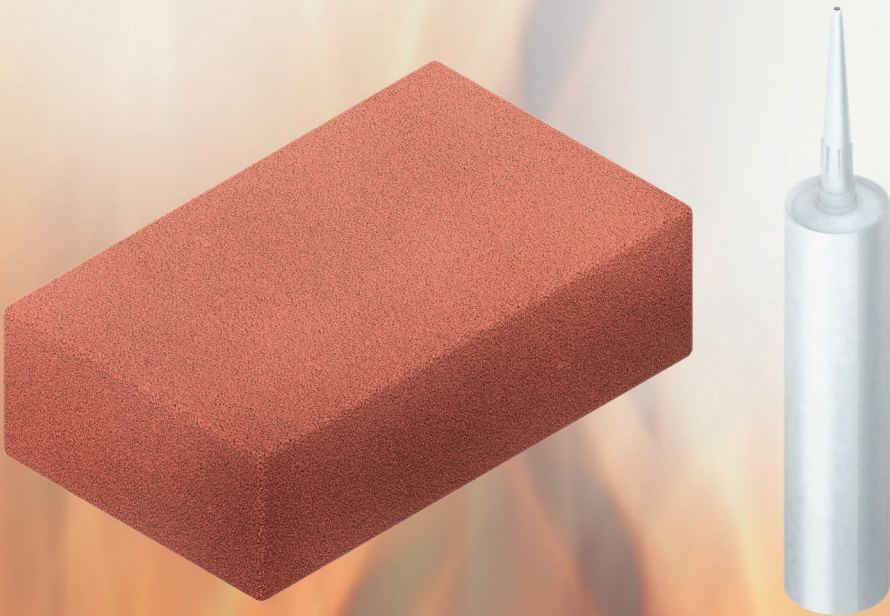
Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

 Niedax GmbH & Co. KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com
Kabelanlage E _____ gemäß DIN 4102-12		
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		
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6 CABLE BULKHEADS

Fire protection blocks BSB 90 and fire protection plugs BSS 90 are room-sealing components that prevent fire propagation and smoke transmission in the transition between two fire compartments.

Blocks and plugs are made of a permanently elastic, closed-pored, insulation-forming foam material of fire resistance category EI 90 (S 90).

Fire protection blocks BSB 90 and fire protection plugs BSS 90 can be used to create passages for cables and pipes in walls and ceilings.

For small openings, the fire protection compound BSM 90 can be used.

Combination penetration seals with fire protection blocks BSB 90 or fire protection plugs BSS 90 may be installed in masonry, concrete or reinforced concrete, aerated concrete and lightweight partition walls of stud construction (steel substructure) and planking on both sides made of fire protection plates as well as in ceilings made of concrete or reinforced concrete or aerated concrete of fire resistance duration EI 90 (F 90).

The following components are permitted to be passed through:

- electrical cables and lines of all types (including optical fibres) with the exception of so-called waveguide cables
- cable bundles
- cable support structures made of steel, aluminium or plastic
- electrical installation pipes made of plastic
- and many more

The cable penetration seal with fire protection compound BSM 90 may be installed in masonry, concrete or reinforced concrete, aerated concrete and lightweight partition walls in stud construction (steel substructure) and planking on both sides made of fire protection plates as well as in ceilings made of concrete or reinforced concrete or aerated concrete of fire resistance duration EI 90 (F 90).

In case of penetrations sealed with fire protection compound BSM 90, electrical cables and lines of all types (including fibre optic cables) may be installed with the exception of so-called waveguide cables with an outer diameter of max. 18 mm.

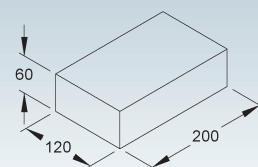
For further details and regulations, please refer to the german classification report Z-19.53-2529, Z-19.53-2470 or Z-19.53-2407.

Fire Protection Block

Fire resistance class S 90 acc. to DIN 4102-9, approval no. Z-19.53-2529

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
BSB 90	466528	42,00	10 pcs.

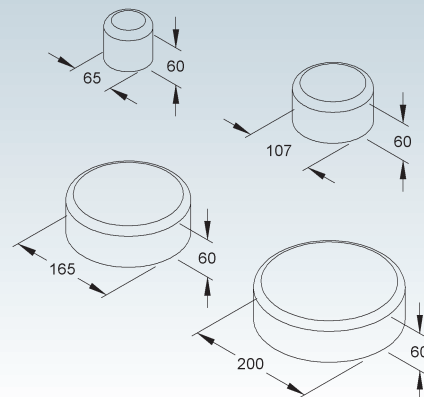
For further information and regulations, please refer to the "General construction type approval Z-19.53-2529".

**Fire Protection Plugs**

Fire resistance class S 90 acc. to DIN 4102-9, approval no. Z-19.53-2470

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
BSS 90/50	466535	6,00	20 pcs.
BSS 90/100	466542	17,00	20 pcs.
BSS 90/150	466559	38,00	10 pcs.
BSS 90/200	466566	56,00	10 pcs.

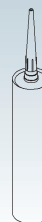
For further information and regulations, please refer to the "General construction type approval Z-19.53-2470".

**Fire Protection Compound**

Fire resistance class S 90 acc. to DIN 4102-9, approval no. Z-19.53-2407

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
BSM 90	466573	46,00	1 pc.

For further information and regulations, please refer to the "General construction type approval Z-19.53-2407".

**Fire Protection Wall Sign**

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
BSW 90	466580	3,00	1 pc.

for marking the cable penetration seal in accordance with the approval requirements

Hersteller der Produkte: ZAPP-ZIMMERMANN Innovative Brandschutzsysteme ZAPP-ZIMMERMANN GmbH Marconistr. 7-9 • 50759 Köln Tel. +49 221 97061-0 Fax +49 221 97061-929 www.z-z.de • info@z-z.de		Schott-ID: Erstellt am:
Hersteller der Schottung: 		
ZZ-Brandschottsysteme Kabelabschottung: S30 ☐ S60 ☐ S90 ☐ S120 ☐ Name des Abschottungssystems: _____ Rohrabschottung: R30 ☐ R60 ☐ R90 ☐ R120 ☐ nach Zulassungsnummer: _____		

Identification Sign for Functional Maintenance Installation System

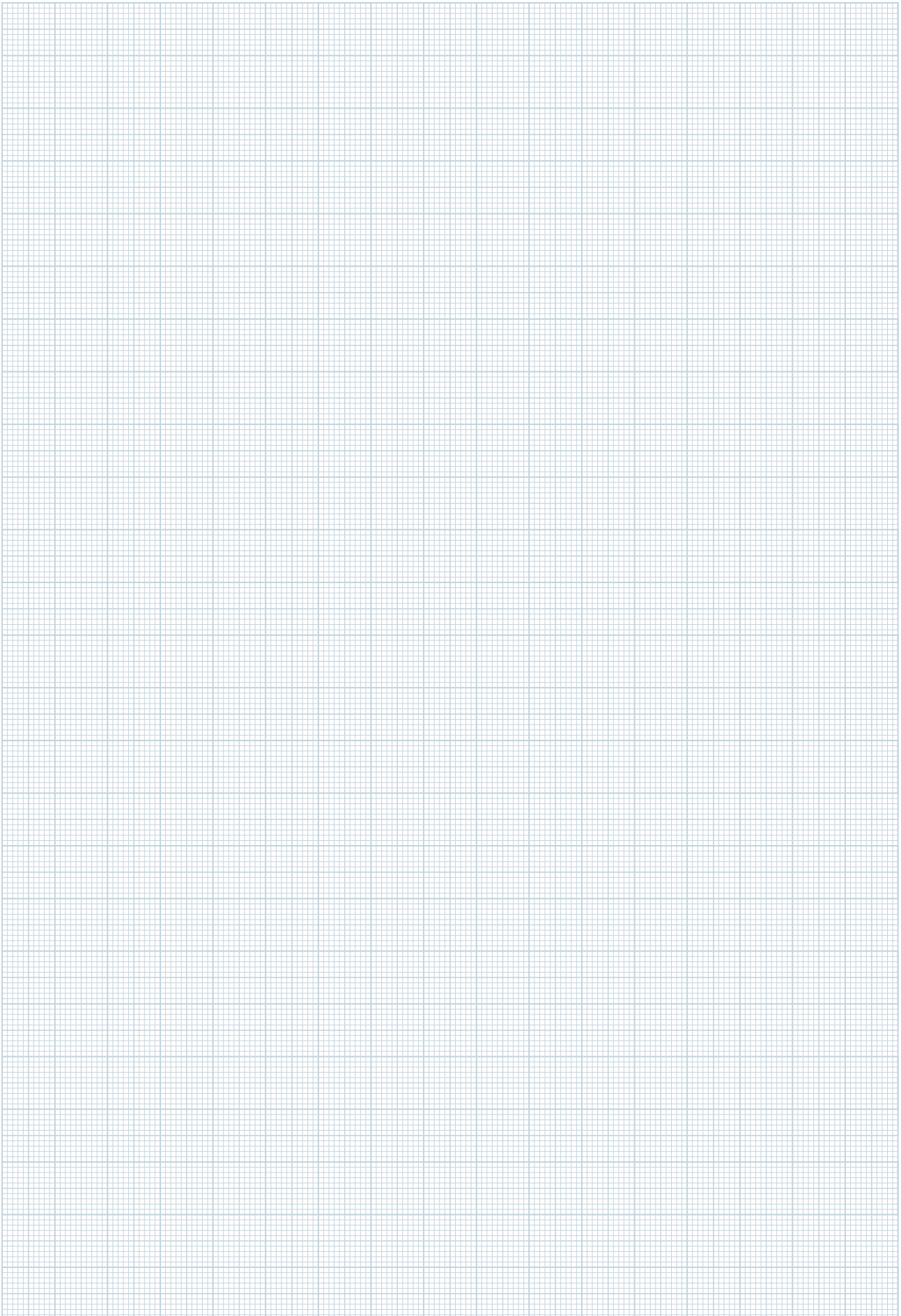
5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

NIEDAX GROUP Niedax GmbH & Co KG Asbacher Straße 141 D-53545 Linz am Rhein Tel: +49 (0) 2644/5606-0 www.niedax.com		ACHTUNG! Trasse nur für elektrischen Funktionserhalt
Kabelanlage E gemäß DIN 4102-12		
Errichtungsdatum: _____		
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Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		

NOTES





7 STRAIN RELIEF FOR CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS (EFFECTIVE SUPPORT MEASURE)

With the circuit integrity maintenance strain relief ZF ... (effective support measure), we offer the solution for vertical cable routing in cable systems with circuit integrity maintenance in accordance with DIN 4102-12 and the effective support measure required by building regulations every 3500 mm.

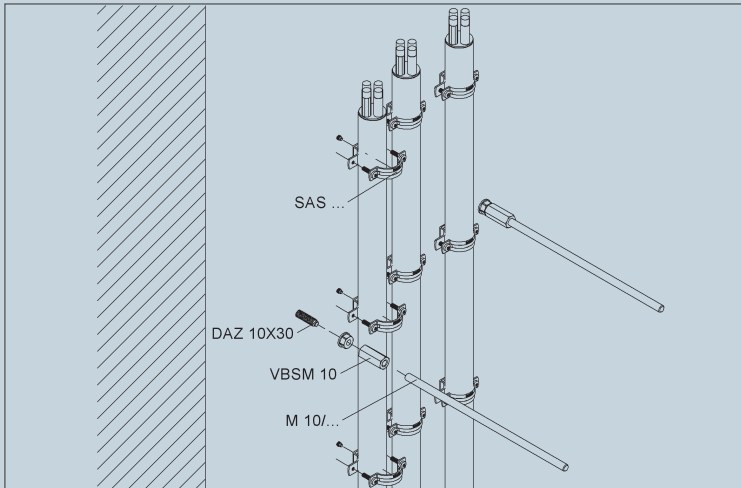
This strain relief is suitable for cable systems of the standard support construction with the circuit integrity maintenance classes E30, E60 and E90.

In case of fire, the strain relief prevents loss of clamping force of the clamp on the cable and thus prevents slipping or tearing off due to excessive cable dead weight.

Suitable for vertical installation with:

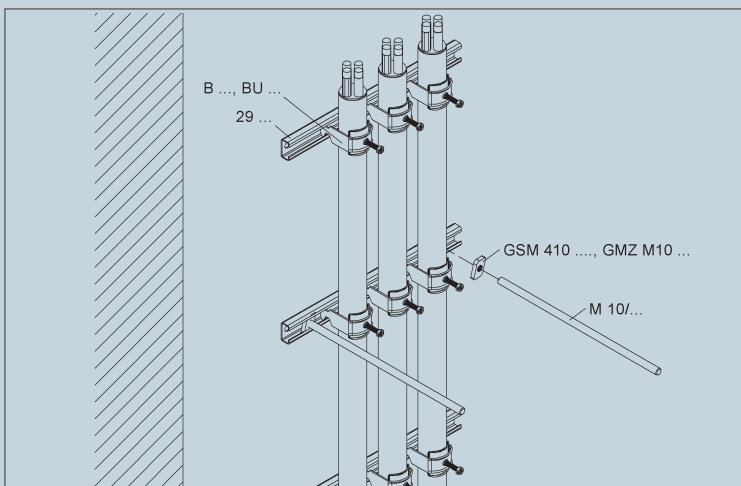
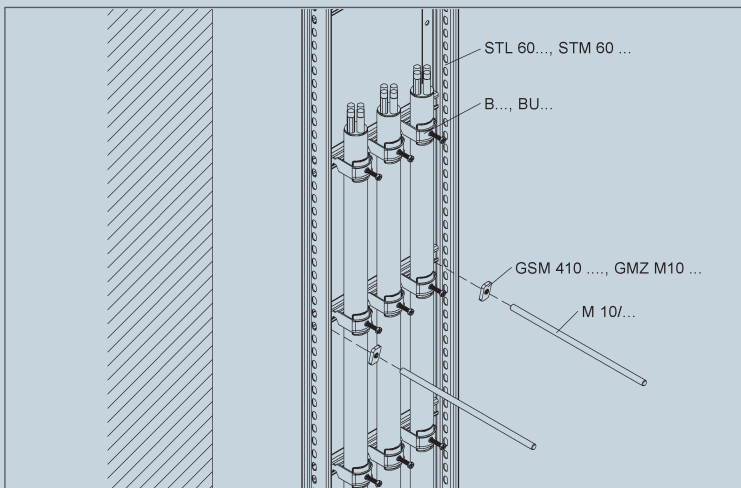
- screw distance clamps SAS... respectively
- cable U-clamps B... resp. BU... or
- STL..., STM... vertical cable ladders

up to a maximum width of 600 mm and a maximum cable weight of 20 kg/m.



Irrespective of the circuit integrity maintenance classification of the cable system, the E30 - E90 strain relief can be optionally:

directly in the ground with approved male threaded anchors, such as DAZ 10X30 in connection with the junction sleeve VBSM 10 or with approved female threaded anchors M10 (according to the adjacent illustrations)

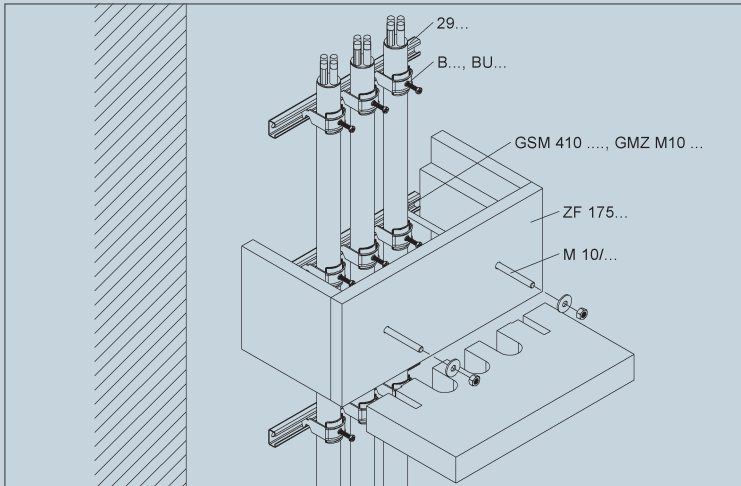


or

with sliding nut in the C-profile type 2970... or in rungs of the STL... / STM... vertical cable ladders (according to the adjacent illustration).

can be mounted.

Suitable dowels can be found in chapter “8 Fastening Elements”. ➔ 256



No special tools are required for mounting the ZF... strain relief. Drilling the fixing holes can be done with an HSS drill for steel.

The required feed-through holes in the two mineral fibre panels can be conveniently made with a serrated knife.

Loose mineral wool for filling the inner clamping space is included in the delivery in sufficient quantity.

Finally, the fully assembled strain relief must be marked accordingly. The identification plate shown opposite is included in the scope of delivery.

Detailed information can be found in the installation instructions enclosed with the strain relief.

	Niedax GmbH & Co.KG Asbacher Straße 141 D-53545 Linz am Rhein	Tel: +49 (0) 2644/5606-0 www.niedax.com
	Kabelanlage E _____ gemäß DIN 4102-12	
Errichtungsdatum: _____		
Errichter der Anlage: _____		
Prüfzeugnis-Nr.: _____		
Prüfzeugnis Inhaber: _____		

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7 STRAIN RELIEF FOR CIRCUIT INTEGRITY MAINTENANCE INSTALLATION SYSTEMS (EFFECTIVE SUPPORT MEASURE)

Strain Relief

Model No.	Height H mm	Clear inner dimension B1 mm	Width B2 mm	Depth T mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
ZF 175.250-90	200	250	350	225	193868	652,00	1 pc.
ZF 175.350-90	200	350	450	225	193875	762,00	1 pc.
ZF 175.450-90	200	450	550	225	193882	880,00	1 pc.
ZF 175.550-90	200	550	650	225	193899	984,00	1 pc.
ZF 175.650-90	200	650	750	225	193912	1.098,00	1 pc.

effective support measure for vertical cable systems with circuit integrity maintenance in accordance with DIN 4102 part 12.

The set consists of:

1 casing incl. mineral fibre boards

1 cartridge with fire protection coating

1 identification plate

2 threaded rods M10x300

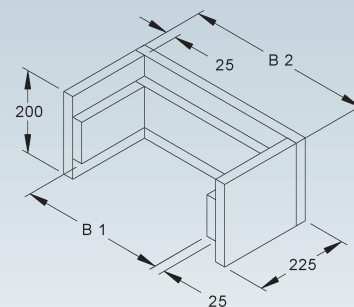
2 large washers UGM 10

2 hexagon nuts SM 10

2 sliding nuts GSM 410 (suitable for C-profile 2970 and rung of vertical cable ladder STL 60...)

For fastening on C-profiles 2986 or on the rung of the vertical cable ladder STM 60... the sliding nut GMZ M10 F needs to be ordered separately.

Other dimensions on request.



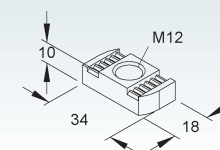
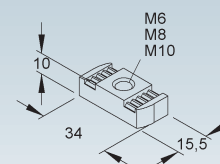
Sliding Nut

Model No.	Thread M	Resistance class	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
F GMZ M10 F	10	8	947423	3,20	100 pcs.

Used for: C-profiles 2985, 2986, 2988 and 2990 with 18 mm slot width

C-profiles 2996Z with 22 mm slot width

Insertable at any position of the C-profile.

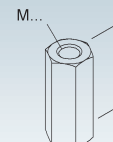


Junction Sleeve

hexagonal

Model No.	Thread M	Length L mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V VBMS 10	10	40	345601	2,30	50 pcs.

for connecting threaded rods



Ablative sealing mass for strain relief

ETA-14/0418

Model No.	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
ZF ABL	213078	46,00	1 pc.



Further details can be found in the above-mentioned ETA approval.
For additional requirements.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

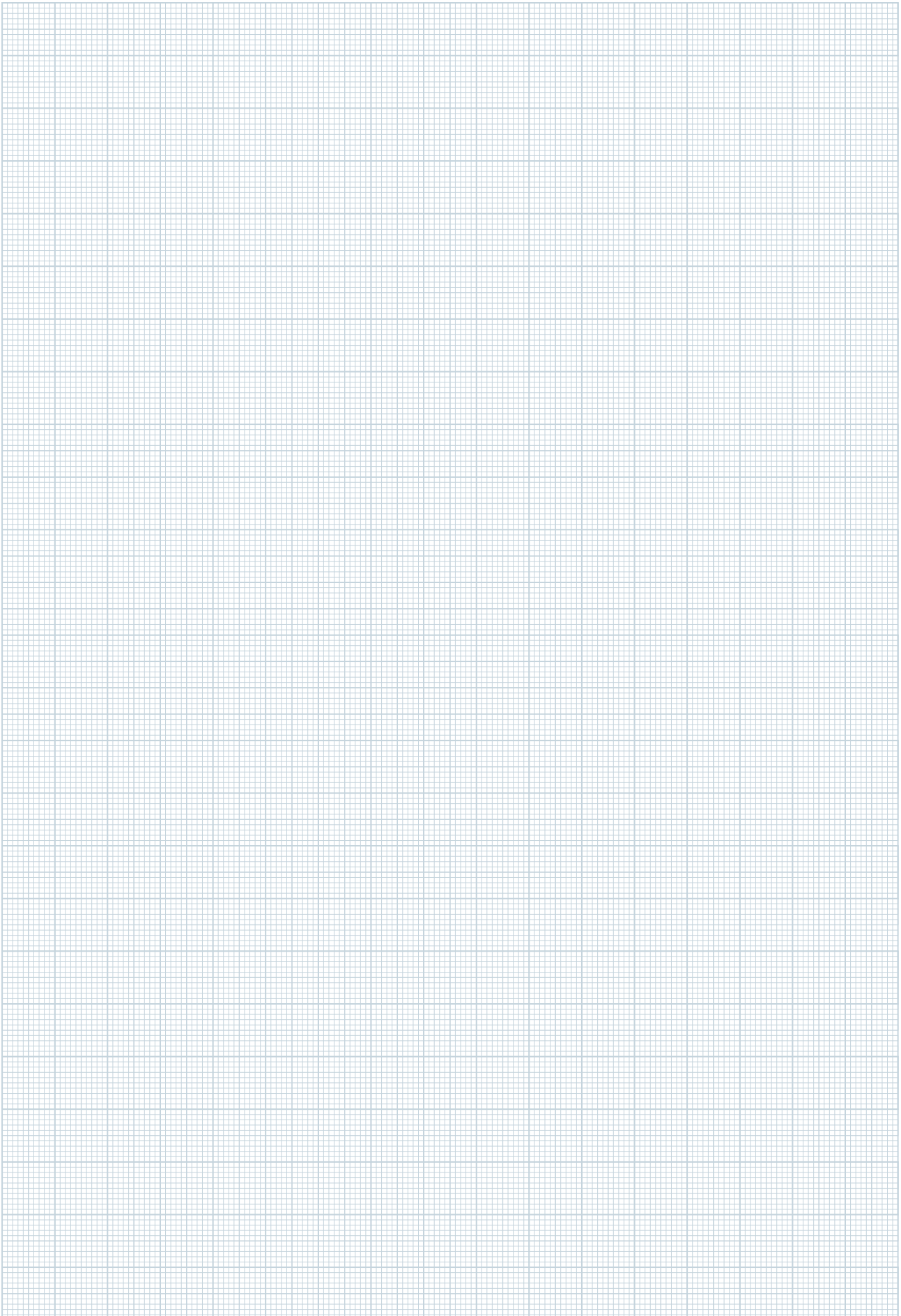
Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

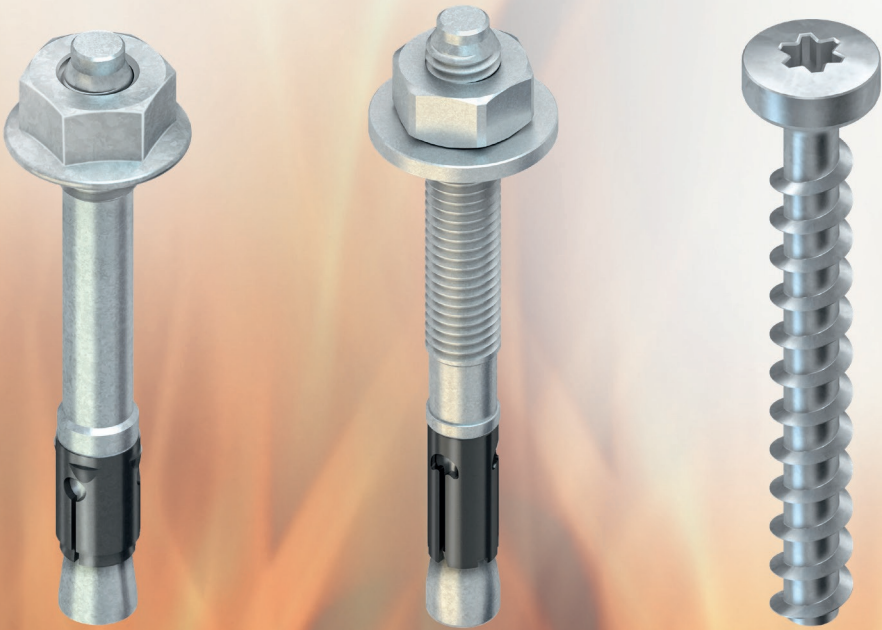
NIEDAX GROUP Niedax GmbH & Co.KG Asbacher Straße 141 D-53545 Linz am Rhein		Tel: +49 (0) 2644/5606-0 www.niedax.com
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NOTES



↑	
◀	64
◀	73
◀	212
◀	235
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◀	218
◀	230
◀	231
◀	232
◀	233
◀	252



8 FASTENING ELEMENTS

For fastening all the installation systems in this catalogue, we offer you DAZ.../DAM... anchor bolts, NA... nail anchors and NSA... screw anchors for installation in concrete with European technical approval (ETA approval) for a fire resistance duration of R 120. For fastening the circuit integrity maintenance installation systems to load-bearing wooden components, you can use the NHS... wood screws with a fire resistance duration of F 30 or F 60 from our range.

Even for a double-sided two-layer cable tray arrangement on the overhead hanger with 25 kg/m cable dead weight each, the DAZ... anchor bolts offers you sufficient load-bearing capacity at 90-minute fire stress.

Each of the metal expansion anchors and screw anchors can be used in non-cracked and cracked concrete.

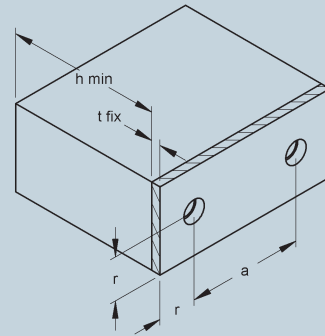
The anchor bolts DAZ... or DAM..., nail anchors NA... and screw anchors NSA... with fire resistance category $\leq R 120$ are suitable for reinforced and unreinforced concrete C20/25 to C50/60 according to EN 206.

For use in dry interiors, all anchor types and sizes are available in galvanised design.

For outdoor use, including industrial atmospheres and near the sea, if there are no special aggressive conditions, anchor-bolts DAZ... E4 should be used.

For circuit integrity maintenance on load-bearing timber components, the wood screws NHS... with fire resistance category F30 or F60 according to DIN 4102 Part 12 are used.

Further details can be found in the ETA approvals ETA-18/0541, ETA-18/0542, ETA-15/0784 and ETA-19/0553.



Nail Anchor NA, Anchor Bolt DAM

gvs = galvanised according to DIN EN ISO 2081/DIN EN ISO 4042, blue passivated

Type of anchor	NA 6X5...	NA 6X30...	DAM 6X5...	DAM 6X10...
Effective embedment depth h_{ef}	25 mm	30 mm	25 mm	30 mm
Fastening torque M_D	---	---	4 Nm	4 Nm
Approval number	ETA-18/0541	ETA-18/0541	ETA-18/0541	ETA-18/0541
Maximum permissible loads ³⁾ of a fixing point ⁴⁾ in normal weight concrete.				
Fire resistance duration t	Permissible load under fire load perm. F fi(t) in (kN)			
	perm. F fi(t)	perm. F fi(t)	perm. F fi(t)	perm. F fi(t)
30 min	≤ 0,60 kN	≤ 0,90 kN	≤ 0,60 kN	≤ 0,60 kN
60 min	≤ 0,60 kN	≤ 0,80 kN	≤ 0,35 kN	≤ 0,35 kN
90 min	≤ 0,50 kN	≤ 0,50 kN	≤ 0,30 kN	≤ 0,30 kN
Distance a between two anchors (characteristic centre distance)	100 mm	120 mm	100 mm	120 mm
Distance r to the edge of the anchoring substrate (minimum distance)	50 mm	60 mm	50 mm	60 mm
Minimum thickness of the anchoring substrate (minimum building thickness) h_{min}	80 mm	80 mm	80 mm	80 mm

Anchor Bolt DAZ

gvs = galvanised to DIN EN ISO 2081/DIN EN ISO 4042, blue passivated

Type of anchor	DAZ 8X10...	DAZ 10X10... DAZ 10X30...	DAZ 12X10...	DAZ 16X25...
Effective embedment depth h_{ef}	45 mm	60 mm / 80 mm	70 mm	85 mm
Fastening torque M_D	20 Nm	45 Nm	60 Nm	110 Nm
Approval number	ETA-18/0542	ETA-18/0542	ETA-18/0542	ETA-18/0542
Maximum permissible loads ¹⁾ of a single anchor in normal weight concrete C 20/25 ²⁾ under stress.				
Fire resistance duration t	Permissible tensile force perm. F fi(t) in (kN) and permissible shear force perm. V fi(t) in (kN) under fire exposure			
	perm. F fi(t) / perm. V fi(t)	perm. F fi(t) / perm. V fi(t)	perm. F fi(t) / perm. V fi(t)	perm. F fi(t) / perm. V fi(t)
30 min	≤ 1,40 kN / ≤ 1,80 kN	≤ 2,80 kN / ≤ 3,60 kN	≤ 5,00 kN / ≤ 6,30 kN	≤ 9,40 kN / ≤ 11,70 kN
60 min	≤ 1,20 kN / ≤ 1,60 kN	≤ 2,30 kN / ≤ 2,90 kN	≤ 4,10 kN / ≤ 4,90 kN	≤ 7,70 kN / ≤ 9,10 kN
90 min	≤ 0,90 kN / ≤ 1,30 kN	≤ 1,90 kN / ≤ 2,20 kN	≤ 3,20 kN / ≤ 3,50 kN	≤ 6,00 kN / ≤ 6,60 kN
Distance a between two anchors (characteristic centre distance)	180 mm	240 mm*	280 mm	340 mm
Distance r to the edge of the anchoring substrate (minimum distance)	90 mm	120 mm	140 mm	170 mm
Minimum thickness of the anchoring substrate (minimum building thickness) h_{min}	100 mm	120 mm	140 mm	170 mm

* = only applies to the spacing of adjacent anchor groups

1) Partial safety factors $\gamma_{M,fi}$ = 1.0 and $\gamma_{P,fi}$ = 1.0 are taken into account.

For the combination of tension and shear loads, for edge effects and for anchor groups, please refer to Technical Report TR 020.

2) The concrete is assumed to be normally reinforced or unreinforced; higher values are possible for higher concrete strengths.

3) Partial safety factors $\gamma_{M,fi}$ = 1.0 are taken into account. The loads apply to the load direction tension, transverse tension and oblique tension at any angle and edge distances of at least 100 mm. For smaller edge distances, reduced loads according to approval ETA-18/0541 must be taken into account.

4) A fixing point can consist of a single anchor, a group of two with $s > 50$ mm or a group of four with $s > 50$ mm.

Any further verifications required to guarantee the component and anchor load-bearing capacity, e.g. from the building regulations, the general building inspectorate approvals or other guidelines must be observed.

Wood Screw NHS with plate head

Wood screw type		NHS 6x60/ TK-T30 V	NHS 6x100/ TK-T30 V	NHS 10x80/ TK-T40 V	NHS 10x100/ TK-T40 V	NHS 10x120/ TK-T40 V	NHS 10x140/ TK-T40 V
Approval number		ETA-19/0553					
Effective embedment depth h _{ef}		The screw must be screwed in so far that the component to be fastened is securely fixed. The corresponding assignment can be found in our expert judgement report.					
Recommended drill hole diameters	Softwood	4,0 mm		6,0 mm			
	Hardwood	4,0 mm		7,0 mm			
		The fire protection plate must be in full contact with the timber component. This ensures that no matter which specification (Eurocode EN 1995-1-1, ETA, etc.) applies, it is complied with. A corresponding assignment can be found in our expert judgement report.					

Nail Anchor

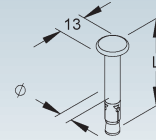
Approval no.: ETA-18/0541

Model No.	Length L	Nominal drilling-Ø	Clamping area t fix	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm			
✓ NA 6X5	42	6	≤ 5	158171	1,07	100 pcs.
✓ NA 6X30	65	6	≤ 30	117673	1,60	100 pcs.

Further details can be found in the above-mentioned ETA approval.

Please also note:

Declaration of Performance (DoP) No. NI001



Anchor Bolt

Approval no.: ETA-18/0541, with flange nut and metric connecting thread M6

Model No.	Metric connection thread M	Length L	Nominal drilling-Ø	Clamping area t fix	Effective anchoring depth h ef	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm			
✓ DAM 6X5	6	50	6	≤ 5	30	158126	1,38	100 pcs.
✓ DAM 6X10	6	55	6	≤ 10	30	117666	1,30	100 pcs.

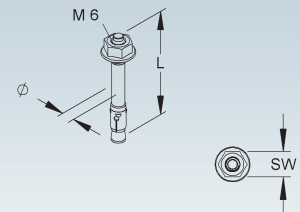
Further details can be found in the above-mentioned ETA approval.

Please also note:

Declaration of Performance (DoP) No. NI001

Recommended torque 4 Nm

Width across flats 10



Anchor Bolt

Approval no.: ETA-18/0542, with nut and large washer

Model No.	Metric connection thread M	Length L	Nominal drilling-Ø	Washer Diameter B	Clamping area t fix	Effective anchoring depth h ef	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm	mm			
✓ DAZ 8X10	8	75	8	24	≤ 10	45	842803	3,16	50 pcs.
✓ DAZ 10X10	10	95	10	25	≤ 10	60	842827	6,33	50 pcs.
✓ DAZ 12X10	12	110	12	30	≤ 10	70	842865	10,27	20 pcs.

Further details can be found in the above-mentioned ETA approval.

Please also note:

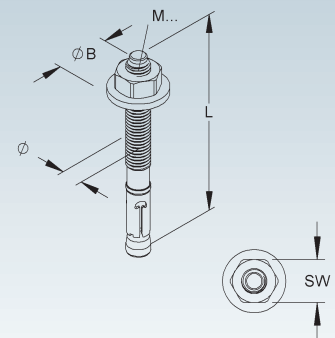
Declaration of Performance (DoP) No. NI003

Recommended torques:

DAZ 08 - Torque 20 Nm, width across flats 13

DAZ 10 - Torque 45 Nm, width across flats 17

DAZ 12 - Torque 60 Nm, width across flats 19



Anchor Bolt

Approval no.: ETA-18/0542, with nut and washer

Model No.	Metric connection thread M	Length L	Nominal drilling-Ø	Washer Diameter B	Clamping area t fix	Effective anchoring depth h ef	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
		mm	mm	mm	mm	mm			
✓ DAZ 10X30	10	115	10	20	≤ 30	60	842841	7,32	25 pcs.
✓ DAZ 16X25	16	148	16	30	≤ 25	85	842889	23,78	10 pcs.

Further details can be found in the above-mentioned ETA approval.

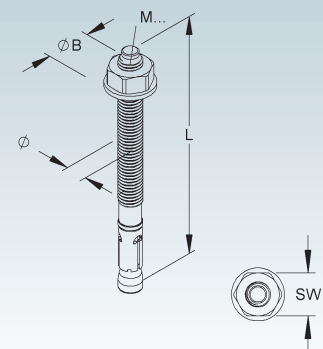
Please also note:

Declaration of Performance (DoP) No. NI003

Recommended torques:

DAZ 10 - Torque 45 Nm, width across flats 17

DAZ 16 - Torque 110 Nm, width across flats 24



Anchor Bolt

Approval no.: ETA-18/0542, with nut and washer

Model No.	Metric connection thread M	Length L mm	Nominal drilling-Ø mm	Washer Diameter B mm	Clamping area t fix mm	Effective anchoring depth h ef mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
E4 DAZ 8X10 E4	8	75	8	24	≤ 10	45	933808	3,04	50 pcs.
E4 DAZ 10X10 E4	10	95	10	25	≤ 10	60	062157	6,09	50 pcs.
E4 DAZ 10X30 E4	10	115	10	20	≤ 30	60	109814	7,02	50 pcs.
E4 DAZ 12X10 E4	12	110	12	30	≤ 10	70	070855	10,05	20 pcs.

for use in dry interiors, for cracked and non-cracked concrete

Further details can be found in the above-mentioned ETA approval.

Please also note:

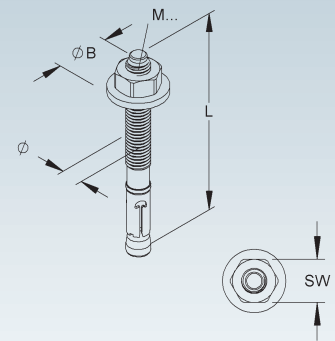
Declaration of Performance (DoP) No. NI003

Recommended torques:

DAZ 08 - Torque 420 Nm, width across flats 13

DAZ 10 - Torque 45 Nm, width across flats 17/16

DAZ 12 - Torque 60 Nm, width across flats 19



Screw Anchor

Approval no.: ETA 15/0784, with flat round head and torx drive T30

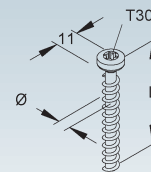
Model No.	Diameter mm	Length L mm	Actuator size	Nominal drilling-Ø mm	Max. thickn. of structural component t fix mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V NSA 6X35/FKK-T30 V	6	35	T30	5	1	153893	0,91	100 pcs.
V NSA 6X50/FKK-T30 V	6	50	T30	5	5/15	153374	1,02	100 pcs.

for use in dry interiors, for cracked and non-cracked concrete

For use in masonry see general type approval Z-21.1-2103

For sand-lime bricks (KS), perforated sand-lime bricks (KSL) and solid bricks (MZ), a fire protection report is available for circuit integrity maintenance.

Further details can be found in the above-mentioned ETA approval.



Screw Anchor

Approval no.: ETA 15/0784, with hexagonal head and metric connection thread M6

Model No.	Diameter mm	Metric connection thread M	Length L mm	Nominal drilling-Ø mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V NSA 6X55/SW10-M6 V	6	6	55	5	153916	1,12	100 pcs.

for use in dry interiors, for cracked and non-cracked concrete

For use in masonry see general type approval Z-21.1-2103

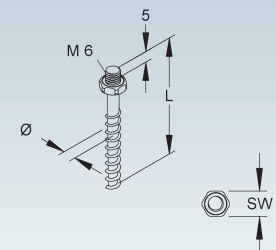
For sand-lime bricks (KS), perforated sand-lime bricks (KSL) and solid bricks (MZ), a fire protection report is available for circuit integrity maintenance.

Further details can be found in the above-mentioned ETA approval.

It is recommended to set the screw anchor with a tangential impact wrench or by hand.

Recommended screw tightening torque 10 Nm

Width across flats 10



Screw Anchor

Approval no.: ETA 15/0784, with large flat round head and torx drive T30

Model No.	Diameter mm	Length L mm	Actuator size	Nominal drilling-Ø mm	Max. thickn. of structural component t fix mm	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
V NSA 7.5X40/FKG-T30 V	7,5	40	T30	6	5	153923	1,38	100 pcs.
V NSA 7.5X50/FKG-T30 V	7,5	50	T30	6	15	153930	1,62	100 pcs.

for use in dry interiors, for cracked and non-cracked concrete

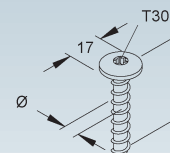
For use in masonry see general type approval Z-21.1-2103

For sand-lime bricks (KS), perforated sand-lime bricks (KSL) and solid bricks (MZ), a fire protection report is available for circuit integrity maintenance.

Further details can be found in the above-mentioned ETA approval.

It is recommended to set the screw anchor with a tangential impact wrench or by hand.

Recommended screw tightening torque 20 Nm





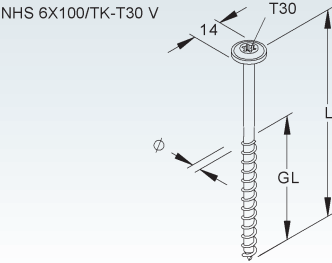
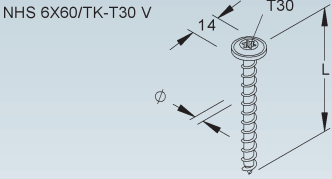
Wood Screw

Approval no. ETA-19/0553, with plate head Ø 14 and torx drive T30

Model No.	Dia-meter	Length L	Thread length GL	Actuator size	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
✓ NHS 6X60/TK-T30 V	6	60	56	T30	192359	0,92	100 pcs.
✓ NHS 6X100/TK-T30 V	6	100	60	T30	192342	1,38	100 pcs.

for fastening Niedax cable support systems for cable systems with circuit integrity maintenance to load-bearing timber components of fire resistance classes F30 or F60 according to DIN 4102 Part 12

Further details can be found in the above-mentioned ETA approval.



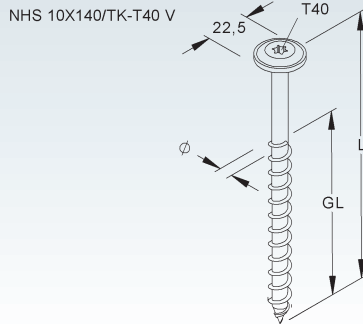
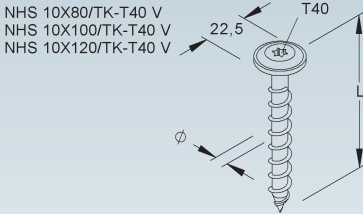
Wood Screw

Approval no. ETA-19/0553, with plate head Ø 22,5 and torx drive T40

Model No.	Dia-meter	Length L	Thread length GL	Actuator size	EAN code	Weight in kg per 100 pcs.	Smallest packaging unit
	mm	mm	mm				
✓ NHS 10X80/TK-T40 V	10	80	73	T40	192335	3,36	50 pcs.
✓ NHS 10X100/TK-T40 V	10	100	93	T40	192298	3,98	50 pcs.
✓ NHS 10X120/TK-T40 V	10	120	100	T40	202621	4,55	50 pcs.
✓ NHS 10X140/TK-T40 V	10	140	84	T40	192328	5,15	50 pcs.

for fastening Niedax cable support systems for cable systems with circuit integrity maintenance to load-bearing timber components of fire resistance classes F30 or F60 according to DIN 4102 Part 12

Further details can be found in the above-mentioned ETA approval.



Identification Sign for Functional Maintenance Installation System

5 pieces per A4 sheet, in German language

Model No.	EAN code	Weight in kg per 100 sets	Smallest packaging unit
HB-ETI-NDX-KF DE-5	171750	0,00	1 set

for marking functional maintenance cable trays

Niedax GmbH & Co.KG

Asbacher Straße 141

D-53545 Linz am Rhein

Tel: +49 (0) 2644/5606-0

www.niedax.com

Kabelanlage E

gemäß DIN 4102-12

Errichtungsdatum:

Errichter der Anlage:

Prüfzeugnis-Nr.:

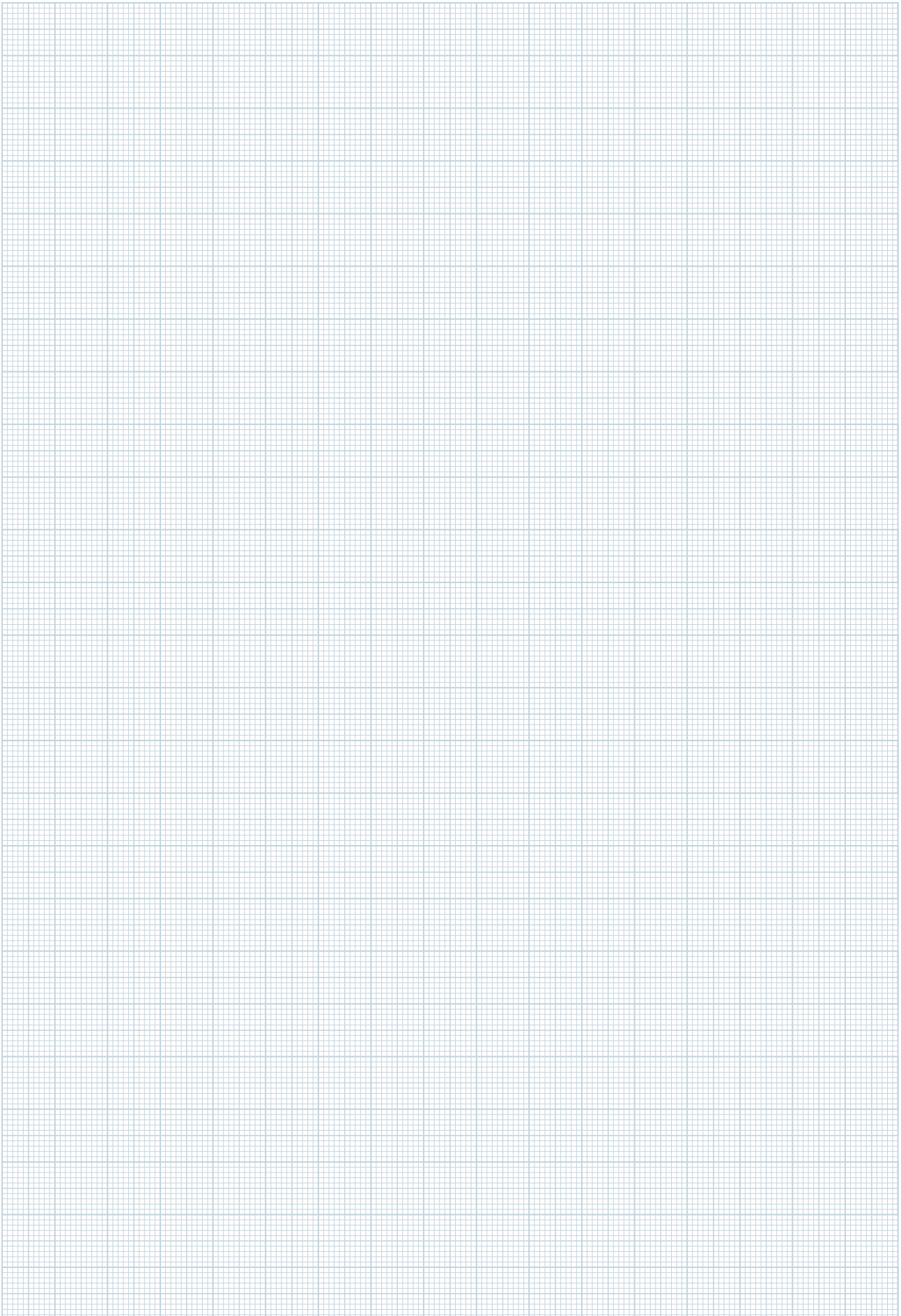
Prüfzeugnis Inhaber:

ACHTUNG!

Trasse nur für elektrischen Funktionserhalt



NOTES



NIEDAX GENERAL TERMS OF SALE AND DELIVERY

I. GENERAL PROVISIONS

- The following terms of sale and delivery are valid for every contract entered into by the Buyer and Niedax regarding delivered goods. They are valid for all future businesses even if they have not been expressly agreed upon again. Deviating purchasing terms of the buyer which are not expressly accepted by us, are not valid for Niedax. That applies also if Niedax has not expressly rejected them. The following terms are valid also if Niedax has executed the Buyer's order without objections while knowing of his adverse or different purchase terms. Sales to private, i.e. non-business customers are not made.
- All agreements between the Buyer and Niedax regarding the execution of the sales contracts are contained by writing in the contracts.
- If particular provisions are legally invalid, the whole contract shall remain validity regarding in the remaining parts, except for those cases where adherence to the contract would be unacceptable for at least one contractual party.

II. PRICES AND TERMS OF PAYMENT

- The prices indicated are net, ex works, excluding packing, the respective VAT if applicable has to be added on top.
- Prices apply without packing costs for orders up to Euro 600 net (not including VAT). In the case of orders greater than Euro 600 net (not including VAT), we deliver free of charge to the next goods station, including packing, for sealed collection in one consignment. Haulage at the place of reception is at the expense of the customer.
- An additional charge of Euro 10 net (not including VAT) per order is levied on minimum orders of a value of less than Euro 100 net (small orders, not including VAT). The minimum-sized packing or packing drums are made to suit requirement and are only sold in complete packing units. A surcharge of Euro 5 net (not including VAT) to cover expenses is levied per unit (packing or packing drum) for orders that deviate from the standard packing unit sizes.
- Delivery in parts is permitted if economically reasonable for the Buyer.
- If deliveries are to be made to construction sites, the costs for freight / transportation will be advanced by Niedax und will be invoiced to the Buyer if no freight-free delivery is applicable or had been agreed.
- If not otherwise agreed, all payments have to be made at the latest 10 days after invoicing to allow a three per cent discount, 30 days after invoicing to allow a two per cent discount and 45 days after invoicing net without deductions. This assumes that our invoice has not been dispatched before delivery of the goods; if that may be the case as an exception, the periods for payment shall be calculated on the day of delivery.
- If the Buyer fails to fulfil his obligations to pay, e.g. does not honour a cheque or a bill payable or ceases his payments, or when circumstances become known that put his creditworthiness into question, then the entire residual debt shall become due, even if invoices exist that have a later maturity date or other agreements have been made regarding extension of the term of payment. In this case we shall not be obliged to make further deliveries unless the customer offers advanced payment before delivery. In the event that the customer does not offer cash payment, then we shall be entitled to claim damages for non-performance.
- The Buyer can only set off against claims which are undisputed, accepted or legally ascertained.

III. DELIVERY TIMES, DELAY

- Compliance with set periods for deliveries presupposes the punctual submission of all the necessary documents and other obligations that are to be supplied by the ordering party. If these preconditions are not promptly satisfied, then the periods of time shall be increased accordingly; this shall not apply if Niedax is responsible for the delay.
- In case Niedax delays performance, the ordering party shall be entitled to demand damages limited to the foreseeable, typically occurring damage, except if the delay results from a deliberate or grossly negligent breach of contract or in case of fatal or bodily injury or injury to health, with Niedax having to take responsibility for respective acts committed by representatives and agents.
- If the Buyer can prove damages resulting from the delay in delivery, he is entitled to claim compensation of 0.3 % for each full week of delay, but not more than a total of 15 % of the price of the amount of delivery that could not be put to appropriate use because of the delay.
- In case the dispatch or delivery are delayed at the request of the ordering party by more than a month after notification of readiness to deliver, it shall be possible to invoice the ordering party for storage for each month commenced at a rate of 0.5 %, but not more than a total of 5 %, of the price of the objects to be delivered. The contract parties remain free to prove higher or lower storage costs.
- If the delivery times are not observed as a consequence of force majeure, e.g., mobilization, war, insurrection, or similar events like strikes or lock-outs, then the periods of time shall be extended accordingly.

IV. PASSING OF RISK, RECEIPT, TAKING BACK

- The risk, including for carriage paid delivery, is passed to the ordering party as follows:
 - In the case of deliveries without mounting or installation, when they are handed over to the transport agent or to the ordering party in case of collection by themselves. At the request and expense of the ordering party deliveries will be insured by Niedax against the usual transport risks;
 - In case of deliveries including mounting or installation the passing of risk is on the day of acceptance within the ordering party's premises, or, if agreed, after a faultless test operation.
- If the ordering party is responsible for delays in dispatch, delivery, the commencement or execution of the mounting or installation, acceptance at the ordering party's premises or the trial operation, or if the ordering party delays acceptance for any other reason, then the risk shall be transferred to the ordering party.
- The ordering party may not refuse to accept deliveries for the reason of slight defects. The recipient is responsible for the proper unloading of the goods at the place of receipt.
- Returns of goods have to be coordinated with the concerned person dealing with the case. Articles which are especially produced and not fit for warehousing are exempt from taking back.

V. RETENTION OF TITLE

- The delivered goods shall remain our property until all our claims arising from the business relationship have been settled. The delivered goods may only be sold in the due course of business either for cash payment or by transferring our reservation of ownership to the buyer. They may not be pledged nor assigned nor transferred by the customer.
- The Buyer may sell or utilize the goods subject to retention of title for proper business purposes, unless he is in delay of payment. The customer herewith assigns to us all his future claims from release of the reserved goods. This assignment shall apply both for the full value and for the partial value corresponding to our coownership share of the goods sold. The assignment shall remain valid until all our claims have been paid in full. We hereby accept this assignment. The thus originated sole or partial ownership will be kept by the Buyer on our behalf.
- We authorize the Buyer revocably to collect payments regarding the assigned claims - as long as he continues to fulfil his obligations towards us and does not become bankrupt. The sums received shall be transferred to us immediately when our claims are due.
This authorization can be revoked anytime if the Buyer does not adhere to his payment obligations. The Buyer is not entitled to assign the claims to other parties, e.g. in a system of debt collection by factoring, except if at the same time the factor accepts the obligation to pay the consideration directly to us as long as claims by us exist against the Buyer.
- If the goods are combined or merged with other items, we gain co-ownership regarding the new item, corresponding to the value of our reserved goods in relation to the value of the other goods at the time of processing. If the goods subject to retention of title are processed by the customer, each processing takes place for us.
- In the case of neglect of duty by the Buyer, esp. delay of payment, we are entitled to the retraction of the goods subject to retention of title as well as to the withdrawal from the affected deal. The performance of retraction or of claiming the retention of the goods only means a withdrawal if we declare it expressly to be.
- The customer shall immediately inform us of any third-party judicial enforcement measures against the reserved goods or claims assigned to us in advance. Such information must be accompanied by the documentation required for intervention.

NIEDAX GENERAL TERMS OF SALE AND DELIVERY

VI. WARRANTY FOR MATERIAL DEFECTS AND LIABILITY

1. Claims for defects can only be made if the Buyer adhered to his obligation under § 377 HGB to properly examine and if necessary notify Niedax of defects.
2. In case of a defect, the Buyer has to give Niedax the opportunity for supplementary performance within reasonable time. The supplementary performance is deemed failed after unsuccessful attempts, if not more attempts are appropriate and just and reasonable for the buyer, regarding the contractual item. If the supplementary performance has failed, the Buyer is entitled – notwithstanding possible claims regarding damages – to withdraw from the contract or to reduce the remuneration. Damages resulting from defects cannot be claimed before the supplementary performance has been attempted twice (at least) unsuccessfully, except regarding damages under Clause VIII.
3. Claims on the part of the Buyer for expenses necessary for the purpose of remedying defects, will be borne by Niedax assumed that they are necessary and are not increased because the object of delivery has afterwards been taken to a place other than the premises of the ordering party, unless such movement complies with its use in accordance with the regulations.
4. Claims for only minor deviation from the agreed quality cannot be accepted. We must therefore reject claims for only minor impairment to fitness for use, or for natural wear and tear, or for damage arising after the transfer of risk as a result of faulty or negligent handling, excessive stress, unsuitable operating materials, defective building works, unsuitable building ground, or occurring as a result of other external influences that have not been presumed according to the contract. In case the ordering party or a third party carries out inexperienced repairs or changes, there is no right for claims will be granted by Niedax for defects caused by these works or the consequences of them.
5. We are liable according to the law for damages to life, body and health that result from an intentional or negligent neglect of duty committed by us, our representatives or agents, as well as for damages that are fall within product liability laws. We are liable for damages not included in the first sentence which result from intentional or grossly negligent breaches of contract as well as in case of fraudulent concealment of a defect committed by us, our representatives or agents, following the legal provisions. In those last mentioned cases however our liability is limited to the foreseeable, typically occurring damage, except when we or our representatives or agents have acted intentionally.
6. We are liable for damages that are caused by us by slight negligent neglect of contractual obligations whose fulfillment is indispensable for the contractual performance and in whose compliance the Buyer fundamentally and justifiably trusts (fundamental contractual obligations). Our liability is however limited to damages that are typically related to the contract and foreseeable.
7. In accordance with § 478 BGB (Rückgriff des Unternehmers [Contractor's Recourse, § 478 BGB]), the ordering party's rights of recourse against Niedax only exist in so far as the ordering party has made no agreements with its supplier that extend beyond the legal claims for defects.
8. Claims for material defects are subject to a limitation period of 12 months. This restriction shall not apply in so far as the law prescribes longer periods in accordance with §§ 438, Par. 1 No. 2 (Bauwerke und Sachen für Bauwerke [Buildings and Items for Building]), 479 Par. 1 (Rückgriffsanspruch [Right of Recourse]) and 634a Par. 1 No. 2 (Baumängel [Building Defects]) of the BGB [German Civil Code], and in cases of injury to life, health or bodily injury, in case of an intentional or gross carelessness on the part of Niedax, and in case of fraudulent concealment of a defect.

VII. IMPOSSIBILITY; ADAPTATION OF CONTRACTS

1. If delivery is impossible, the ordering party shall be entitled to demand compensation, unless Niedax is not responsible for the impossibility. The claim for damages on the part of the ordering party is, however, limited to 15 % of the value of that part of the delivery that cannot be put into appropriate operation due to the impossibility of delivery. This limitation shall not apply in so far as there is absolute liability in cases of intent or gross negligence or in the event of fatal or bodily injury or injury to health; this is not associated with any change in the burden of proof to the disadvantage of the ordering party. The right of the ordering party to withdraw from the contract remains unaffected.
2. If unforeseeable events in the sense of Item III No. 5 significantly change the economic importance or content of the delivery or have a significant effect on the working activities of Niedax, the contract shall be reasonably adapted respecting good faith. If this is not economically justifiable, Niedax shall have the right to withdraw from the contract. If he wishes to avail himself of this right to withdraw from the contract, then he shall undertake to inform the ordering party of the fact immediately, having determined the extent and consequences of the event; this shall also apply if an extension of the delivery time has first been agreed with the ordering party.

VIII. FURTHER CLAIMS TO DAMAGES

1. Claims to damages and expenses by the Buyer (hereafter: damages), whatsoever the legal reason, especially resulting from a neglect of contractual obligations or from an unlawful act, are excluded.
2. The aforesaid exclusion is not valid insofar as there is mandatory liability by law, e.g. under product liability law, in cases of intentional or grossly negligent acts, damages to life, body and health and neglect of fundamental contractual obligations. Our liability regarding the neglect of fundamental contractual obligations is however limited to damages typically related to the contract and foreseeable, except with intentional or gross negligence and with damages to life, injuries, impacts on health. This is not associated with any change in the burden of proof to the disadvantage of the ordering party.
3. The Buyer's claims to damages mentioned here in Art. VIII expire after the end of the limitation period according material defects under Article VI paragraph 8. In case of titles to claim according to the Product Liability Act the legal rules regarding the limitation period will apply.
4. The 12 months limitation period also applies to measures to remedy the damages, especially to product recalls.

IX. PLACE OF PERFORMANCE, OF JURISDICTION AND APPLICABLE LAW

1. Place of performance of deliveries and payments is Linz/Rhine. The sole place of jurisdiction for all disputes arising directly or indirectly out of sales contracts between Niedax and the Buyer (including action on a dishonored cheque or bill payable) shall be governed by the place of performance, too. Niedax shall, however, also be entitled to bring an action at the domicile of the ordering party.
2. The legal relationships between the contractual parties shall be governed exclusively by German substantive law, to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG).

X. SETTLEMENT OF CONSUMER CLAIMS

Companies of NIEDAX GROUP do not enter into contractual relationships with consumers in accordance to § 310 fig. 3 BGB as our products are exclusively delivered to authorized distributors and commercial customers.

For this reason we are not participating in any settlement procedure for claims from consumers in any Consumer Arbitration Centre. However, in accordance to the German law on alternative settlements of consumer claims we are obliged to inform about the relevant authority for settlement of consumer claims (Consumer Arbitration Centre):

Allgemeine Verbraucherschlichtungsstelle des Zentrums für Schlichtung e.V.
 Straßburger Str. 8
 77694 Kehl
 Internet: www.verbraucher-schlichter.de

As of 09/2020



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