

PYROLINE® Con PLC

Concrete fire protection ducts with European classification and EI30 to EI90 fire resistance classes according to EN 13501-2

Fire protection ducts

Their protective function

If there is a fire, then the fire protection ducts help to ensure the usability of the escape routes by protecting them against possible electrical cable fires, thus preventing the spread of fire. In particular, they fulfil two functions:

1. Fire protection duct is used wherever the environment must be protected against the impacts of cable fires. It encapsulates the fire load, meaning that, in the case of a cable fire, fire and smoke cannot escape from the duct.
2. In addition, it ensures that the cables located in the fire protection duct are not a part of the fire.



Application examples:

- Escape and rescue routes
- Industrial buildings
- Areas with an increased fire load
- Warehouses



Tests and classifications

Fire protection ducts must fulfil certain requirements for them to be used in buildings. They are construction products according to the European Construction Products Regulation CPR (EU No. 305/2011) and

thus carry the CE mark. This means that they can be used in all the countries of the EU.

Testing and classification

On its own, a single duct does not fulfil construction law requirements regarding fire protection. It is only the combination with fittings, cable outlets, and fastening on walls, on ceilings or on support systems that turn the construction products into fire-resistant installation ducts.

This is tested according to EN 1366-5, where the fire protection properties are determined for the encapsulation of the fire load and the heat insulation. This prevents combustible substances from igniting on the surfaces of the installation ducts.

During a fire test according to EN 1366-5, a cable fire in the interior of the duct is simulated. The ducts are filled with cables. The cable exits are also tested. This ensures whether fire and smoke can escape from the duct and whether the duct surfaces outside the testing furnaces heat up to an unpermitted level.

Then, the fire resistance of the installation is classified according to EN 13501-2. This then produces the following classifications, for example:

 <p>E120 (ho i → o) / EI 90 (ho i → o)</p> <p>The abbreviations stand for the following properties:</p>	E	Room closure (usually with a higher classification than with EI)
	I	Heat insulation
	30-120	Time in minutes of the achieved class
	h_o	Horizontal arrangement (includes vertical arrangements within fire sections without ceiling penetrations)
	i → o	Direction of the fire impact, here from inside to outside

The fire protection duct system

PYROLINE® Con PLC

In the PYROLINE® Con PLC fire protection duct system, made of water- and frost-resistant fibre glass lightweight concrete fire protection plates, OBO is able to meet all the requirements for a duct system with European classification. With two different wall thicknesses, the OBO PYROLINE® Con PLC fire protection duct system can achieve the fire resistance classes EI30–EI60 and EI90.

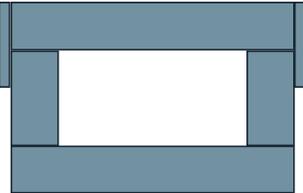
The PYROLINE® Con PLC fire protection ducts possess all the construction-relevant proofs of suitability:

- Classification report
- European Technical Assessment (ETA)
- Declaration of performance
- Detailed mounting instructions

System benefits:

- Cable assignment to max. 31.5 kg/m
- Hard, friction resistant surface of the fire protection plates
- Water and frost-resistant
- Made of non-combustible fire protection plates (Euroclass A1)
- No equipotential bonding required

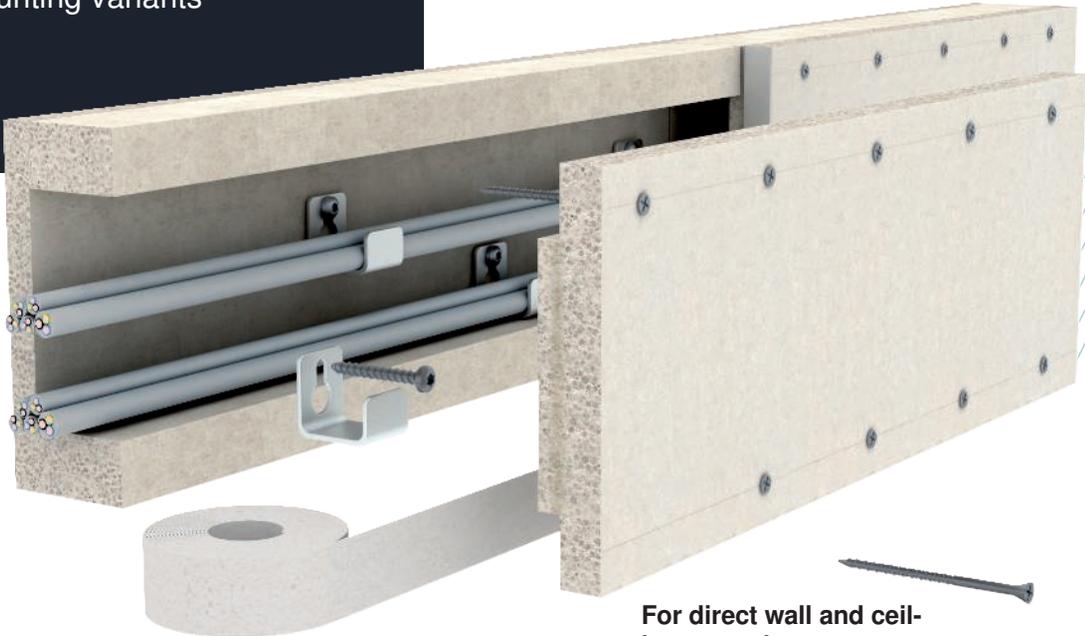
Material thicknesses

Classification	For direct wall and ceiling mounting	For suspended mounting
EI30 – EI60		
Wall/floor thickness [mm]	30/15	30/30
EI90		
Wall/floor thickness [mm]	40/20	50/50

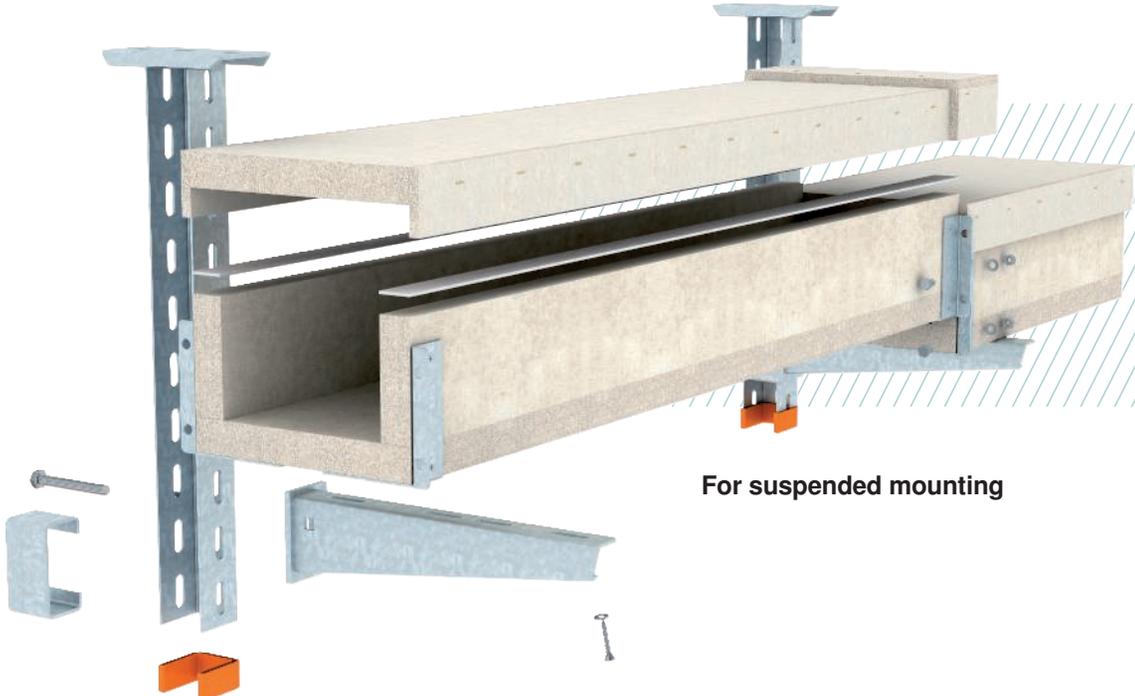


The PYROLINE® Con PLC fire protection duct system is available in:

- Two dimensions
- Two classifications
- Two mounting variants



For direct wall and ceiling mounting



For suspended mounting

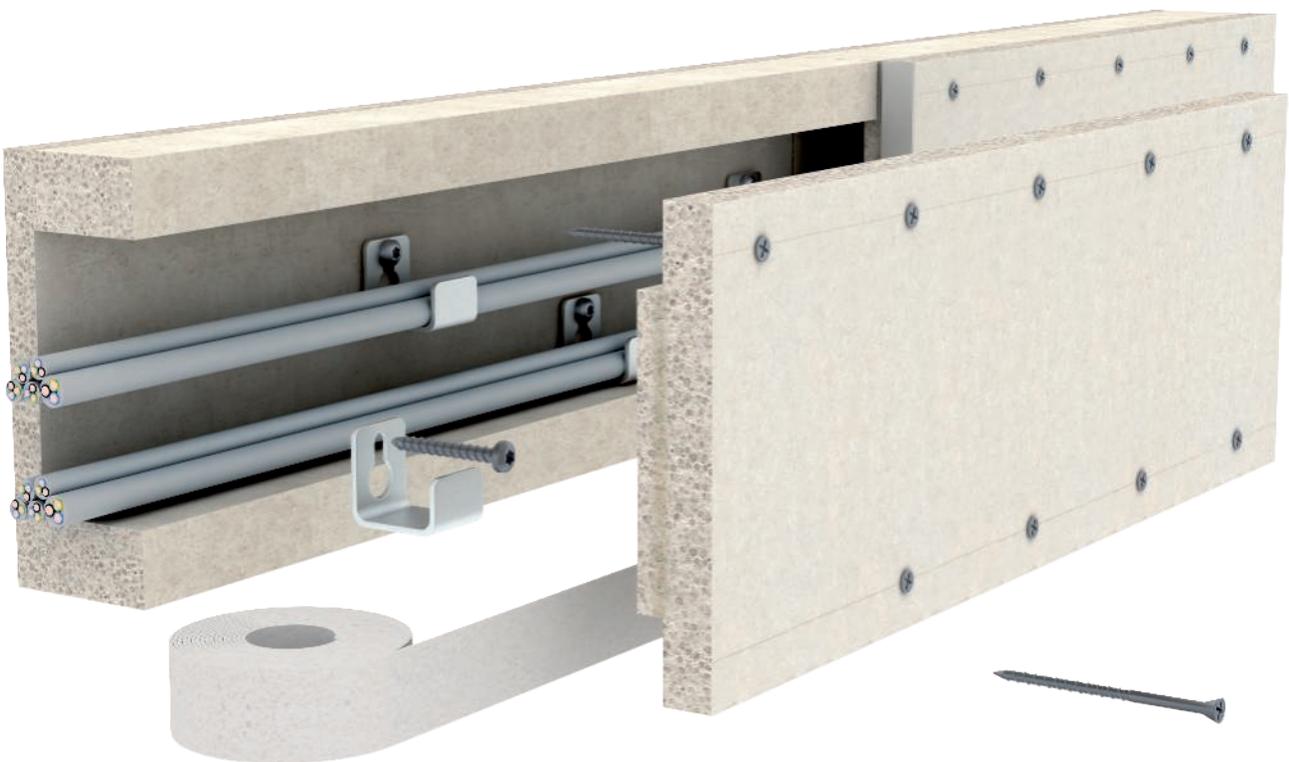
PYROLINE® Con D PLC

For direct wall and ceiling mounting

The PYROLINE® Con D PLC fire protection duct is mounted directly on walls and ceilings. Should other fittings be required, then they can be created easily and flexibly on-site, according to the requirements. The primed fire protection ducts can be painted or papered over, as required.

System benefits:

- The ducts can be integrated discreetly in the building
- Available in 2 different dimensions and classifications
- The cover is simply screwed onto the ducts
- Individual creation of fittings
- Can be perfectly adapted to existing cable paths



Installation principle



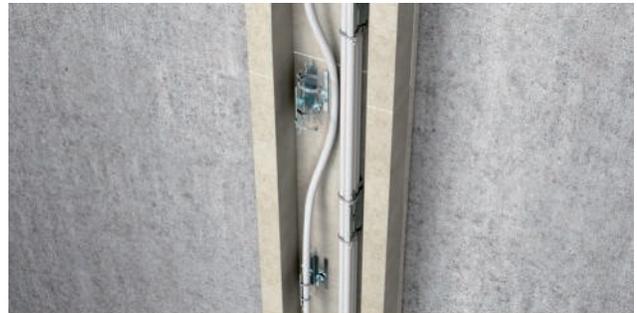
Flexible duct routing



Mounted fire protection duct on wall and ceiling



Mounted fire protection duct with cable outlets



Vertical cable routing using cable brackets



Wall connection with wall connection collar



Cable mounting with separating bracket and separating clamp



Combination of suspended fire protection duct and wall duct



Discreet installation

PYROLINE® Con S PLC

For suspended mounting

The PYROLINE® Con S PLC fire protection duct can be installed on wall brackets or on a support system suspended from the ceiling, for example using brackets or a pendulum suspension.

Have pipes or cables from other systems, such as heating, ventilation or sanitary systems already been routed? No problem – they can be elegantly passed under or by-passed using the PYROLINE® Con S PLC fire protection duct.

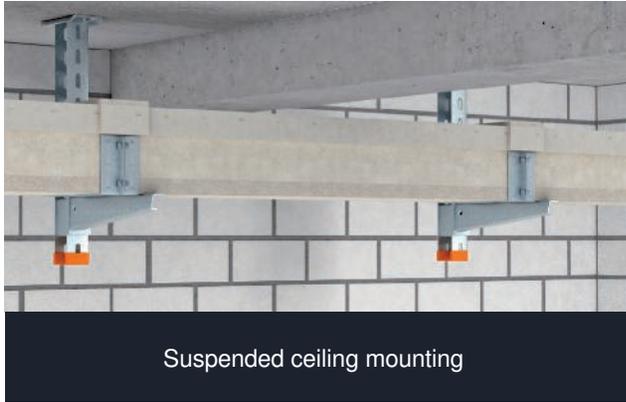
Mounted connectors permit quick connection of the duct sections directly on-site.

System benefits:

- Pre-mounted connection elements for quick, secure joint connections
- Preterminated fittings
- Suspension permits simple by-passing of installations of other units
- Available in 2 different dimensions and classifications
- Loosely attached cover allows easy retro-fitting



Installation principle



Suspended ceiling mounting



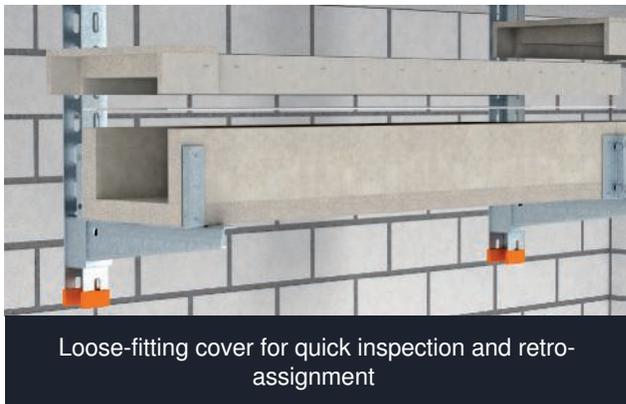
Wall mounting on brackets



Pre-mounted connection fastenings



Mounted T piece



Loose-fitting cover for quick inspection and retro-assignment



Jump

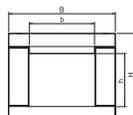


Wall connection with wall connection collar



Cables routed as individual cables or cable bundles

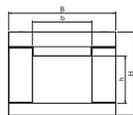
PYROLINE® Con D fire protection duct EI30 -EI60



Type	Dim.	Dim.	Dim.	Dim.	Length	Pack	Weight	Item no.
	b	h	B	H				
PLCD D060810	100	80	160	125	1000	1	1,000.000	7215800
PLCD D061220	200	120	260	165	1000	1	1,570.000	7215804

Fire protection duct made of water- and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501-1 for fireproof routing of cables in escape and rescue routes. EI30–EI60 classification as installation duct according to EN 13501-2 on the basis of tests according to EN 1366-5. When there is an internal fire load (cable fire), the duct prevents the spread of fire from one fire section to another. Mounting of the duct directly on walls or under ceilings.

PYROLINE® Con D fire protection duct EI90



Type	Dim.	Dim.	Dim.	Dim.	Length	Pack	Weight	Item no.
	b	h	B	H				
PLCD D090810	100	80	180	140	1000	1	1,370.000	7215810
PLCD D091220	200	120	280	180	1000	1	2,100.000	7215814

Fire protection duct made of water- and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501-1 for fireproof routing of cables in escape and rescue routes. EI90 classification as installation duct according to EN 13501-2 on the basis of tests according to EN 1366-5. When there is an internal fire load (cable fire), the duct prevents the spread of fire from one fire section to another. Mounting of the duct directly on walls or under ceilings.

Wall connection collar

Wall connection collar for PYROLINE® Con D EI60 fire protection duct



Type	Pack	Weight	Item no.
PLCD W060810	1	100.000	7215820
PLCD W061220	1	140.000	7215824

Wall connection collar for PYROLINE® Con D EI30–EI60 fire protection duct, consisting of fibre-glass light concrete, which is resistant to water and frost, for mounting on the fire protection duct in the area of wall and ceiling connections and wall and ceiling penetrations. Consists of 3 single plates.

Wall connection collar for PYROLINE® Con D EI90 fire protection duct

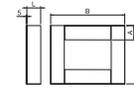


Type	Pack	Weight	Item no.
PLCD W090810	1	160.000	7215830
PLCD W091220	1	210.000	7215834

Wall connection collar for PYROLINE® Con D EI90 fire protection duct, consisting of fibre glass light concrete, which is resistant to water and frost, for mounting on the fire protection duct in the area of wall and ceiling connections and wall and ceiling penetrations. Consists of 3 single plates.

End piece for PYROLINE® Con D EI60 fire protection duct

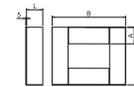
Type	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	B mm	H mm	L mm	A mm			
PLCD E060810	160	127	30	30	1	48.000	7215840
PLCD E061220	260	167	30	30	1	105.000	7215844



End piece for PYROLINE® Con D EI60 - EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for closing the duct ends.

End piece for PYROLINE® Con D EI90 fire protection duct

Type	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	B mm	H mm	L mm	A mm			
PLCD E090810	180	142	40	40	1	78.000	7215850
PLCD E091220	280	182	40	40	1	156.000	7215854



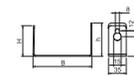
End piece for PYROLINE® Con D EI90 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for closing the duct ends.

Accessories

St FS

Separating bracket for wall mounting

Type	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	H mm	h mm	B mm	A mm			
PLCD-SB0810	35	20	76	25	25	6.900	7215480
PLCD-SB1220	60	65	116	50	25	13.300	7215484

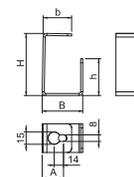


Separating bracket as installation aid for cable routing when mounting the PYROLINE® Con D fire protection duct on the wall. Mounting of the bracket directly on the fastening anchors of the fire protection duct.

St FS

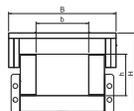
Separating clamp for ceiling mounting

Type	Dim.	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	H mm	h mm	B mm	b mm	A mm			
PLCD-SC0810	76	45	50	35	25	25	12.600	7215490
PLCD-SC1220	116	80	100	60	50	25	22.800	7215494



Separating clamp as installation aid for cable routing during ceiling mounting of the PYROLINE® Con D fire protection duct. Mounting of the clamp directly on the fastening anchors of the fire protection duct.

PYROLINE® Con S fire protection duct EI30 -EI60

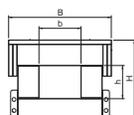


Type	Dim. h mm	Dim. b mm	Dim. H mm	Dim. B mm	Dim. Length mm	Pack m	Weight kg/100 m	Item no.
PLCS D060810	80	100	150	208	1000	1	1,370.000	7217860
PLCS D061220	120	200	190	308	1000	1	1,990.000	7217864

Fire protection duct made of water- and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501-1 for fireproof routing of cables in escape and rescue routes. EI30–EI60 classification as installation duct according to EN 13501-2 on the basis of tests according to EN 1366-5. When there is an internal fire load (cable fire), the duct prevents the spread of fire from one fire section to another.

Mounting of the duct on wall brackets or as ceiling mounting with suspended supports and brackets or on a U transverse profile suspended with threaded rods. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

PYROLINE® Con S fire protection duct EI90



Type	Dim. h mm	Dim. b mm	Dim. H mm	Dim. B mm	Dim. Length mm	Pack m	Weight kg/100 m	Item no.
PLCS D090810	80	100	190	248	1000	1	2,460.000	7217870
PLCS D091220	120	200	230	348	1000	1	3,780.000	7217874

Fire protection duct made of water- and frost-resistant fibre glass lightweight concrete of material class A1 according to EN 13501-1 for fireproof routing of cables in escape and rescue routes. EI90 classification as installation duct according to EN 13501-2 on the basis of tests according to EN 1366-5. When there is an internal fire load (cable fire), the duct prevents the spread of fire from one fire section to another.

Mounting of the duct on wall brackets or as ceiling mounting with suspended supports and brackets or on a U transverse profile suspended with threaded rods. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

90° bends

90° bend for PYROLINE® Con S EI60 fire protection duct



Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS B060810	100	80	208	150	310	1	690.000	7217880
PLCS B061220	200	120	308	190	410	1	1,180.000	7217884

90° bend for PYROLINE® Con S EI30–EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for the creation of horizontal changes of direction of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

90° bend for PYROLINE® Con S EI90 fire protection duct



Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS B090810	100	80	248	190	350	1	1,010.000	7217890
PLCS B091220	200	120	348	230	450	1	2,120.000	7217894

90° bend for PYROLINE® Con S EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for the creation of horizontal changes of direction of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

T piece for PYROLINE® Con S EI60 fire protection duct

Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Dim. I mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS T060810	100	80	208	150	460	310	1	870.000	7217900
PLCS T061220	200	80	308	190	560	410	1	1,390.000	7217904

T piece for PYROLINE® Con S EI30–EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost, for the creation of T branches of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.



T piece for PYROLINE® Con S EI90 fire protection duct

Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Dim. I mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS T090810	100	80	248	190	500	350	1	1,600.000	7217910
PLCS T091220	200	120	348	230	600	450	1	2,550.000	7217914

T piece for PYROLINE® Con S EI90 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost, for the creation of T branches of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

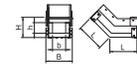


Vertical bend, rising

Rising vertical bend for PYROLINE® Con S EI60 fire protection duct

Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS VR060810	100	80	208	150	208	1	540.000	7217920
PLCS VR061220	200	120	308	190	225	1	820.000	7217924

Rising vertical bend for PYROLINE® Con S EI30–EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for the creation of vertical changes of direction (45°) of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.



Rising vertical bend for PYROLINE® Con S EI90 fire protection duct

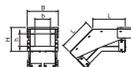
Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS VR090810	100	80	248	190	225	1	950.000	7217930
PLCS VR091220	200	120	348	230	241	1	1,450.000	7217934

Rising vertical bend for PYROLINE® Con S EI90 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for the creation of vertical changes of direction (45°) of the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.



Vertical bend, falling

Falling vertical bend for PYROLINE® Con S EI60 fire protection duct



Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS VF060810	100	80	208	150	207	1	560.000	7217940
PLCS VF061220	200	120	308	190	224	1	860.000	7217944

Falling vertical bend for PYROLINE® Con S EI30 - EI60 fire protection duct consisting of fibre glass light concrete which is resistant to water and frost for the creation of vertical changes of direction (45°) in the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

Falling vertical bend for PYROLINE® Con S EI90 fire protection duct



Type	Dim. b mm	Dim. h mm	Dim. B mm	Dim. H mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
PLCS VF090810	100	80	248	190	224	1	970.000	7217950
PLCS VF091220	200	120	348	230	240	1	1,470.000	7217954

Falling vertical bend for PYROLINE® Con S EI90 fire protection duct consisting of fibre glass light concrete which is resistant to water and frost for the creation of vertical changes of direction (45°) in the duct. Mounted connectors ensure quick mounting in situ, whilst loosely placed covers ensure quick inspection and reassignment.

Wall connection collar

Wall connection collar for PYROLINE® Con S EI60 fire protection duct



Type	Pack Piece	Weight kg/100 pc.	Item no.
PLCS W060810	1	80.000	7217960
PLCS W061220	1	116.000	7217964

Wall connection collar for PYROLINE® Con S EI30–EI60 fire protection duct, consisting of fibre glass light concrete, which is resistant to water and frost, for mounting on the fire protection duct in the area of wall connections and wall penetrations. Consists of 4 single plates.

Wall connection collar for PYROLINE® Con S EI90 fire protection duct

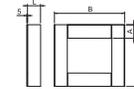


Type	Pack Piece	Weight kg/100 pc.	Item no.
PLCS W090810	1	100.000	7217970
PLCS W091220	1	134.000	7217974

Wall connection collar for PYROLINE® Con S EI90 fire protection duct, consisting of fibre glass light concrete, which is resistant to water and frost, for mounting on the fire protection duct in the area of wall connections and wall penetrations. Consists of 4 single plates.

End piece for PYROLINE® Con S EI60 fire protection duct

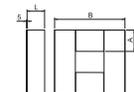
Type	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	H	B	L	A			
PLCS E060810	143	160	30	30	1	80.000	7217980
PLCS E061220	183	260	30	30	1	90.000	7217984



End piece for PYROLINE® Con S EI60 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for closing the duct ends.

End piece for PYROLINE® Con S EI90 fire protection duct

Type	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	H	B	L	A			
PLCS E090810	183	200	50	60	1	110.000	7217990
PLCS E091220	223	300	50	60	1	130.000	7217994



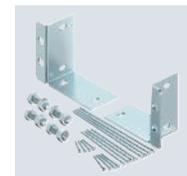
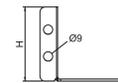
End piece for PYROLINE® Con S EI90 fire protection duct, consisting of fibre glass light concrete which is resistant to water and frost for closing the duct ends.

Accessories

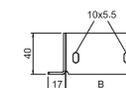
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KVS-2 connection set

Type	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	B	H			
KVS-2	70	72	1	2.000	7215383



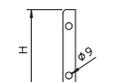
Connection set as replacement for the PYROLINE® Con S fire protection duct, type PLCS D060810 and type PLCS D090810, along with the matching fittings, consisting of one connection plate on the left and one on the right.



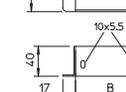
St FS

KVS-4 connection set

Type	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	B	H			
KVS-4	90	112	1	40.000	7215389

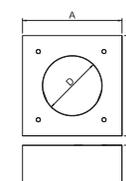


Connection set as spare part for the PYROLINE® Con S fire protection duct, type BSKH 091016, type 091026, type PLCS D061220 and type PLCS D091221, along with the matching fittings, consisting of one connection plate on the left and one on the right.



Doubler for PYROLINE® Con fire protection duct

Type	Dim.	Dim.	Pack Piece	Weight kg/100 pc.	Item no.
	A	D			
KAD-8040	80	40	1	28.000	7215464
KAD-10040	100	60	1	44.000	7215462



Doubler for running individual cables and cable bundles out of the side wall of the PYROLINE® Con D and PYROLINE® Con S fire protection duct.

Sealing strip



Type	Dimension		Length mm	Pack Piece	Weight		Item no.
	mm	mm			kg/100	pc.	
KDS-30	5x30x12500	12500		1	34.000		7215434
KDS-40	5x40x12500	12500		1	45.000		7215436
KDS-60	5x60x12500	12500		1	68.000		7215438

Self-adhesive sealing strip for mounting in the joints of the individual duct sections and for the seal between the base and cover of the PYROLINE® Con D, PYROLINE® Con S and PYROLINE® Fibre Optics fire protection ducts.

Fire protection duct mortar



Type	Contents		Pack Piece	Weight		Item no.
	kg			kg/100	pc.	
KTM	3.5		1	350.000		7215500

Dried mortar in a bucket for filling joints and small cracks when mounting the PYROLINE® Con D and PYROLINE® Con S fire protection ducts.

Insulation layer creator in a cartridge

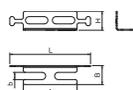


Type	Contents		Pack Piece	Weight		Item no.
	ml			kg/100	pc.	
DSX-K	300		1	50.000		7202300

Dispersion-based fire protection compound for interior areas, to fill residual joints and close openings. Approved material for the closing of core drill holes when feeding through single cables and for closing the annular gap when exiting cables from the PYROLINE® Con PLC fire protection duct. Material class DIN 4102 - B2, normally flammable. In dry, frost-free rooms, the compound can be stored at temperatures from +5 °C to +25 °C for up to 18 months in closed, upright original containers.

Cable bracket, vertical, for PYROLINE® fire protection ducts

St FS



Type	Dim.	Dim.	Dim.	Dim.	Dim.	Pack Piece	Weight		Item no.
	H	B	L	l	b		kg/100	pc.	
LHS 20	21	21	90	60	8	10	1.345		7215288
LHS 40	41	21	90	60	8	10	2.426		7215290
LHS 60	61	21	90	60	8	10	3.507		7215292

Universal cable bracket for the vertical installation of cables in PYROLINE® Con fire protection ducts made of fibre glass-reinforced, lightweight concrete, as well as PYROLINE® Rapid made of sheet steel with an internal coating. The holders are plugged over the head of the loosened fastening screw and then screwed tight to it. The cables can be fastened using cable ties on the lugs or in the slots of the holder. This safely supports the cable weight. Plan at least two cable brackets per metre during installation.

Countersunk head screw for PYROLINE® Con fire protection ducts

St G



Type	Dimension		Pack Piece	Weight		Item no.
	mm			kg/100	pc.	
KSS 4.0x55	4,0	x 55	50	0.340		7215400

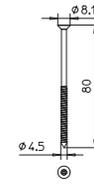
Countersunk head screw as spare part for PYROLINE® Con fire protection ducts, to fasten lids, end pieces, wall connection collars and doublers with a plate thickness of maximum 30 mm.

St G

Countersunk head screw for PYROLINE® Con fire protection ducts

Type	Dimension mm	Pack Piece	Weight kg/100 pc.	Item no.
KSS 4.5x80	4,5x80	50	0.500	7215412

Countersunk head screw as spare part for PYROLINE® Con fire protection ducts, to fasten lids, bend pieces, wall connection collars and doublers with a plate thickness of 40–60 mm.

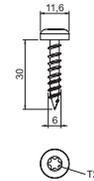


St GTP

Bolt for separating retainer fastening

Type	Dimension mm	Dim. L mm	Dim. D mm	Dim. d mm	Screw system	Pack Piece	Weight kg/100 pc.	Item no.
KRS 6x30	6x30	30	11.6	6	Toxx	200	0.276	3498100

Bolt with special milling ribs for PYROLINE® Con S fire protection ducts, to fasten separating retainers in the duct.



Metal spreading anchor

St G

Bolt tie BZ

Type	Thread	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
BZ 12-15-35/110	M12	110	25	10.320	3498350

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

European Technical Approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.



St G

Bolt tie BZ-U

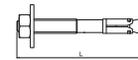
Type	Thread	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
BZ-U 10-10-30/90	M10	90	50	6.720	3498334

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

European Technical Approval ETA-99/0010, including characteristic values under fire exposure to fire resistance R 120.

Proof of suitability in the case of seismic impacts, categories C1 and C2.

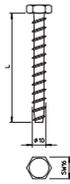
Shock approval by the Federal Office for Civil Protection in Bern, Switzerland.



Bolt tie

MMS-plus SS hexagonal tie, with pressed washer

St G



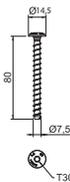
Type	Dimension mm	Dim. L mm	Drill hole Ø mm	SW mm	Pack Piece	Weight kg/100 pc.	Item no.
MMS+ SS 10x80	10x80	80	8	13	25	4.000	3498124

Bolt tie for direct mounting without additional anchors in cracked and uncracked concrete and masonry. With hex head drive and pressed washer to accept large loads. Suitable for fastening suspended loads from suspended supports and wall brackets.

Construction product tested according to EAD and CE mark, with European Technical Assessment (ETA) and proof of suitability. Load-bearing capacities under fire loads proven up to fire resistance class R120.

MMS-plus P round head tie, with panhead

St G



Type	Dimension mm	Drill hole Ø mm	Head Ø mm	Screw system	Pack Piece	Weight kg/100 pc.	Item no.
MMS+ P 7.5x80	7,5x80	6	14.5	Torx	50	1.600	3498272

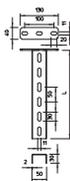
Bolt tie for direct mounting without additional anchors in cracked and uncracked concrete and masonry. With round head for universal fastenings. Torx drive T30.

Construction product tested according to EAD and CE mark, with European Technical Assessment (ETA) and proof of suitability. Load-bearing capacities under fire loads proven up to fire resistance class R120.

Mounting systems

US 3 support

St FT

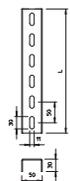


Type	Length mm	Material thickness mm	Tensile load kN	Pack Piece	Weight kg/100 pc.	Item no.
US 3 K 20 FT	200	2	5	1	50.500	6342351
US 3 K 30 FT	300	2	5	1	64.400	6342353
US 3 K 40 FT	400	2	5	1	78.300	6342355
US 3 K 50 FT	500	2	5	1	92.300	6342357
US 3 K 60 FT	600	2	5	1	106.200	6342359
US 3 K 70 FT	700	2	5	1	120.200	6342362
US 3 K 80 FT	800	2	5	1	134.100	6342364
US 3 K 90 FT	900	2	5	1	147.800	6342366
US 3 K 100 FT	1000	2	5	1	162.000	6342368
US 3 K 110 FT	1100	2	5	1	175.900	6342370
US 3 K 120 FT	1200	2	5	1	189.900	6342372

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

US 3 support

St FS



Type	Length mm	Material thickness mm	Pack Piece	Weight kg/100 pc.	Item no.
US 3 30 FS	300	2	1	40.000	6342304
US 3 40 FS	400	2	1	53.000	6342306

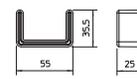
U support in fixed lengths. Dimensions 30 x 50 mm.

PE

End cap

Type	Colour	Pack Piece	Weight kg/100 pc.	Item no.
US 3 KS OR	Pastel orange	20	1.068	6338458

End cap to cover the ends of US 3 supports.

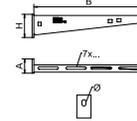


St FT

Wall and support bracket AW 15

Type	Width mm	H mm	Dim. A mm	Hole Ø mm	F in kN	Pack Piece	Weight kg/100 pc.	Item no.
AW 15 21 FT	210	60	40	11	1.5	30	24.000	6420680
AW 15 31 FT	310	65	40	11	1.5	30	38.400	6420710
AW 15 41 FT	410	70	40	11	1.5	30	54.000	6420745

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

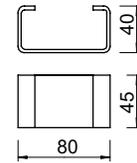


St FT

Spacer DSK 45

Type	Pack Piece	Weight kg/100 pc.	Item no.
DSK 45 FT	20	18.000	6416500

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

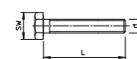


St F

Hexagonal bolt with nut and washer

Type	Dimen-sion mm	Dim. L mm	Dim. d mm	SW mm	Resist-ance grade	Pack Piece	Weight kg/100 pc.	Item no.
SKS 10x80 F	M 10x80	80	10	17	8.8	20	6.865	6418250

Hexagonal bolt for universal fixing of structure components.



St G

Threaded rod

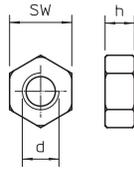
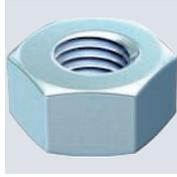
Type	Thread	Dim. d mm	Dim. L mm	Pack Piece	Weight kg/100 pc.	Item no.
TR M10 1M G	M10	10	1000	10	49.000	3141209

Threaded rod to DIN 976.



Hexagonal nut DIN 934

St G

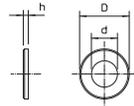
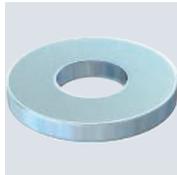


Type	Thread	SW mm	Dim. h mm	Dim. d mm		Pack	Weight	Item no.
						Piece	kg/100 pc.	
HN M10 G	M10	17	8.4	10		100	1.014	3400107

Hexagonal nut to DIN 934 with metric thread.

Washer

St G

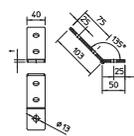


Type	Thread	Dim. d mm	Dim. D mm	Dim. h mm		Pack	Weight	Item no.
						Piece	kg/100 pc.	
WS M10 D20 G	M10	10.5	20	2		100	0.408	3402096

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

Mounting bracket, 45° with 3 holes

St FT

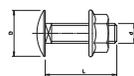
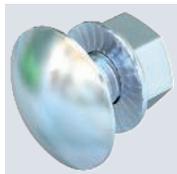


Type	Version	Shipping box Piece		Pack	Weight	Item no.
				Piece	kg/100 pc.	
GMS 3 VW 45 FT	45° angle	40		10	24.010	1124667

Mounting bracket with three holes to connect profile rails 41 x 41 mm and 41 x 21 mm at an angle of 45°.

Truss-head bolt with flange nut

St F

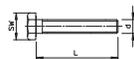


Type	Thread	Dimen- sion mm	Dim. L mm	Dim. d mm	Dim. D mm	Resist- ance grade		Pack	Weight	Item no.
								Piece	kg/100 pc.	
FRSB 6x16 F	M6x16	16	6	13.5	5.6			100	0.890	6406157

Truss-head bolt with square neck including flange nut.

Hexagonal bolt DIN 933

St ZL



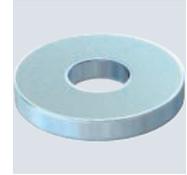
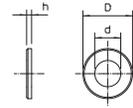
Type	Thread	Dimen- sion mm	Dim. L mm	Dim. d mm	Dim. SW mm		Pack	Weight	Item no.
							Piece	kg/100 pc.	
SKS M6x30 ZL	M6	M6x30	30	6	10		100	0.780	3156710

Hexagonal bolt according to DIN 933 with metric thread. Resistance grade at least 8.8.

St G

Type	Thread	Dim. d mm	Dim. D mm	Dim. h mm	Pack Piece	Weight kg/100 pc.	Item no.
WS M6 D28 G	M6	6.5	28	2.5	100	1.104	3402207

Washer of large outer diameter for universal use.

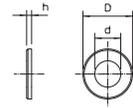


Washer ISO 7093

St G

Type	Thread	Dim. d mm	Dim. D mm	Dim. h mm	Pack Piece	Weight kg/100 pc.	Item no.
WS M10 D28 G	M10	11	28	2.5	100	1.020	3402223

Washer of large outer diameter for universal use.

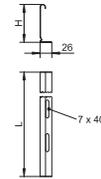


Washer ISO 7093

St FS

Type	Dim. H mm	Metal thickness mm	Dim. L mm	Pack m	Weight kg/100 m	Item no.
TSG 45 FS	45	0.75	3000	3	46.700	6062033

Barrier strip for separation of cables of different voltages or functions.

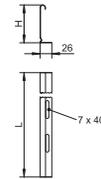


Barrier strip 45

St FS

Type	Dim. H mm	Metal thickness mm	Dim. L mm	Pack m	Weight kg/100 m	Item no.
TSG 60 FS	60	0.75	3000	3	55.700	6062068

Barrier strip for separation of cables of different voltages or functions.

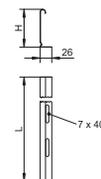


Barrier strip 60

St FS

Type	Dim. H mm	Metal thickness mm	Dim. L mm	Pack m	Weight kg/100 m	Item no.
TSG 85 FS	85	0.75	3000	3	70.300	6062114

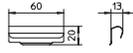
Barrier strip for separation of cables of different voltages or functions.



Barrier strip 85

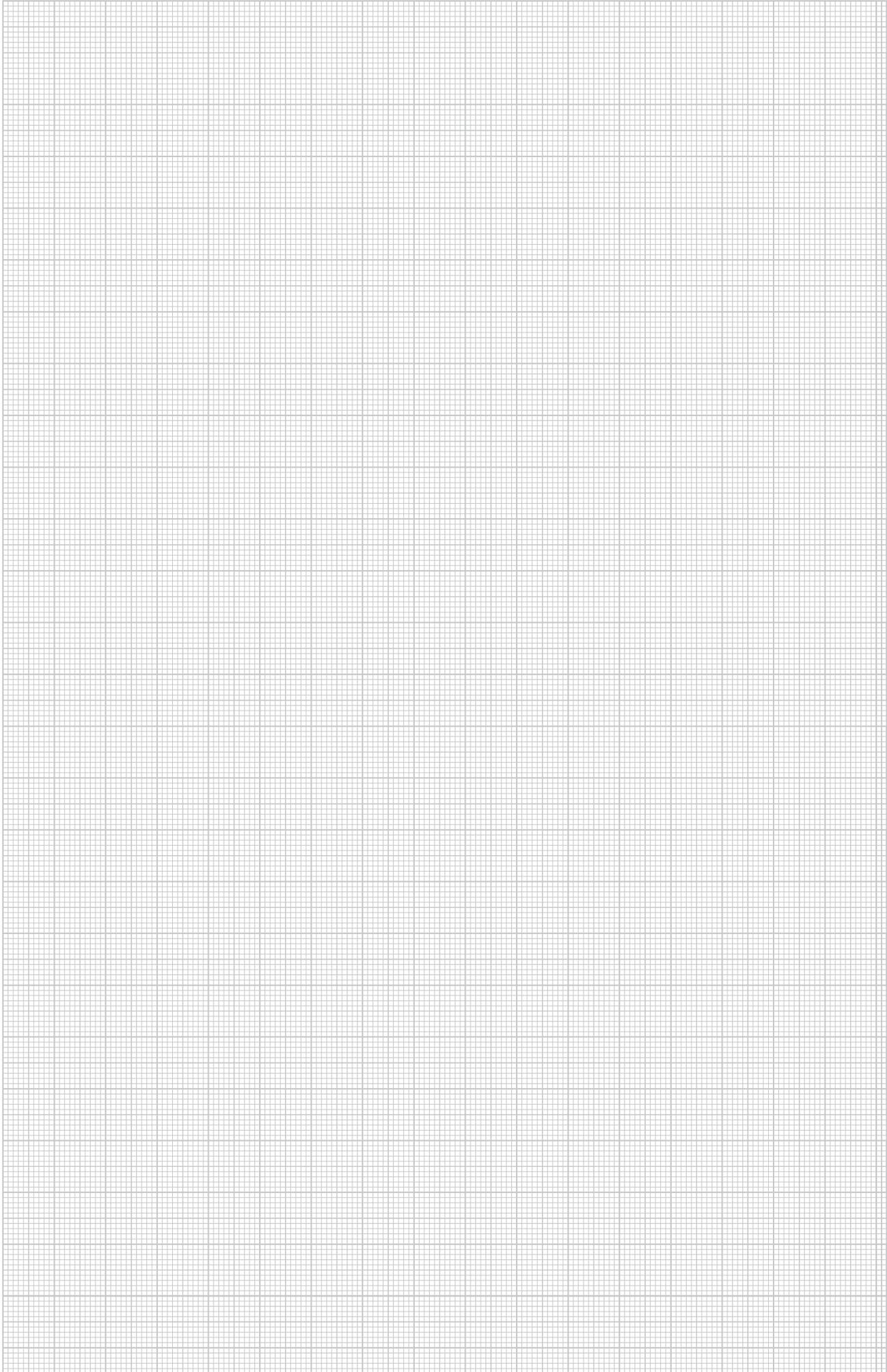
Barrier strip connector

VA 2B



Type	Pack Piece	Weight kg/100 pc.	Item no.
TSGV A2	10	0.899	6067970

Barrier strip connector for screwless connection of the TSG barrier strip in all side heights.



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Building Connections

