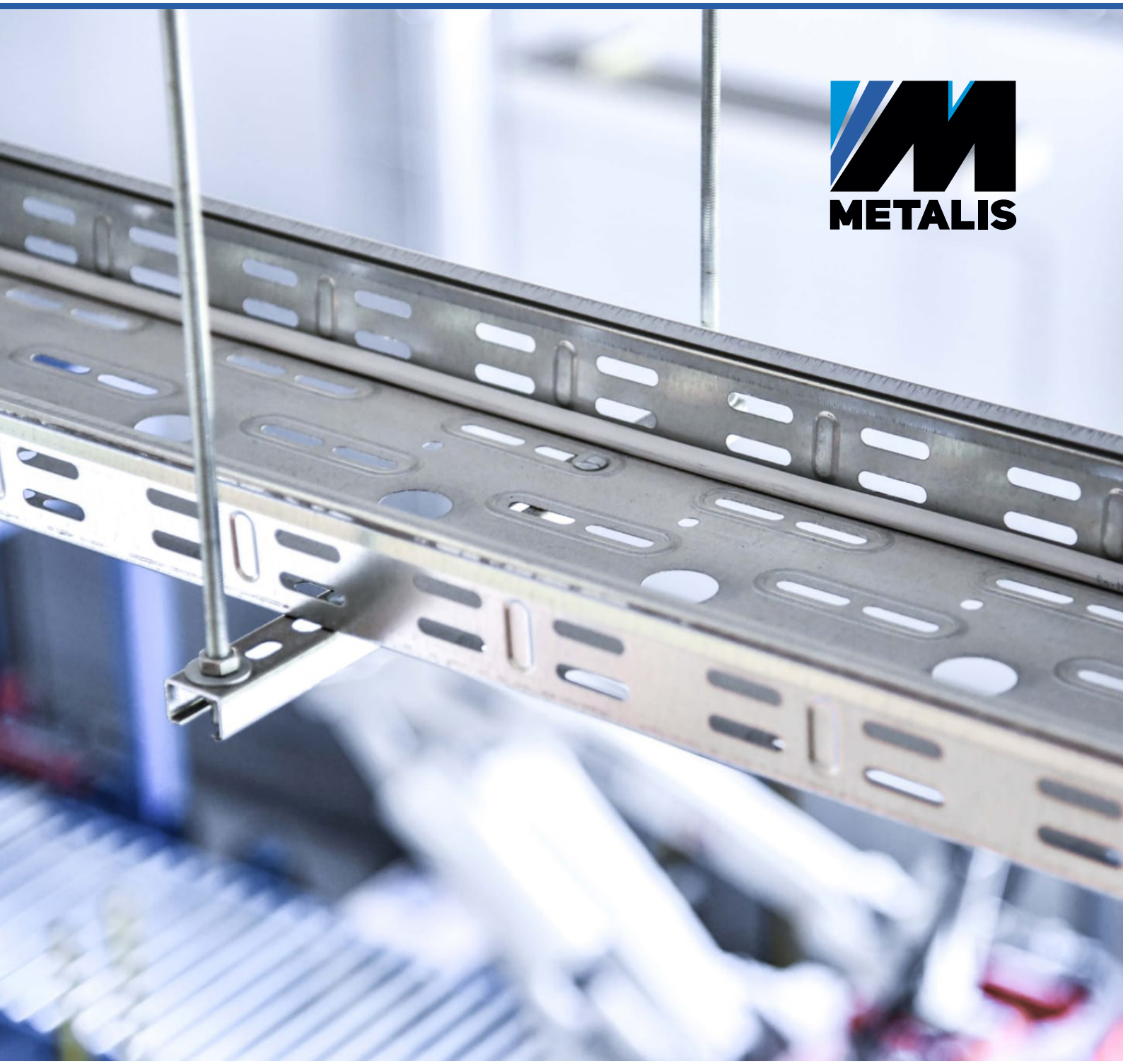


METALIS

CABLE SUPPORTS WITH ACCESSORIES

1 INTRODUCTORY REMARKS

Introduction

The full range of activities we underundertake as a company across all segments of business primarily consists of a focus on the customer and meeting the customer's needs. We adhere to our business and excellence philosophy through the following values:

- we continuously tend to the development and improvement of our business system, technology and equipment;
- we continuously strive to meet customers' expectations, needs and wishes;
- we continuously monitor and improve our quality management system through internal and external assessments;
- we train and motivate staff by increasing their level of knowledge and awareness of how high quality ensures a higher market share for the company and thus better prospects for every employee;
- we continuously build trust and develop partner relationships with customers and suppliers, and strive for business excellence; and
- we are guided by the principles of corporate social responsibility through ethical business and contributing to economic development, improving the lives of employees and their families, as well as of the community and society as a whole.



Co-funded by
the European Union

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1. CABLE SUPPORTS WITH ACCESSORIES

1. Introductory remarks

Cable supports with accessories, i.e. perforated cable trays and cable ladders, are used for laying out cables for different purposes: transmission, signalling, control, etc.

They are largely installed in industrial plants and power plants, while other applications sites are hospitals, airports, sports halls, stadiums, department stores, tunnels, etc.

We manufacture them in an industrial setting, in batches, on a modular basis, and each product group in this catalogue is a prefabricated system for rational and cost-efficient cable distribution from the power supply point to the point of power use. Continuous improvements in performance, cross-sectional characteristics, higher load capacity and reduced installation costs make our system cost-effective and adaptable.

The materials used in the manufacture of cable supports with accessories are: steel (HRN EN 10130 and HRN EN 10025) and stainless steel (HRN EN 10088).

Because of customers' need to reduce the installation times as much as possible, our engineers have developed a completely new type of cable support, the main feature of which is quick and easy installation, as the supports are connected using shape-based connections and not exclusively using a bolt connection.

In the case of special dimensions and performance or special structures for certain purposes (e.g. nuclear power plants), we manufacture cable supports and accessories according to the customer brief.

The use of cable supports in installations allows for:

- precise distribution layout design;
- easy and accurate creation of cost statements;
- easier and quicker installation;
- clear supporting section layout;
- high-quality protection; and
- easy maintenance.



2. Technical information

2.1. Surface protection

All components of the Metalis cable supporting systems, made of steel sheeting, are protected, as required by the customer or installation site conditions, in one of the following ways.

- Galvanisation is done by continuously applying a protective zinc coating with a thickness of about 20 µm (a total of 275 g/m^2 for both sides of the sheeting), the so-called Sendzimir process according to HRN EN 10346.

  Protection marking: **Sc**

- Galvanisation is done using the hot-dip process, with a protective zinc coating with a thickness of 50–70 µm (from 350 to 500 g/m^2). The thickness and quality of the protective coating correspond to the Regulation on Technical Measures and Conditions for the Protection of Steel Structures Against Corrosion. Surface protection is applied in accordance with the following standards: HRN EN ISO 1461 or ASTM-A 123. Protection marking: **Tc**

- Plastic coating, i.e. electrostatic spraying of various artificial resin powders and their polymerisation at between 170°C and 210°C, is used, with a protective coating thickness of 60–80 µm. The powder is applied to the steel or zinc-coated material, in the desired colour and tone.

  Protection marking: **Pl**

- Dyeing and varnishing using a base and finishing coating is used, in the desired colour and tone.

  Protection marking: **Tb** and **Zb**

- Electro-galvanisation is done with a protective coating with a thickness of 9–12 µm, in accordance with HRN EN ISO 2081.

  Protection marking: **Gc**

Steel sheeting protected using the Sendzimir process (Sc) is referred to as commercial and galvanised sheeting. Such galvanised sheeting has the following special characteristics:

- High uniformity of the thickness of the zinc coating over the whole width of the sheet, on both sides
- Elasticity and good adhesion of the coating
- Self-protection capability at the cut points made during the technological process of manufacturing cable support components due to electrochemical differences in the potential of iron and zinc. If moisture appears at a cut point, it behaves like an electrolyte and a local galvanic cell is created. Zinc has negative potential with regards to iron and becomes an anode. This results in a lengthy process by which zinc protects iron against corrosion by way of cathode protection.
- Self-protection capability in the event of any mechanical damage to the zinc coating, by way of the same principle of cathode protection.

The self-protection capability at the cut points, under normal atmospheric conditions, is satisfactory in sheeting with a thickness not exceeding 3 mm, so no additional protection is required.
The protection of cable supports and accessories using the hot-dip process (Tc) under the same atmospheric conditions is more durable than galvanised sheeting and is used in particular where there is presence of chemical fumes and sea air effects, as well as in an urban or less-polluted industrial environment. With both types of protection, i.e. (Sc) and (Tc), zinc has the beneficial property of forming, under atmospheric influence, a layer consisting mainly of zinc carbonate and hydrated zinc oxide, the so-called 'white rust', which protects the zinc and thus also the surface of the iron (steel). The layers of zinc are subjected to wear under the effect of the chemical composition of the atmosphere, but at the same time, they are continuously replenished with a reserve of zinc from the coating applied to the iron. In this way, the zinc coating corrodes and is subjected to wear in the process, but the presence of corroded layers increasingly slows down the corrosion process and its progress is kept to a minimum, allowing successful protection of the iron surface for many years.

Protection by plastic coating (Pl) is characterised by a special physiological and bacterial resistance, which is why it is used particularly in the food industry, using an epoxy powder. Electrostatic spraying of such a powder on galvanised surfaces produces combined complementary protection. Its durability is 2–3 times greater than that of the solely galvanised surface. It is more mechanically resistant (stronger) and chemically very stable, so it is used in particularly aggressive environments.

2. TECHNICAL INFORMATION

For the correct choice of protection type (epoxide, polyester or blend of epoxide and polyester), the exact conditions at the installation site must be established. Application of protection by spraying is not always possible. Plastic-coated components do not conduct electricity, so they cannot be used in protection systems.

Protection by dyeing (Tb) and varnishing (Zb) is used in cases of special requirements for interior use, i.e. in cases of more aggressive environments where zinc protection is not satisfactory. The protection type is determined according to the customer's request and in accordance with the Regulation on Technical Measures and Conditions for the Protection of Steel Structures Against Corrosion, or any other standard, such as: HRN EN ISO 12944.

Electro-galvanisation protection (Gc) is used for fastening bolts and clamps. Standard protection of our components is achieved through the use of galvanised sheeting, and for any components thicker than 3 mm, by hot-dip galvanisation.

2.2. Durability of zinc coating

The average annual loss of zinc coating under different atmospheric conditions (Central and Western Europe), expressed as zinc loss in g/m², is:

- in a rural atmosphere: 7–15 g/m²;
- in an urban atmosphere: 20–40 g/m²;
- in the presence of sea air: 20–50 g/m²; and
- in a particularly polluted atmosphere: 40–80 g/m².

This data is used to calculate the durability over time of zinc coating (137.5 g/m²) on galvanised sheeting (rounded):

- in a rural atmosphere: 20–9 years;
- in an urban atmosphere: 7–3.5 years;
- in the presence of sea air: 7–3 years; and
- in a particularly polluted atmosphere: 3.5–2 years.

In general, the lifetime of zinc protection depends on the aggressiveness of the environment at the site of installation and is relatively long if the environmental pH value is between 6 and 12. A pH value of less than 6 and more than 12 requires corrosion protection by dyeing and varnishing, plastic-coating or protection combined with galvanisation.

2.3. Load capacity

The load capacity diagram contains information on the maximum permissible load capacity, so the weight of the person carrying out the installation should be potentially taken into account when using this information (if the supporting section is walkable). Information on the maximum permissible load capacity was obtained by testing according to HRN EN 61537:2007.

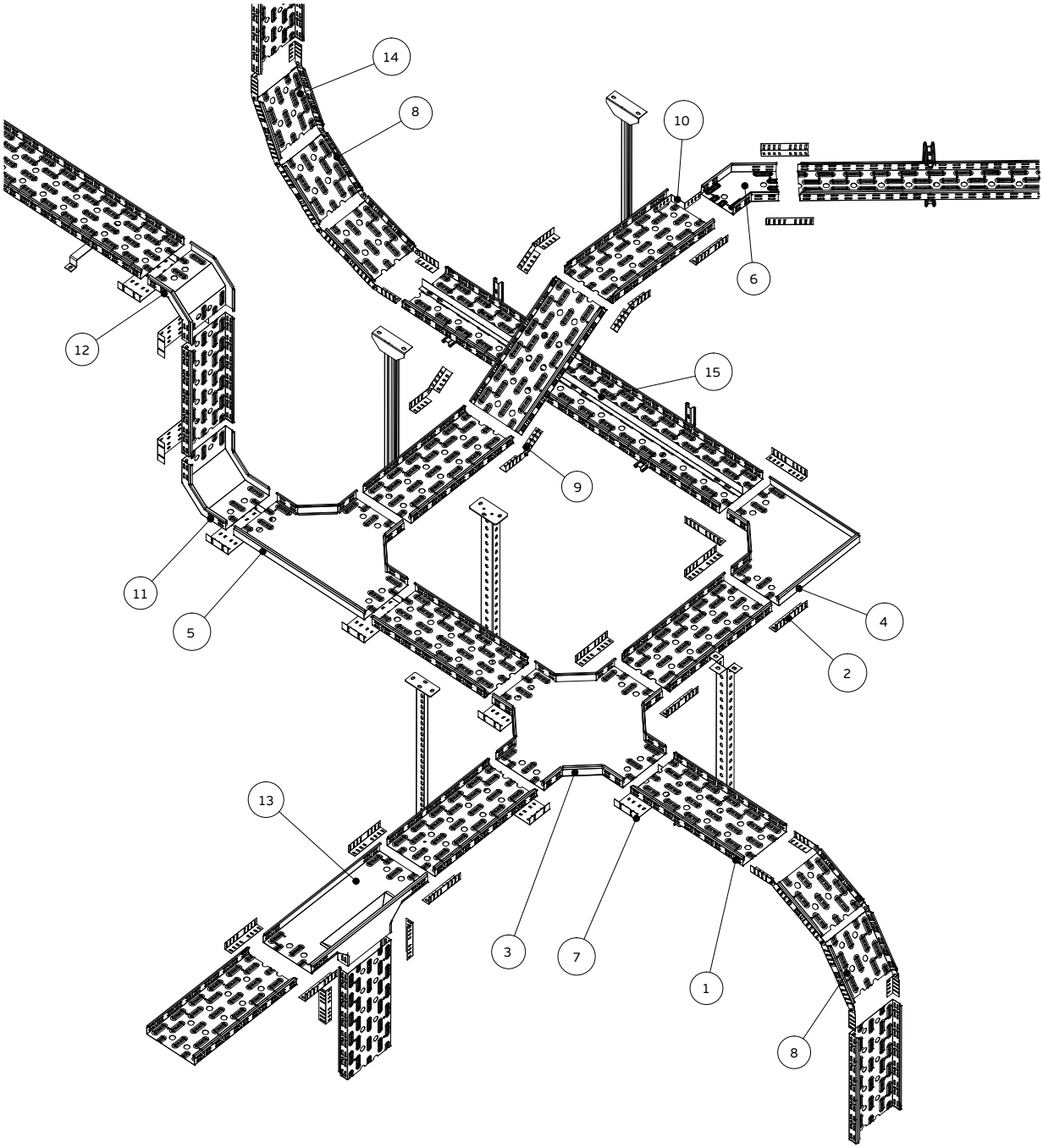




3.

CABLE SUPPORTS WITH ACCESSORIES

3.1. Perforated cable trays and connectors



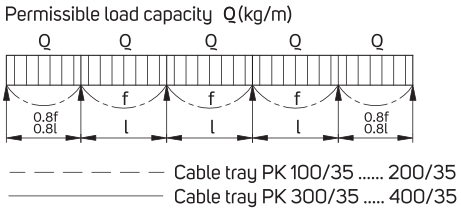
Pos.	Component name	Pos.	Component name	Pos.	Component name
1	PKU tray	6	SHSU connector	11	VUSU connector
2	RSU-60 connector	7	RSU connector	12	VVSU connector
3	KSU connector	8	LSU connector	13	SSU connector
4	USU connector	9	SVSU connector	14	LSS segment
5	TSU connector	10	ZU reducer	15	UKRU stiffener

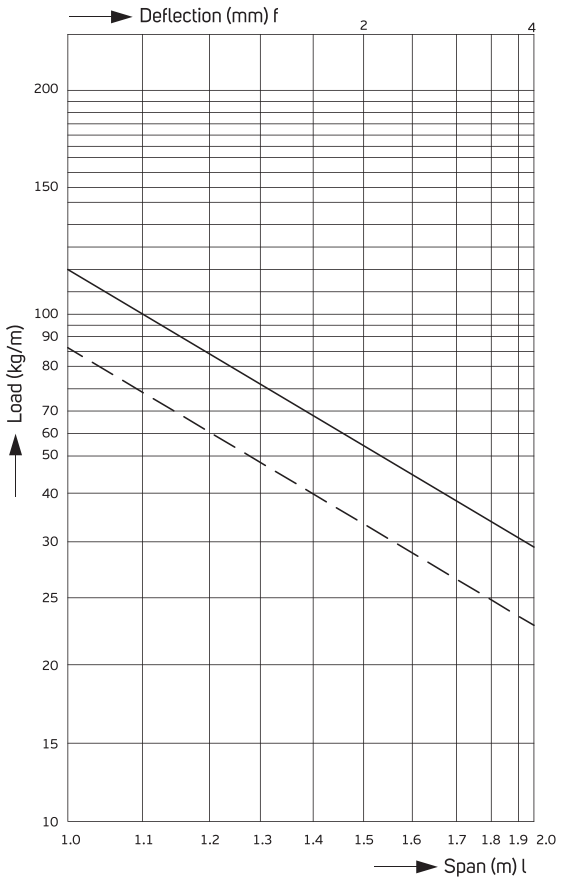
3.1.1. Perforated cable trays and connectors – PK 35

Perforated cable trays 35 mm

PVC cables PPOO 1 kV NYY 0.6–1 kV			PK-100		PK-200		PK-300		PK-400	
Guide × section	Φ outer	kg/m	Cable		Cable		Cable		Cable	
			pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x1.5	12.5	0.23	15	3.5	31	7.3	47	11.0	63	14.8
4x2.5	14.0	0.31	12	3.7	25	7.9	38	12.0	50	15.8
4x4	15.5	0.42	10	4.2	20	8.4	30	12.6	40	16.8
4x6	17.0	0.53	8	4.2	16	8.5	25	13.3	33	17.5
4x10	19.5	0.75	5	3.8	13	9.8	20	15.1	27	20.4
4x16	22.5	1.10	4	4.4	10	11.0	15	16.5	20	22.0
4x25	28.0	1.68	3	5.0	7	11.8	10	16.8	14	23.5
4x35 S	25.5	1.76	3	5.3	6	10.5	8	14.1	12	21.1
4x185 S	52.5	8.42	2	16.8	3	25.3	4	33.7	6	50.5
4x240	61.0	10.8	1	10.8	2	21.6	4	43.2	5	54

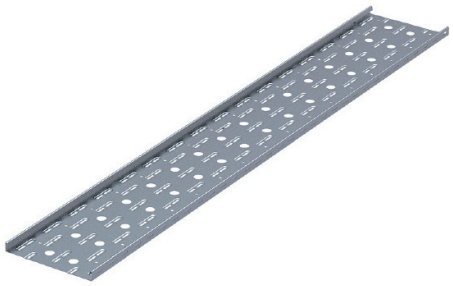
Perforated cable trays 35 mm permissible load capacity (Q = kg/m)

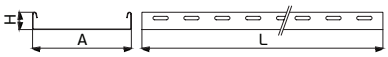




PERFORATED CABLE TRAYS AND CONNECTORS

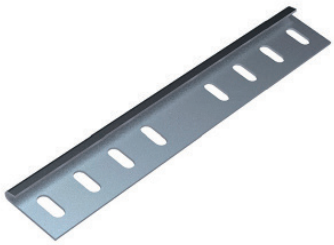
Perforated cable tray – PK 35



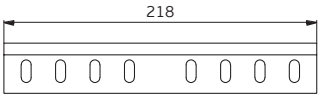


LABEL	A	H	L	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PK-100/35	100	35	2000	0.70	1.10	100297
PK-200/35	200	35	2000	0.70	1.63	100298
PK-300/35	300	35	2000	0.90	2.91	100299
PK-400/35	400	35	2000	0.90	3.53	100300

RS-35 flat connector

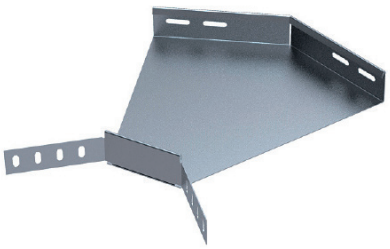


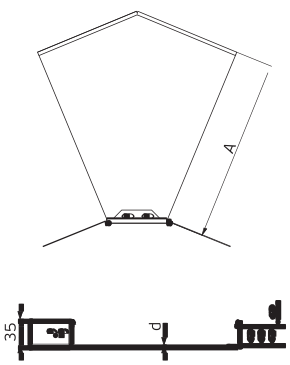
It is connected on the inner side of the cable tray using an VE-03 bolt.



LABEL	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	kg/m	
RS-35	1.50	0.10	100332

SHS-35 45° angle connector

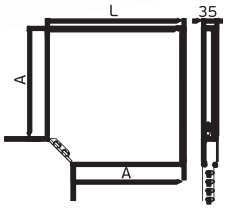




LABEL	A	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
SHS-100/35	100	35	0.70	0.80	113629
SHS-200/35	200	35	0.70	1.00	113630
SHS-300/35	300	35	0.90	2.20	113631
SHS-400/35	400	35	0.90	3.10	113632

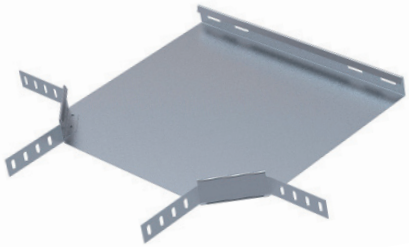
US-35 90° angle connector

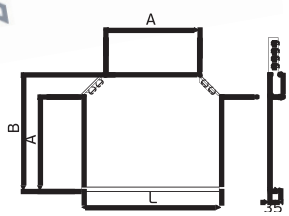




LABEL	A	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
US-100/35	100	35	0.70	0.80	100317
US-200/35	200	35	0.70	1.00	100318
US-300/35	300	35	0.90	2.20	100319
US-400/35	400	35	0.90	3.10	100320

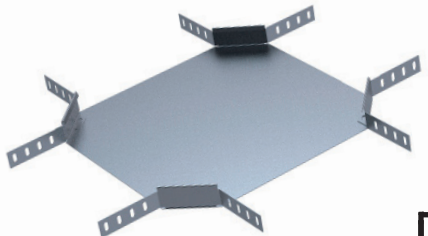
TS-35 T connector

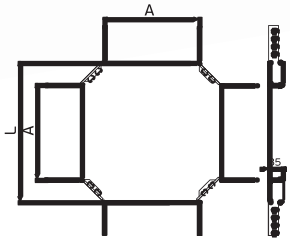




LABEL	A	B	L	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	mm	kg/m	
TS-100/35	100	166	233	35	0.70	1.30	100321
TS-200/35	200	266	333	35	0.70	1.90	100374
TS-300/35	300	366	433	35	0.90	3.90	100322
TS-400/35	400	466	533	35	0.90	5.00	100323

KS-35 cross connector

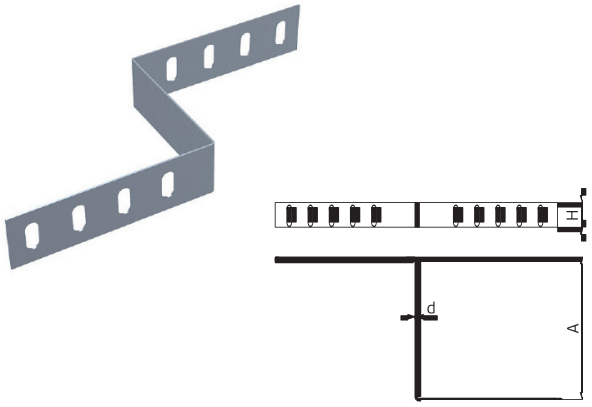




LABEL	A	L	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
KS-100/35	100	233	35	0.70	1.70	100324
KS-200/35	200	333	35	0.70	2.60	100325
KS-300/35	300	433	35	0.90	4.60	100326
KS-400/35	400	533	35	0.90	6.20	100327

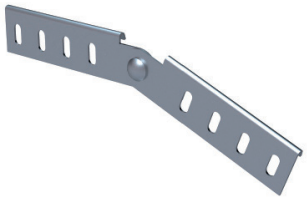
PERFORATED CABLE TRAYS AND CONNECTORS

Z-35 reducer



LABEL	A	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
Z-100/35	100	30	1.25	0.11	100335
Z-200/35	200	30	1.25	0.14	100336
Z-300/35	300	30	1.25	0.18	100337
Z-400/35	400	35	0.90	3.53	100300

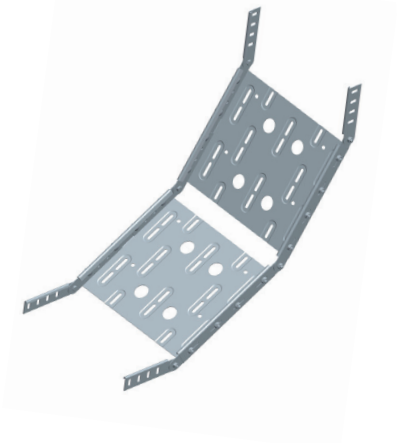
SVS-35 vertical turn connector

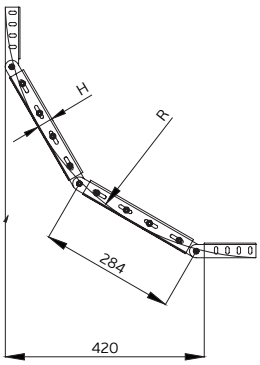


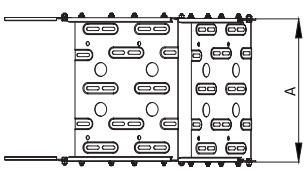
It is connected on the inner side of the cable tray using an VE-03 bolt.

LABEL	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	kg/m	
SVS-35	1.50	0.18	100333

LS-35 arc connector



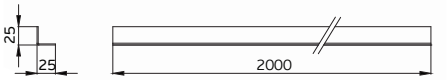




LABEL	A	H	R	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
LS-100/35	100	35	544	0.70	1.62	133760
LS-200/35	200	35	544	0.70	1.90	133761
LS-300/35	300	35	544	0.90	2.48	133762
LS-400/35	400	35	544	0.90	2.84	133763

UKR-35 stiffener

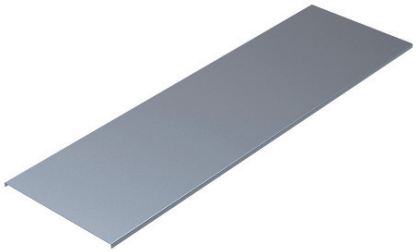




A stiffener is installed where there is a need to stiffen and strengthen the cable tray because of higher loads. It is fastened to the cable tray using two to three VE-03 fasteners.
A stiffener also serves to separate two or more cables.

LABEL	SC		
	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m	
UKR-35	1.50	0.55	100334

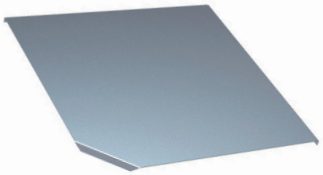
Cable tray cover PPK L = 2000

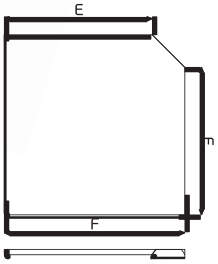




LABEL	A	L	SC		
			D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
PPK-100	100	2000	0.55	1.06	100225
PPK-200	200	2000	0.55	1.94	100226
PPK-300	300	2000	0.70	3.58	100227
PPK-400	400	2000	0.70	4.70	100228

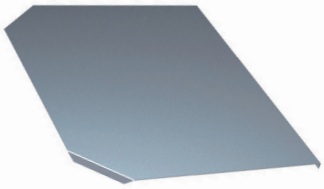
PUS-35 90° connector cover

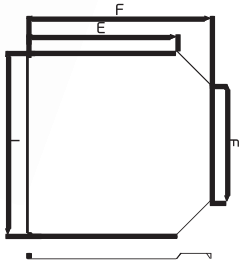




LABEL	E	F	SC		
			D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
PUS-100	105	168	0.50	0.20	100309
PUS-200	205	268	0.50	0.75	100310
PUS-300	305	368	0.70	1.50	100311
PUS-400	405	468	0.70	2.30	100312

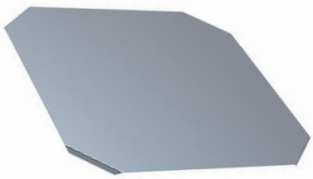
PTS-35 T connector cover

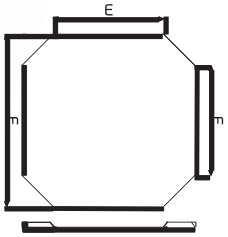




LABEL	SC					
	E	F	L	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PTS-100	105	168	233	0.55	0.26	100305
PTS-200	205	268	333	0.55	0.60	100306
PTS-300	305	368	433	0.70	1.30	100307
PTS-400	405	468	533	0.70	2.03	100308

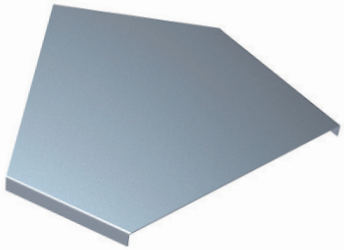
PKS-35 cross connector cover

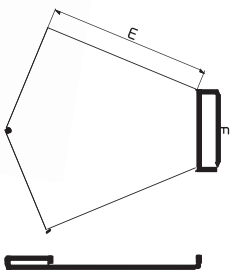




LABEL	SC				
	E	F	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
PKS-100	105	233	0.55	0.64	100313
PKS-200	205	333	0.55	0.71	100314
PKS-300	305	433	0.70	1.50	100315
PKS-400	405	533	0.70	2.27	100316

PSHS-35 45° connector cover





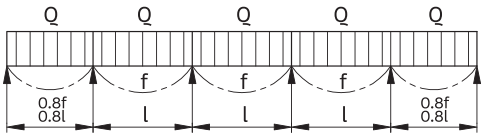
LABEL	SC				
	E	F	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
PSHS-100	105	95	0.55	0.15	113633
PSHS-200	205	95	0.55	0.30	113634
PSHS-300	305	95	0.70	0.66	113635
PSHS-400	405	95	0.70	0.78	113636

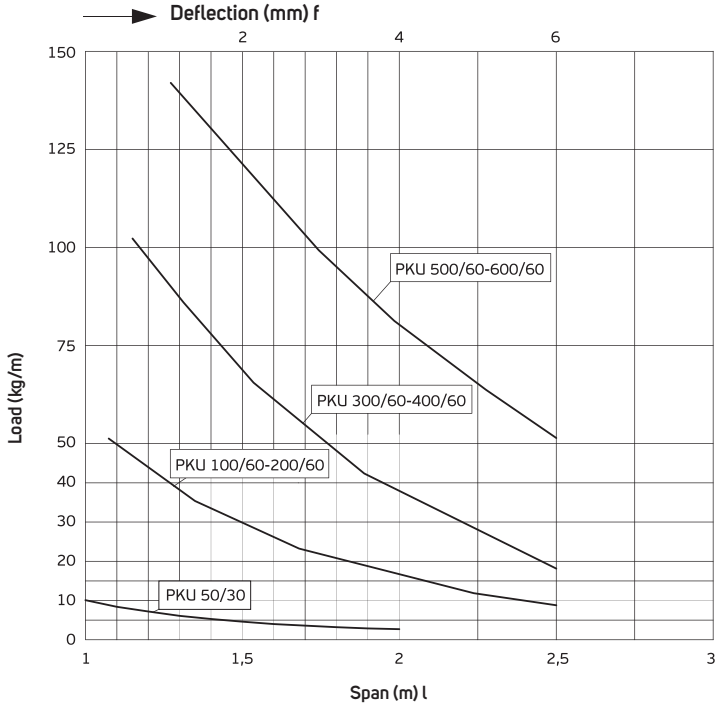
3.1.2. Perforated cable trays and connectors – PKU 60

Perforated cable trays (with insertion) 60 mm

PVC cables PPOO 1 kV NYY 0.6–1 kV			PKU-100		PKU-200		PKU-300		PKU-400		PKU-500		PKU-600	
Guide × section	Φ outer	kg/m	Cable		Cable		Cable		Cable		Cable		Cable	
			pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14.0	0.31	24	7.6	43	15.5	65	20.5	85	26.8	110	34.7	130	40.0
4x6	17.0	0.53	16	8.5	29	15.4	43	22.8	58	30.7	72	38.2	86	45.6
4x10	19.5	0.75	12	9.1	23	17.4	34	25.7	46	34.7	58	43.8	68	51.3
4x16	22.5	1.10	8	8.8	17	18.7	26	28.6	35	38.5	43	47.3	52	57.2
4x25	28.0	1.68	6	10.1	12	20.2	18	30.2	24	40.3	31	52.1	36	60.5
4x50 S	31.0	2.50	5	12.5	10	25.0	14	35.0	18	45.0	23	57.5	28	70.0
4x95 S	39.0	4.42	3	13.3	5	22.1	7	30.9	10	44.2	12	53.0	14	61.9
4x120	41.5	5.46	2	10.9	3	16.4	5	27.3	6	32.8	9	49.1	10	54.6
4x185 S	52.5	8.42	2	16.8	3	25.3	4	33.7	6	50.5	7	58.9	8	67.4
4x240	61.0	10.80	1	10.8	2	21.6	4	43.2	5	54.0	6	64.8	7	75.6

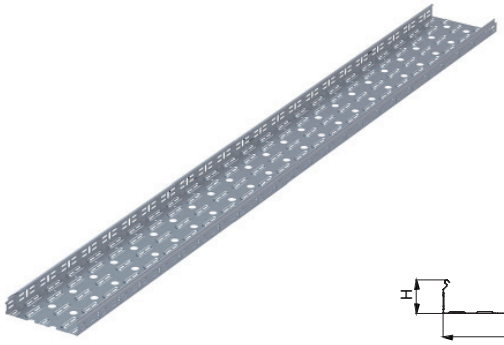
Permissible load capacity Q (kg/m)

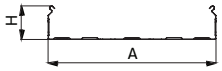




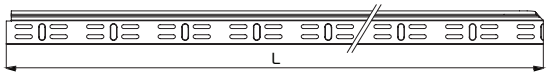
PERFORATED CABLE TRAYS AND CONNECTORS

PKU-60 perforated cable tray



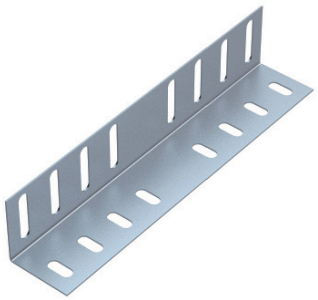


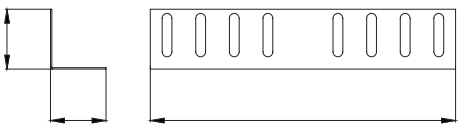
For trays made from materials 1.4404 and 1.4571 upon request



LABEL	A	H	SC				TC				INOX			
			L	D	MASS	CATA-LOGUE NUMBER	L	D	MASS	CATA-LOGUE NUMBER	L	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	mm	kg/m		mm	mm	kg/m	
PKU-50/30	50	30	3000	0.55	0.50	105896	2000	0.80	1.2	106620	3000	0.50	0.45	111068
PKU-100/60	100	60	3000	0.70	1.23	105897	2000	0.80	2	105625	3000	0.60	1.05	106868
PKU-200/60	200	60	3000	0.70	1.80	105898	2000	0.80	3.7	105626	3000	0.60	1.54	110483
PKU-300/60	300	60	3000	0.90	3.1	105899	2000	1.00	6.2	104101	3000	0.80	2.52	110550
PKU-400/60	400	60	3000	0.90	3.53	106831	2000	1.00	7	104102	3000	0.80	3.14	110551
PKU-500/60	500	60	2000	1.25	4.40	112654	2000	1.25	10.76	106030	3000	1.00	3.52	115258
PKU-600/60	600	60	2000	1.25	5.10	110449	2000	1.25	12.78	112545	3000	1.00	4.08	125749

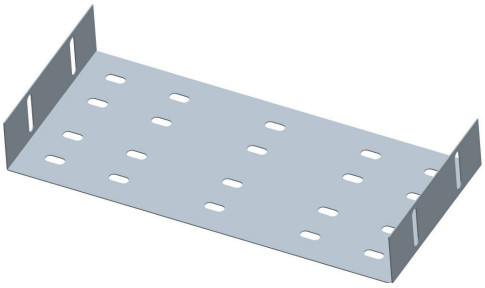
RSU-60 flat connector

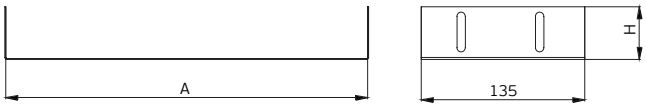




LABEL	SC			TC			INOX		
	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m		mm	kg/m		mm	kg/m	
RSU-60	0.90	0.16	105920	1.25	0.20	107299	0.80	0.14	109953

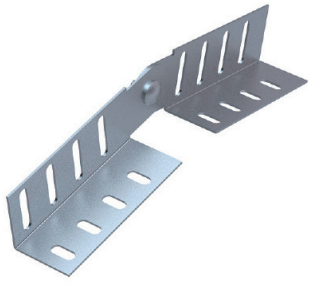
RSU flat connector





LABEL	A	H	SC				TC				INOX			
			L	D	MASS	CATA-LOGUE NUMBER	L	D	MASS	CATA-LOGUE NUMBER	L	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	mm	kg/m		mm	mm	kg/m	
RSU-50/30	50	10	140	0.55	0.04	106634	140	0.8	0.07	112563	140	0.5	0.04	114877
RSU-100/60	100	44	135	0.7	0.14	113098	135	0.8	0.15	113197	135	0.6	0.12	127832
RSU-200/60	200	44	135	0.7	0.21	113099	135	0.8	0.2	113198	135	0.6	0.18	121504
RSU-300/60	300	44	135	0.9	0.36	133057	135	1	0.38	113199	135	0.8	0.32	121557
RSU-400/60	400	44	135	0.9	0.46	122862	135	1	0.51	113200	135	0.8	0.41	121847
RSU-500/60	500	44	182	1.25	1	120394	182	1.25	1	112542	182	1	0.8	115259
RSU-600/60	600	44	182	1.25	1.17	119239	182	1.25	1.23	112546	182	1	0.94	128157

SVSU-60 vertical turn connector



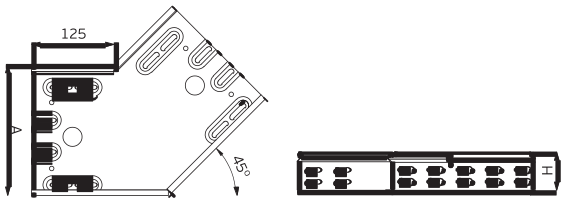
The SVSU connector serves to connect sections across two levels, i.e. to go from horizontal to vertical distribution.

LABEL	SC			TC			INOX		
	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m		mm	kg/m		mm	kg/m	
SVSU-60	1.25	0.17	105921	1.25	0.22	104313	1.20	0.16	108043

PERFORATED CABLE TRAYS AND CONNECTORS

SHSU-60 45° angle connector

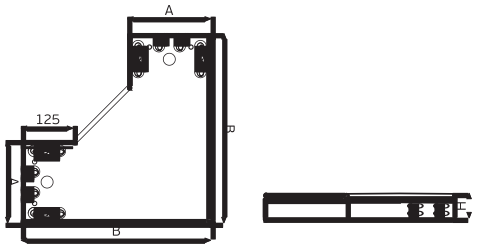




LABEL	A	H	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
SHSU-50/30	50.00	30.00	0.55	0.13	105915	0.80	0.18	112681	0.50	0.12	125751
SHSU-100/60	100.00	60.00	0.70	0.36	105916	0.80	0.50	106214	0.60	0.31	125752
SHSU-200/60	200.00	60.00	0.70	0.62	105917	0.80	0.87	106215	0.60	0.53	125753
SHSU-300/60	300.00	60.00	0.90	1.06	105918	1.00	1.20	112535	0.80	0.94	125754
SHSU-400/60	400.00	60.00	0.90	1.65	105919	1.00	2.23	112540	0.80	1.47	112149
SHSU-500/60	500.00	60.00	1.25	2.60	118527	1.25	2.86	112544	1.00	2.08	125755
SHSU-600/60	600.00	60.00	1.25	3.38	113246	1.25	3.40	112578	1.00	2.70	125756

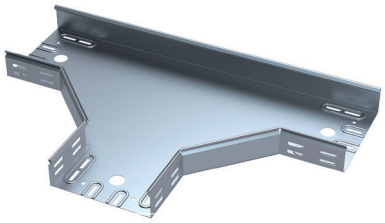
USU-60 90° angle connector

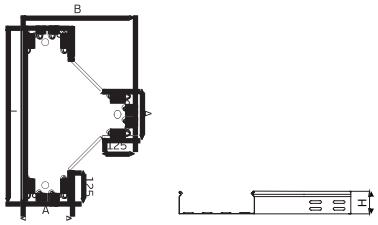




LABEL	A	B	H	SC			TC			INOX		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
USU-50/30	50	307	30	0.55	0.35	105900	0.80	0.52	112681	0.50	0.32	110991
USU-100/60	100	357	60	0.70	0.80	105901	0.80	0.80	106214	0.60	0.69	108048
USU-200/60	200	457	60	0.70	1.32	105902	0.80	1.40	106215	0.60	1.13	108047
USU-300/60	300	557	60	0.90	2.49	105903	1.00	2.79	112535	0.80	2.21	108044
USU-400/60	400	657	60	0.90	3.49	105904	1.00	3.63	112540	0.80	3.10	110987
USU-500/60	500	757	60	1.25	4.40	112986	1.25	6.00	112544	1.00	3.52	121973
USU-600/60	600	857	60	1.25	5.28	113089	1.25	7.90	112578	1.00	4.22	125757

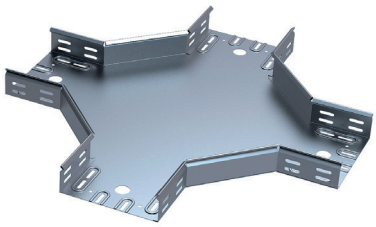
TSU-60 T connector

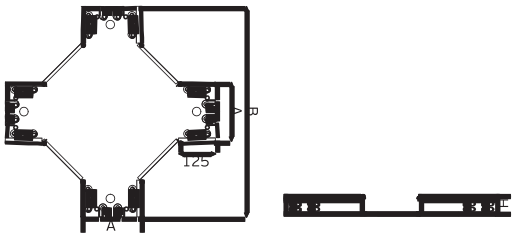




LABEL	A	B	L	H	SC			TC			INOX		
					D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
TSU-50/30	50	307	564	30	0.55	0.56	105905	0.80	0.80	112682	0.50	0.51	117008
TSU-100/60	100	357	614	60	0.70	1.11	105906	0.80	1.60	105712	0.60	0.95	111898
TSU-200/60	200	457	714	60	0.70	1.96	105907	0.80	1.96	105713	0.60	1.47	111899
TSU-300/60	300	557	814	60	0.90	3.37	105908	1.00	3.00	112549	0.80	3.00	112655
TSU-400/60	400	657	914	60	0.90	3.82	105909	1.00	3.82	104317	0.80	4.07	114957
TSU-500/60	500	757	1014	60	1.25	5.75	112656	1.25	9.25	112550	1.00	4.60	121974
TSU-600/60	600	857	1114	60	1.25	6.80	113090	1.25	11.50	112551	1.00	5.44	125758

KSU-60 cross connector

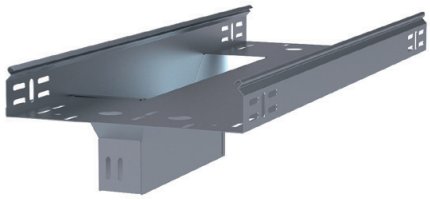


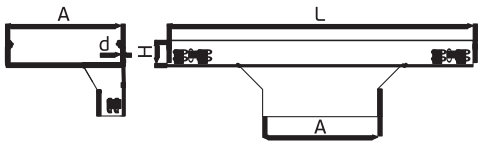


LABEL	A	B	H	SC			TC			INOX		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
KSU-50/30	50	564	30	0.55	1.60	105910	0.80	2.24	112900	0.50	1.45	125759
KSU-100/60	100	614	60	0.70	1.90	105911	0.80	2.66	112901	0.60	1.63	125760
KSU-200/60	200	714	60	0.70	3.10	105912	0.80	4.34	112902	0.60	2.66	117859
KSU-300/60	300	814	60	0.90	4.80	105913	1.00	6.48	112903	0.80	4.27	125761
KSU-400/60	400	914	60	0.90	6.70	105914	1.00	9.05	112904	0.80	5.96	125762
KSU-500/60	500	1014	60	1.25	8.04	113464	1.25	13.67	112905	1.00	6.43	125763
KSU-600/60	600	1114	60	1.25	9.60	113940	1.25	17.28	112906	1.00	7.68	125764

PERFORATED CABLE TRAYS AND CONNECTORS

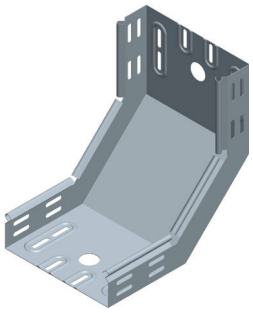
SSU-60 lowering connector

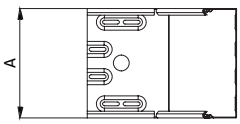


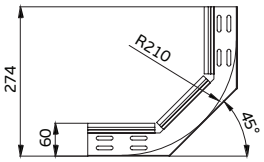


LABEL	A	L	H	SC			TC			INOX		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
SSU-100/60	100	600	60	0.70	1.08	119361	0.80	1.24	123048	0.60	2.30	128984
SSU-200/60	200	600	60	0.70	1.52	119352	0.80	1.80	122855	0.60	2.70	128985
SSU-300/60	300	800	60	0.90	3.16	119353	1.00	2.93	126463	0.80	4.10	128986
SSU-400/60	400	800	60	0.90	3.87	119354	1.00	4.45	123049	0.80	4.60	128987
SSU-500/60	500	1000	60	1.25	7.66	134640	1.25	7.24	134642	1.25	4.98	?
SSU-600/60	600	1000	60	1.25	8.84	134641	1.25	9.26	134643	1.25	5.4	?

VUSU-60 vertical inner connector

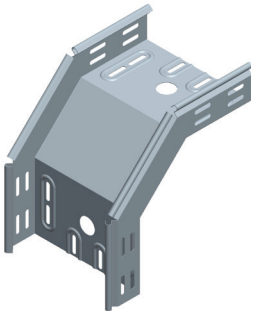


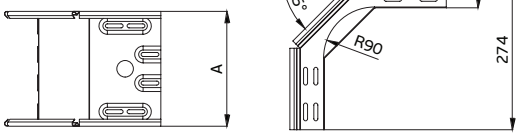




LABEL	A	SC			TC			INOX		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m		mm	kg/m	
VUSU-100/60	100	0.70	0.62	120283	0.80	0.87	121503	0.60	0.97	148056
VUSU-200/60	200	0.70	0.88	120284	0.80	1.23	121502	0.60	1.44	157133
VUSU-300/60	300	0.90	1.46	131289	1.00	2.04	121501	0.80	2.20	148057
VUSU-400/60	400	0.90	1.79	131290	1.00	2.50	121500	0.80	2.74	157134
VUSU-500/60	500	1.25	2.95	131291	1.25	5.01	121499	1.00	5.48	157135
VUSU-600/60	600	1.25	3.42	131292	1.25	5.81	131293	1.00	6.37	157136

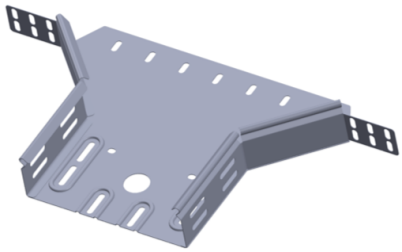
VVSU-60 vertical outer connector

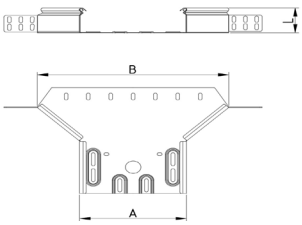




LABEL	A	SC			TC			INOX		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m		mm	kg/m	
VVSU-100/60	100	0.70	0.57	120281	0.80	0.80	121697	0.60	0.97	148083
VVSU-200/60	200	0.70	0.77	120282	0.80	1.08	121665	0.60	1.34	147561
VVSU-300/60	300	0.90	1.25	131294	1.00	1.75	131298	0.80	2.07	148059
VVSU-400/60	400	0.90	1.52	131295	1.00	2.13	131299	0.80	2.40	157137
VVSU-500/60	500	1.25	2.48	131296	1.25	4.22	131300	1.00	4.78	157138
VVSU-600/60	600	1.25	2.84	131297	1.25	4.83	131301	1.00	5.37	157139

BTSU-60 side connector



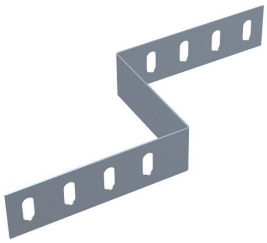


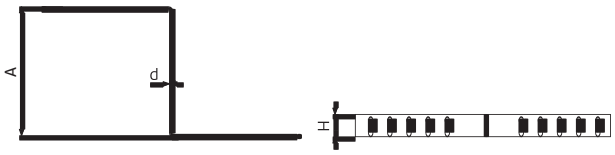
LABEL	A	B	L	SC			TC		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m	
BTSU-50/30	50	210	30	0.55	0.32	138444	0.80	0.50	138451
BTSU-100/60	100	260	60	0.70	0.53	138445	0.80	0.65	138452
BTSU-200/60	200	360	60	0.70	0.61	138446	0.80	0.75	138453
BTSU-300/60	300	460	60	0.90	0.96	138447	1.00	1.15	138454
BTSU-400/60	400	560	60	0.90	1.14	138448	1.00	1.37	138455
BTSU-500/60	500	660	60	1.25	1.84	138449	1.25	1.98	138456
BTSU-600/60	600	760	60	1.25	2.09	138450	1.25	2.25	138457

Inox available on request.

PERFORATED CABLE TRAYS AND CONNECTORS

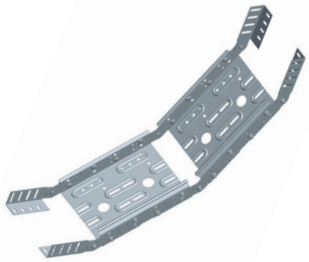
ZU-60 reducer

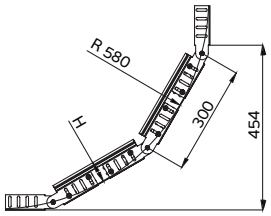


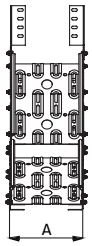


LABEL	A	H	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
ZU-50/30	50	40	1.25	0.11	106389	1.25	0.11	117521	1.20	0.11	125765
ZU-100/60	100	40	1.25	0.17	106390	1.25	0.17	112547	1.20	0.17	125766
ZU-200/60	200	40	1.25	0.23	106391	1.25	0.23	112548	1.20	0.23	125767
ZU-300/60	300	40	1.25	0.30	106392	1.25	0.30	112928	1.20	0.30	125768
ZU-400/60	400	40	1.25	0.35	106393	1.25	0.35	122891	1.20	0.35	125769
ZU-500/60	500	40	1.25	0.40	127212	1.25	0.41	134324	-	-	-

LSU-60 arc connector

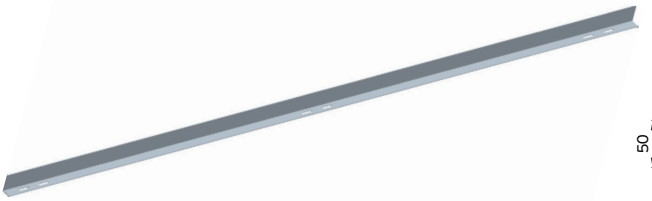


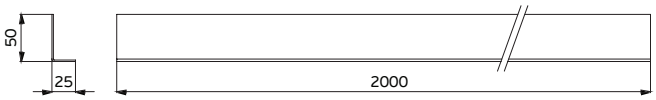




LABEL	A	H	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
LSU-100/60	103	60	0.70	1.70	133768	0.80	2.38	133774	0.60	1.60	125770
LSU-200/60	203	60	0.70	1.98	105944	0.80	2.77	107297	0.60	1.83	125771
LSU-300/60	303	60	0.90	2.60	105945	1.00	3.64	115093	0.80	2.67	125772
LSU-400/60	403	60	0.90	2.96	105946	1.00	4.14	107296	0.80	3.10	125773
LSU-500/60	503	60	1.25	4.22	113253	1.25	7.71	122859	1.00	3.21	125774
LSU-600/60	603	60	1.25	4.72	117696	1.25	8.02	133779	1.00	3.79	125775

UKRU-60 stiffener





A stiffener is installed where there is a need to stiffen and strengthen the cable tray because of higher loads. It is fastened to the cable tray using two to three VE-03 fasteners. A stiffener also serves to separate two or more types of cables.

LABEL	SC			TC			INOX		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m		mm	kg/m	
UKRU-60	1.50	0.85	106398	1.50	1.70	116638	1.20	1.00	116001

Cable tray cover PPKU L = 2000

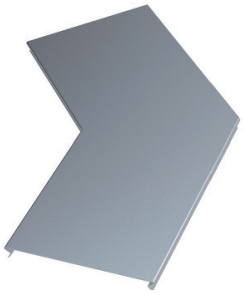


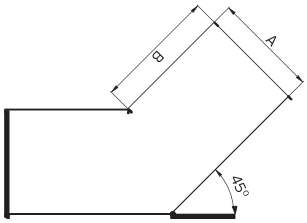


LABEL	A	L	SC			TC			INOX		
			D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PPKU-50/30	52	2000	0.55	0.36	105923	0.80	1.26	106992	0.50	0.33	106852
PPKU-100/60	102	2000	0.55	0.58	105924	1.00	2.50	106212	0.50	0.53	110485
PPKU-200/60	202	2000	0.55	1.00	105925	1.00	3.50	106213	0.50	0.93	110486
PPKU-300/60	302	2000	0.70	1.83	105926	1.25	6.00	111423	0.60	1.60	110552
PPKU-400/60	402	2000	0.70	2.38	105927	1.25	7.80	107300	0.60	2.08	110553
PPKU-500/60	502	2000	0.90	3.77	112176	1.25	9.80	106034	0.80	3.41	122699
PPKU-600/60	602	2000	0.90	4.48	110450	1.25	14.40	111370	0.80	4.05	114197

PERFORATED CABLE TRAYS AND CONNECTORS

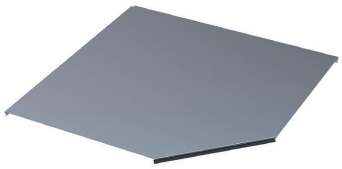
PSHSU 45° connector cover

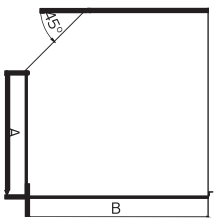




LABEL	A	B	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PSHSU-50/30	52	124	0.55	0.10	105933	0.80	0.17	112919	0.50	0.09	125786
PSHSU-100/60	102	124	0.55	0.17	105934	1.00	0.31	112920	0.50	0.15	125778
PSHSU-200/60	202	124	0.55	0.35	105935	1.00	0.65	112921	0.50	0.32	125779
PSHSU-300/60	302	124	0.70	0.71	105936	1.25	0.96	112922	0.60	0.61	125780
PSHSU-400/60	402	124	0.70	1.02	105937	1.25	1.38	112923	0.60	0.87	125781
PSHSU-500/60	502	124	0.90	1.77	119279	1.25	2.39	112924	0.80	1.57	125787

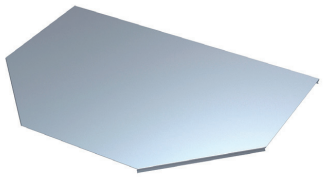
PUSU 90° connector cover

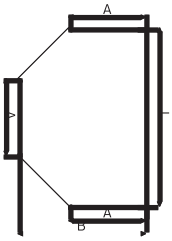




LABEL	A	B	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PUSU-50	52	182	0.55	0.15	105928	0.80	0.24	112878	0.50	0.13	110992
PUSU-100	102	232	0.55	0.25	105929	1.00	0.50	106216	0.50	0.22	110990
PUSU-200	202	332	0.55	0.51	105930	1.00	1.00	106217	0.50	0.45	110989
PUSU-300	302	432	0.70	1.09	105931	1.25	1.95	112642	0.60	1.71	114955
PUSU-400	402	532	0.70	1.65	105932	1.25	3.50	112643	0.60	2.38	110988
PUSU-500	502	632	0.90	2.99	113377	1.25	4.00	112897	0.80	3.43	125784
PUSU-600	602	732	0.90	3.99	115250	1.25	6.90	112898	0.80	4.53	125785

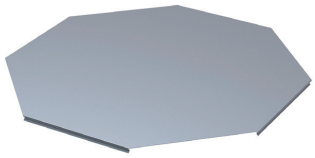
PTSU T connector cover

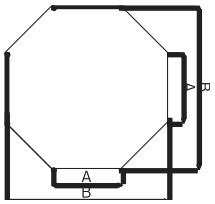




LABEL	A	B	L	SC			TC			INOX		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PTSU-50	52	182	314	0.55	0.22	105938	0.80	0.37	112899	0.50	0.32	125777
PTSU-100	102	232	364	0.55	0.35	105939	1.00	0.76	112626	0.50	0.34	114953
PTSU-200	202	332	464	0.55	0.66	105940	1.00	1.46	112627	0.50	0.92	114954
PTSU-300	302	432	564	0.70	1.35	105941	1.25	2.85	104272	0.60	1.71	114956
PTSU-400	402	532	664	0.70	1.97	105942	1.25	4.20	112628	0.60	2.61	114958
PTSU-500	502	632	764	0.90	3.48	114832	1.25	5.90	110819	0.80	3.82	125782
PTSU-600	602	732	864	0.90	4.57	115251	1.25	7.60	110336	0.80	5.16	125783

PKSU cross connector cover

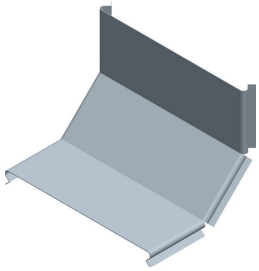


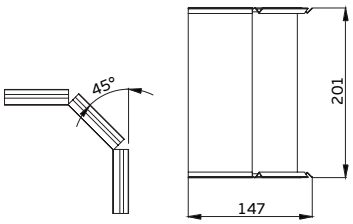


LABEL	A	B	SC			TC			INOX		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PKSU-50	52	314	0.55	0.33	106814	0.80	0.85	112907	0.50	0.45	125789
PKSU-100	102	364	0.55	0.48	106815	1.00	1.39	112908	0.50	0.68	126634
PKSU-200	202	464	0.55	0.84	106816	1.00	2.44	112909	0.50	1.20	126635
PKSU-300	302	564	0.70	1.65	106817	1.25	3.38	112910	0.60	2.14	126636
PKSU-400	402	664	0.70	2.34	106818	1.25	5.06	112911	0.60	3.21	126637
PKSU-500	502	764	0.90	4.03	120084	1.25	6.57	112912	0.80	4.33	126638
PKSU-600	602	864	0.90	5.20	120085	1.25	8.55	112913	0.80	5.63	126639

PERFORATED CABLE TRAYS AND CONNECTORS

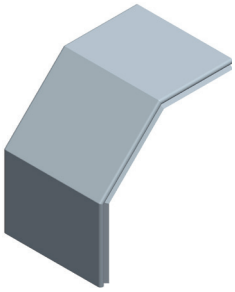
PVUSU vertical inner connector cover

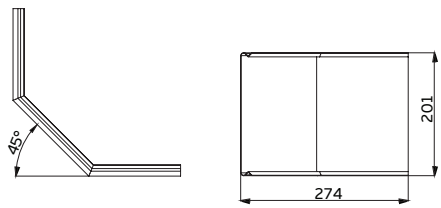




LABEL	A	SC			TC			INOX		
		D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PVUSU-100	102	0.55	0.22	131268	1.00	0.40	131274	0.50	0.40	148084
PVUSU-200	202	0.55	0.38	125117	1.00	0.70	131275	0.50	0.72	157121
PVUSU-300	302	0.70	0.70	131269	1.25	1.24	123005	0.60	1.30	148058
PVUSU-400	402	0.70	0.90	131270	1.25	1.62	123047	0.60	1.77	157122
PVUSU-500	502	0.90	1.43	131272	1.25	1.99	131276	0.80	2.06	157123
PVUSU-600	602	0.90	1.70	131273	1.25	2.36	131277	0.80	2.54	157124
PSHSU-600/60	602	0.90	2.28	120083	1.25	3.08	112925	0.80	2.03	125788

PVVSU outer cover

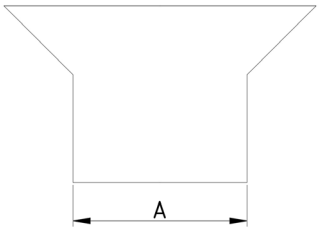




LABEL	A	SC			TC			INOX		
		D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm	kg/m		mm	kg/m		mm	kg/m	
PVVSU-100	102	0.55	0.28	131278	1.00	0.51	131283	0.50	0.44	148065
PVVSU-200	202	0.55	0.49	125118	1.00	0.89	131284	0.50	0.96	157125
PVVSU-300	302	0.70	0.89	131279	1.25	1.58	131285	0.60	1.70	148060
PVVSU-400	402	0.70	1.15	131280	1.25	2.06	131286	0.60	2.27	157126
PVVSU-500	502	0.90	1.82	131281	1.25	2.53	131287	0.80	2.73	157127
PVVSU-600	602	0.90	2.16	131282	1.25	3.01	131288	0.80	3.21	157128

PBTSU cover





LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
PBTSU-50/30	50	0.55	0.11	138458	0.80	0.17	138465
PBTSU-100/60	100	0.55	0.16	138459	1.00	0.30	138466
PBTSU-200/60	200	0.55	0.24	138460	1.00	0.48	138467
PBTSU-300/60	300	0.70	0.42	138461	1.25	0.82	138468
PBTSU-400/60	400	0.70	0.54	138462	1.25	1.03	138469
PBTSU-500/60	500	0.90	0.84	138463	1.25	1.25	138470
PBTSU-600/60	600	0.90	0.98	138464	1.25	1.47	138471

Inox available on request.



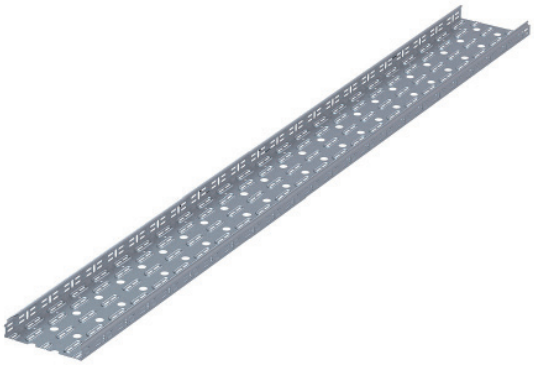
3.1.3. Lightweight perforated cable trays and connectors – PKUL 60

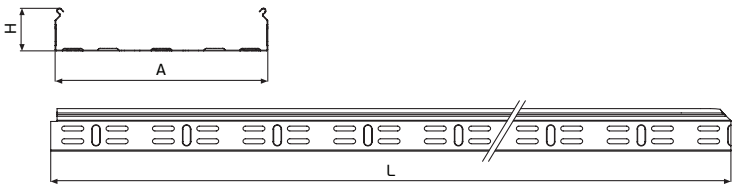
Lightweight perforated cable trays (with insertion) 60 mm

PVC cables PPOO 1 kV NYY 0.6–1 kV			PKUL-100		PKUL-200		PKUL-300		PKUL-400		PKUL-500		PKUL-600	
Guide × section	Φ outer	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14.0	0.31	24	7.6	43	15.5	65	20.5	85	26.8	110	34.7	130	40.0
4x6	17.0	0.53	16	8.5	29	15.4	43	22.8	58	30.7	72	38.2	86	45.6
4x10	19.5	0.75	12	9.1	23	17.4	34	25.7	46	34.7	58	43.8	68	51.3
4x16	22.5	1.10	8	8.8	17	18.7	26	28.6	35	38.5	43	47.3	52	57.2
4x25	28.0	1.68	6	10.1	12	20.2	18	30.2	24	40.3	31	52.1	36	60.5
4x50 S	31.0	2.50	5	12.5	10	25.0	14	35.0	18	45.0	23	57.5	28	70.0
4x95 S	39.0	4.42	3	13.3	5	22.1	7	30.9	10	44.2	12	53.0	14	61.9
4x120	41.5	5.46	2	10.9	3	16.4	5	27.3	6	32.8	9	49.1	10	54.6
4x185 S	52.5	8.42	2	16.8	3	25.3	4	33.7	6	50.5	7	58.9	8	67.4
4x240	61.0	10.80	1	10.8	2	21.6	4	43.2	5	54.0	6	64.8	7	75.6

	PKUL-100	PKUL-200	PKUL-300	PKUL-400	PKUL-500	PKUL-600
Load capacity, kg/m	18	20	25	25	35	40

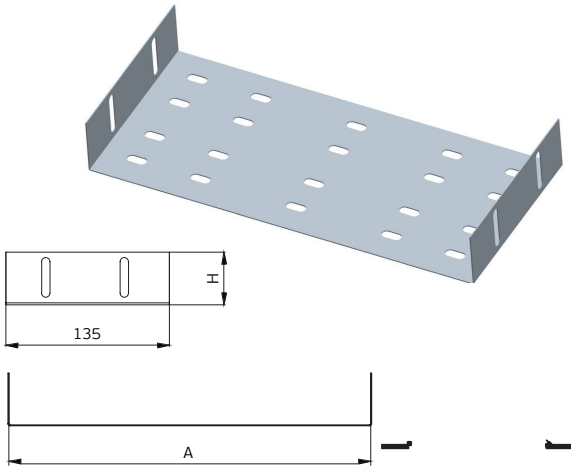
PKUL-60 lightweight perforated cable tray





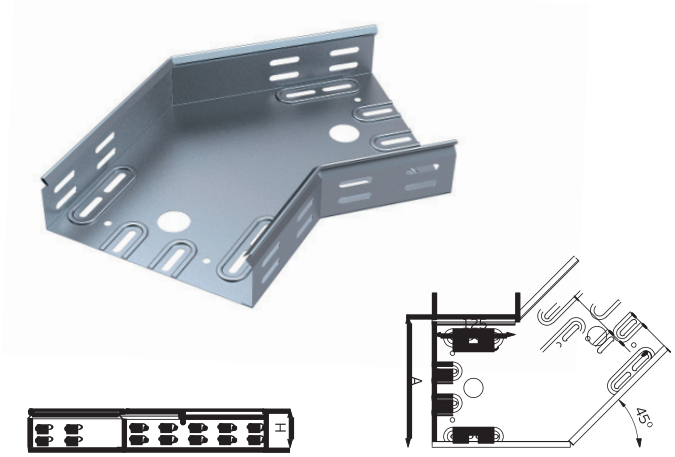
LABEL	A	B	L	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PKUL-100/60	100	60	3000	0.55	0.97	117440
PKUL-200/60	200	60	3000	0.55	1.41	117441
PKUL-300/60	300	60	3000	0.70	2.20	117442
PKUL-400/60	400	60	3000	0.70	2.75	117443
PKUL-500/60	500	60	3000	0.90	4.33	133701
PKUL-600/60	600	60	3000	0.90	4.83	122755

RSUL flat connector



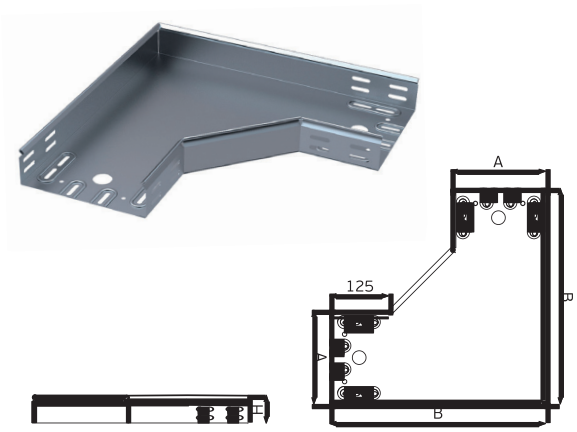
LABEL	A	H	L	D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
RSU-100/60	100	44	135	0.55	0.11	117463
RSU-200/60	200	44	135	0.55	0.17	117464
RSU-300/60	300	44	135	0.7	0.28	117465
RSU-400/60	400	44	135	0.7	0.36	114466
RSU-500/60	500	44	182	0.9	0.72	133728
RSU-600/60	600	44	182	0.9	0.84	133730

SHSUL-60 angle connector



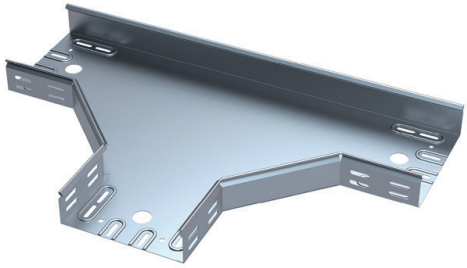
LABEL	A	H	D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
SHSUL-100/60	100	60	0.55	0.28	117459
SHSUL-200/60	200	60	0.55	0.49	117460
SHSUL-300/60	300	60	0.70	0.82	117461
SHSUL-400/60	400	60	0.70	1.28	117462
SHSUL-500/60	500	60	0.90	1.87	134313
SHSUL-600/60	600	60	0.90	2.43	134314

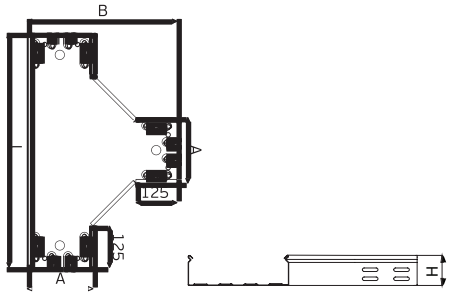
USUL-60 90° angle connector



LABEL	A	B	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
USUL-100/60	100	357	60	0.55	0.63	117445
USUL-200/60	200	457	60	0.55	1.04	117446
USUL-300/60	300	557	60	0.70	1.94	117447
USUL-400/60	400	657	60	0.70	2.72	117448
USUL-500/60	500	757	60	0.90	3.17	134315
USUL-600/60	600	857	60	0.90	3.80	134316

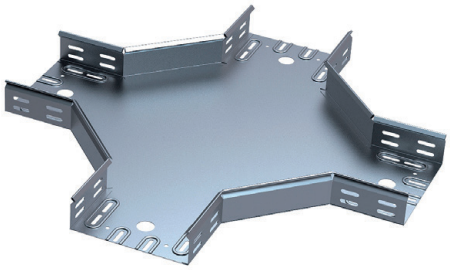
TSUL-60 T connector

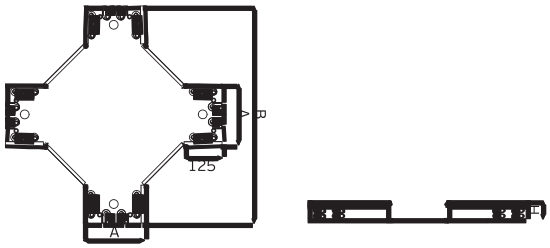




LABEL	A	B	L	H	SC		
					D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	mm	kg/m	
TSUL-100/60	100	357	614	60	0.55	0.87	117450
TSUL-200/60	200	457	714	60	0.55	1.35	117451
TSUL-300/60	300	557	814	60	0.70	2.62	117452
TSUL-400/60	400	657	914	60	0.70	3.56	117453
TSUL-500/60	500	757	1014	60	0.90	4.14	134317
TSUL-600/60	600	857	1114	60	0.90	4.90	134318

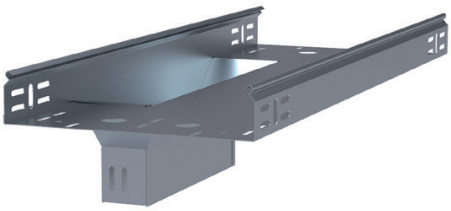
KSUL-60 cross connector

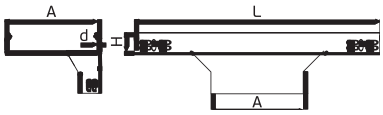




LABEL	A	B	H	SC		
				D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
KSUL-100/60	100	614	60	0.55	1.49	117455
KSUL-200/60	200	714	60	0.55	2.44	117456
KSUL-300/60	300	814	60	0.70	3.73	117457
KSUL-400/60	400	914	60	0.70	5.21	117458
KSUL-500/60	500	1014	60	0.90	5.79	134319
KSUL-600/60	600	1114	60	0.90	6.91	134320

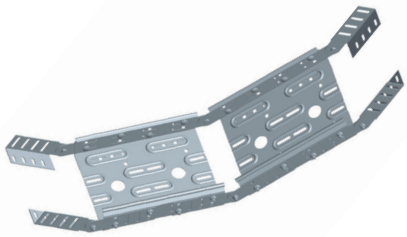
SSUL-60 lowering connector

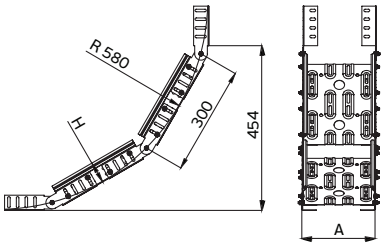




LABEL	L	A	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
SSUL-100/60	600	100	60	0.55	0.85	122489
SSUL-200/60	600	200	60	0.55	1.19	122490
SSUL-300/60	800	300	60	0.70	2.46	122491
SSUL-400/60	800	400	60	0.70	3.01	122492
SSUL-500/60	1000	500	60	0.90	5.52	134321
SSUL-600/60	1000	600	60	0.90	6.36	134322

LSUS-60 arc connector





LABEL	A	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/m	
LSUL-100/60	103	60	0.55	1.54	133764
LSUL-200/60	203	60	0.55	1.76	133765
LSUL-300/60	303	60	0.70	2.26	133766
LSUL-400/60	403	60	0.70	2.54	133767
LSUL-500/60	503	60	0.90	3.32	134325
LSUL-600/60	603	60	0.90	3.68	134326

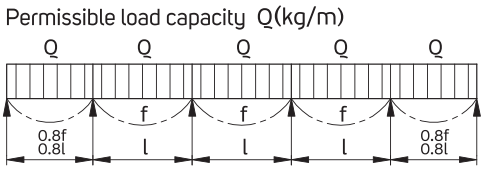
3.1.4. Perforated cable trays and connectors – PKU 85*

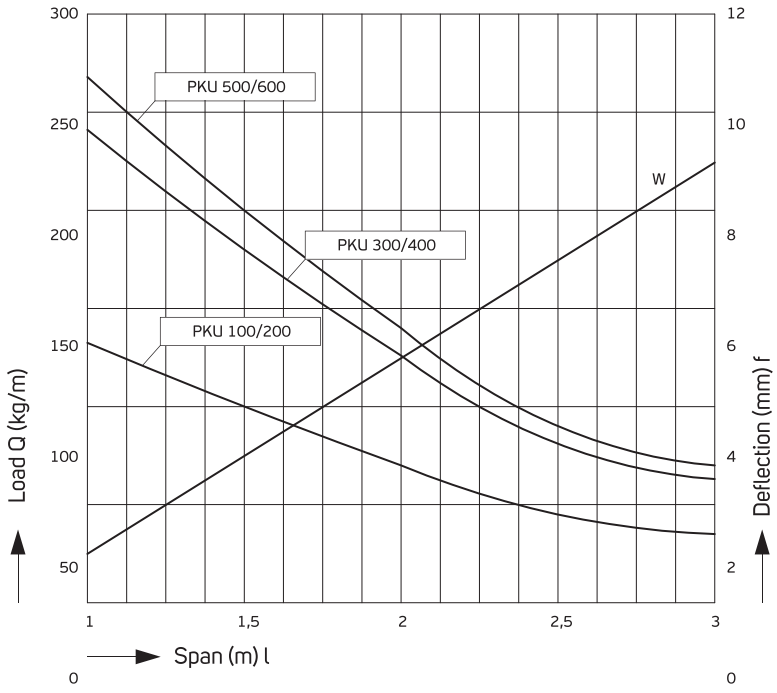
*Perforated cable trays with a height of 85 mm are available upon request.

3.1.5. Perforated cable trays and connectors – PKU 110

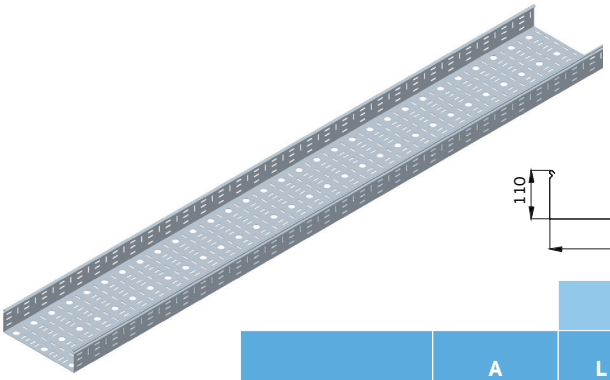
PKU-110 perforated cable trays

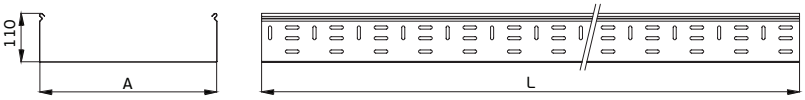
PVC cables PPOO 1 kV NYY 0.6–1 kV			PKU-100		PKU-200		PKU-300		PKU-400		PKU-500		PKU-600	
Guide × section	Φ outer	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14	0.31	60	18.6	121	37.5	183	56.7	244	75.6	303	93.9	365	113.2
4x6	17	0.53	40	21.2	82	43.5	123	65.2	165	87.5	206	109.2	247	130.9
4x10	19.5	0.75	31	23.3	62	46.5	94	70.5	125	93.8	157	117.8	188	141
4x16	22.5	1.1	23	25.3	47	51.7	70	77	94	103.4	118	129.8	141	155.1
4x25	28	1.68	15	25.2	30	50.4	45	75.6	61	102.5	76	127.7	91	152.9
4x50 S	31	2.5	12	30	24	60	37	92.5	49	122.5	62	155	74	185
4x95 S	39	4.42	7	30.9	15	66.3	23	101.7	31	137	39	172.4	47	207.7
4x120	41.5	5.46	6	32.8	13	71	20	109.2	27	147.4	34	185.6	41	223.9
4x185 S	52.5	8.42	4	33.7	8	67.4	13	109.5	17	143.1	21	176.8	26	218.9
4x240	61	10.8	3	32.4	6	64.8	9	97.2	12	129.6	16	172.8	19	205.2





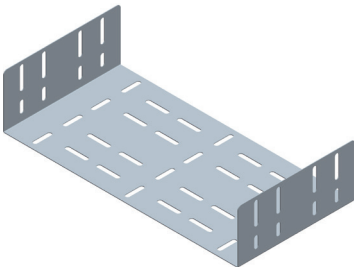
PKU-110 perforated cable tray

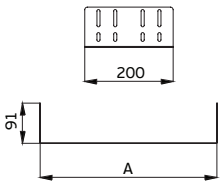




LABEL	A	SC				TC			
		L	D	MASS	CATA-LOGUE NUMBER	L	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	mm	kg/m	
PKU-100/110	100	3000	0.7	1.7	115177	2000	0.8	2.61	119422
PKU-200/110	200	3000	0.7	2.17	113553	2000	0.8	4.47	119423
PKU-300/110	300	3000	0.9	3.33	113554	2000	1	7.00	112635
PKU-400/110	400	3000	0.9	3.83	129784	2000	1	9.02	112636
PKU-500/110	500	2000	1.25	6.67	129785	2000	1.25	13.22	133028
PKU-600/110	600	2000	1.25	7.6	129786	2000	1.25	16.89	115209

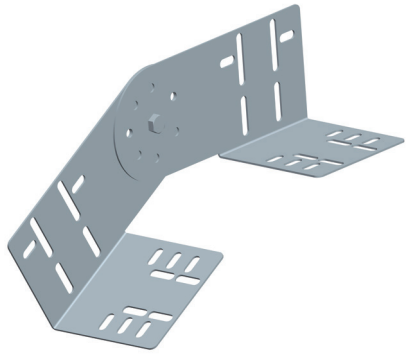
RSU-110 flat connector





LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
RSU-100/110	100	0.70	0.30	115173	0.80	0.39	119426
RSU-200/110	200	0.70	0.41	115174	0.80	0.45	115210
RSU-300/110	300	0.90	0.62	115175	1.00	0.55	119428
RSU-400/110	400	0.90	0.74	115176	1.00	0.83	115211
RSU-500/110	500	1.25	1.25	121606	1.25	1.22	129787
RSU-600/110	600	1.25	1.41	129788	1.25	1.41	115212

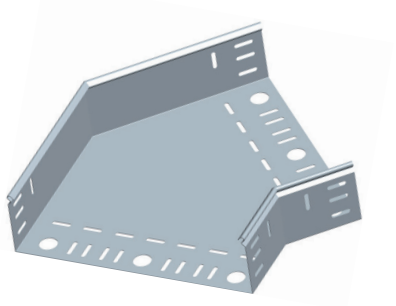
SVSU-110 vertical turn connector



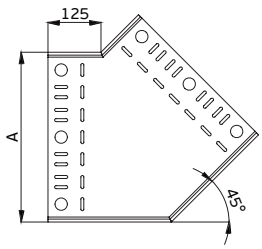
The SVSU connector serves to connect sections across two levels, i.e. to go from horizontal to vertical distribution.

LABEL	SC			TC		
	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m		mm	kg/m	
SVSU-110	1.25	0.61	130103	1.25	0.61	119442

SHSU-110 45° angle connector

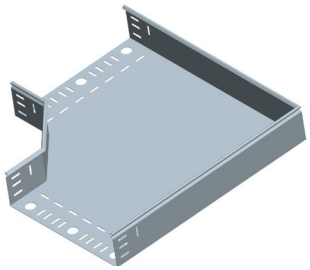


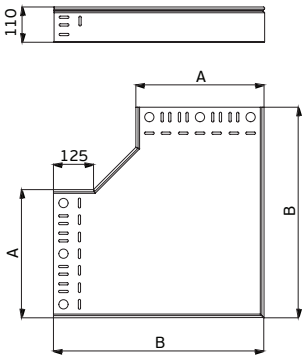




LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
SHSU-100/110	100	0.70	0.80	130104	0.80	0.91	119787
SHSU-200/110	200	0.70	1.02	130105	0.80	1.17	119788
SHSU-300/110	300	0.90	1.57	130106	1.00	1.74	119789
SHSU-400/110	400	0.90	1.81	130107	1.00	2.01	119790
SHSU-500/110	500	1.25	3.13	130108	1.25	3.13	130110
SHSU-600/110	600	1.25	3.57	130109	1.25	3.57	119791

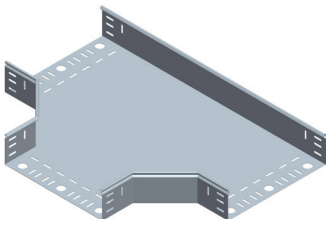
USU-110 90° angle connector

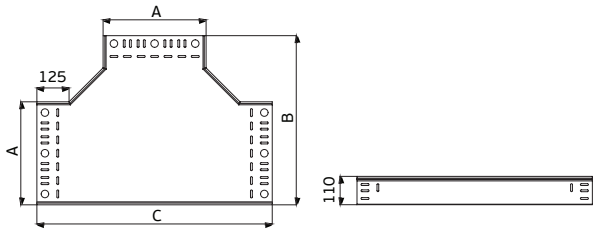




LABEL	A	B	SC			TC		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m	
USU-100/110	100	357	0.70	1.82	130113	0.80	2.08	119430
USU-200/110	200	457	0.70	2.32	130114	0.80	2.65	119431
USU-300/110	300	557	0.90	3.56	130115	1.00	3.96	112640
USU-400/110	400	657	0.90	4.08	130116	1.00	4.47	112641
USU-500/110	500	757	1.25	7.14	130117	1.25	7.30	130119
USU-600/110	600	857	1.25	8.13	130118	1.25	8.82	115215

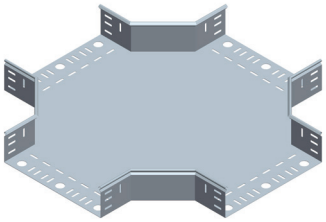
TSU-110 T connector

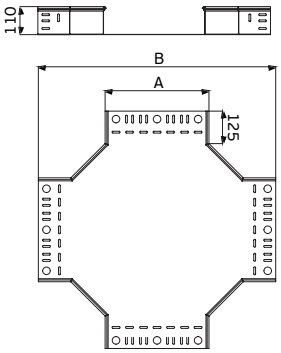




LABEL	A	B	C	SC			TC		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m	
TSU-100/110	100	357	614	0.70	2.16	130121	0.80	2.47	119434
TSU-200/110	200	457	714	0.70	2.76	130122	0.80	3.15	119435
TSU-300/110	300	557	814	0.90	4.23	130123	1.00	4.70	112645
TSU-400/110	400	657	914	0.90	4.86	130124	1.00	5.40	112646
TSU-500/110	500	757	1014	1.25	8.47	130125	1.25	7.14	130120
TSU-600/110	600	857	1114	1.25	9.65	130126	1.25	8.13	115217

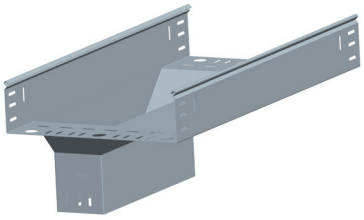
KSU-110 cross connector

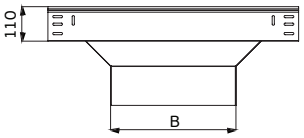


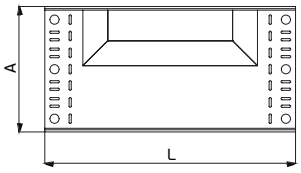


LABEL	A	B	SC			TC		
			D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	kg/m		mm	kg/m	
KSU-100/110	100	614	0.70	2.50	130127	0.80	2.86	119438
KSU-200/110	200	714	0.70	3.19	130128	0.80	3.65	119439
KSU-300/110	300	814	0.90	4.90	130129	1.00	5.44	119440
KSU-400/110	400	914	0.90	5.63	130130	1.00	6.26	119441
KSU-500/110	500	1014	1.25	9.80	130131	1.25	9.80	130133
KSU-600/110	600	1114	1.25	11.17	130132	1.25	11.17	119856

SSU-110 lowering connector

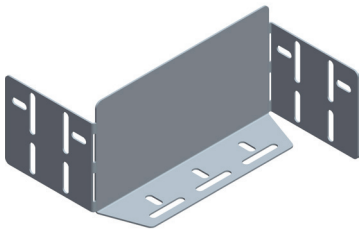


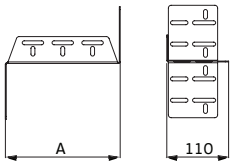




LABEL	A	B	C	SC			TC		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m	
SSU-100/110	100	100	600	0.70	2.04	130134	0.80	2.33	133035
SSU-200/110	200	200	600	0.70	2.60	130135	0.80	2.97	133036
SSU-300/110	300	300	800	0.90	4.00	130136	1.00	4.44	133037
SSU-400/110	400	400	800	0.90	4.60	130137	1.00	5.11	133038
SSU-500/110	500	500	1000	1.25	8.00	130138	1.25	8.00	133039
SSU-600/110	600	600	1000	1.25	9.12	130139	1.25	9.12	133040

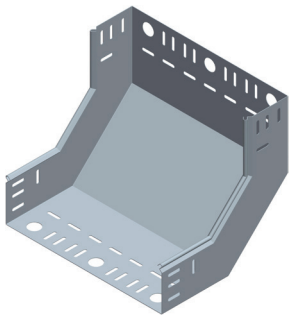
ZU-110 reducer

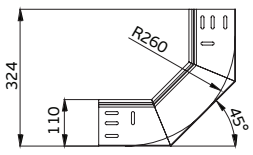


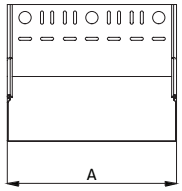


LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
ZU-100/110	100	1.25	0.41	130140	1.25	0.41	121170
ZU-200/110	200	1.25	0.52	130141	1.25	0.52	121171
ZU-300/110	300	1.25	0.80	130142	1.25	0.80	121181
ZU-400/110	400	1.25	0.92	130143	1.25	0.92	130145
ZU-500/110	500	1.25	1.60	130144	1.25	1.60	130146

VUSU-110 vertical inner connector



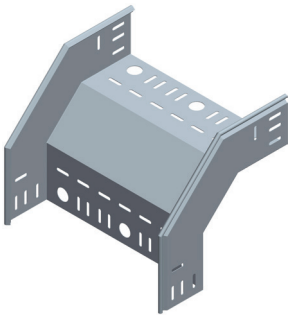


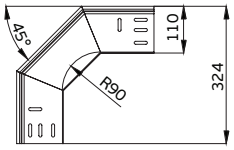


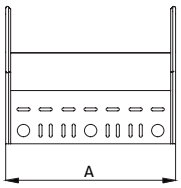
LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
VUSU-100/110	100	0.70	0.89	134178	0.80	1.02	134203
VUSU-200/110	200	0.70	1.18	134179	0.80	1.35	134204
VUSU-300/110	300	0.90	1.90	134180	1.00	2.11	134205
VUSU-400/110	400	0.90	2.27	134181	1.00	2.52	134206
VUSU-500/110	500	1.25	3.69	134182	1.25	3.69	134207
VUSU-600/110	600	1.25	4.24	134183	1.25	4.24	134208

PERFORATED CABLE TRAYS AND CONNECTORS

VVSU-110 vertical outer connector

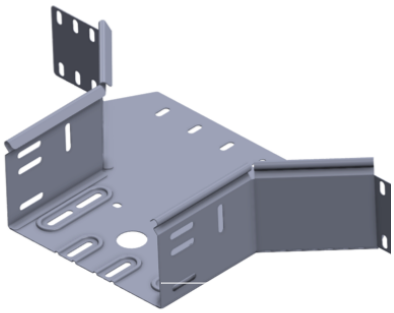




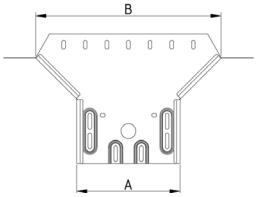


LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
VVSU-100/110	100	0.70	0.82	134184	0.80	0.94	134209
VVSU-200/110	200	0.70	1.02	134185	0.80	1.17	134210
VVSU-300/110	300	0.90	1.56	134186	1.00	1.73	134211
VVSU-400/110	400	0.90	1.80	134187	1.00	2.00	134212
VVSU-500/110	500	1.25	2.86	134188	1.25	2.86	134213
VVSU-600/110	600	1.25	3.24	134189	1.25	3.24	134214

BTSU-110 side connector

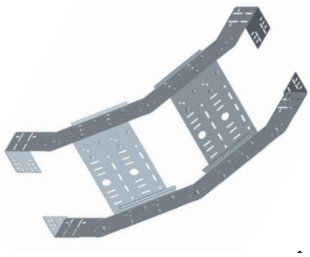


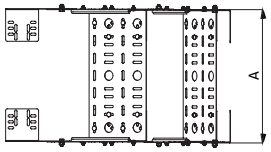


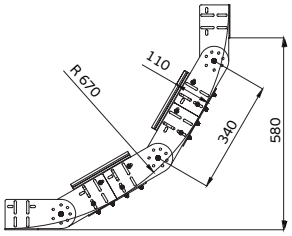


LABEL	A	B	L	SC			TC		
				D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m		mm	kg/m	
BTSU-100/110	100	260	110	0.70	0.61	145662	0.80	0.71	145668
BTSU-200/110	200	360	110	0.70	0.70	145663	0.80	0.86	145669
BTSU-300/110	300	460	110	0.90	1.10	145664	1.00	1.32	145670
BTSU-400/110	400	560	110	0.90	1.31	145665	1.00	1.57	145671
BTSU-500/110	500	660	110	1.25	2.10	145666	1.25	1.27	145672
BTSU-600/110	600	760	110	1.25	2.40	145667	1.25	2.59	145673

LSU-110 arc connector

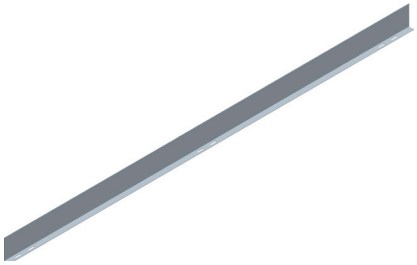


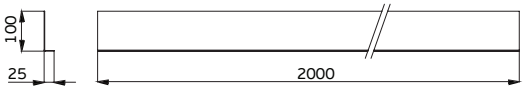




LABEL	A	SC			TC		
		D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	mm	kg/m		mm	kg/m	
LSU-100/110	103	0.70	4.60	130147	0.80	5.26	119838
LSU-200/110	203	0.70	3.37	130148	0.80	3.85	119839
LSU-300/110	303	0.90	5.29	130149	1.00	5.88	119840
LSU-400/110	403	0.90	5.50	130150	1.00	6.11	119841
LSU-500/110	503	1.25	6.71	130151	1.25	6.71	130153
LSU-600/110	603	1.25	7.10	130152	1.25	7.10	119842

UKR-110 stiffener

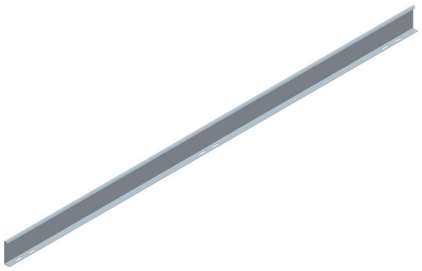


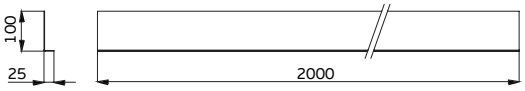


A stiffener is installed where there is a need to stiffen and strengthen the cable tray because of higher loads. It is fastened to the cable tray using two to three VE-03 fasteners. A stiffener also serves to separate two or more types of cables. Its height measures 100 mm and its length 2000 mm.

LABEL	SC			TC		
	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m		mm	kg/m	
UKR-110	1.50	1.44	121607	1.50	1.44	114750

UKRP-110 stiffener



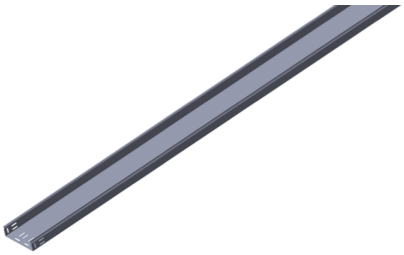


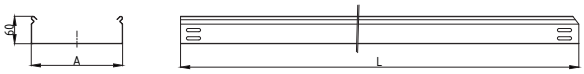
A stiffener is installed where there is a need to stiffen and strengthen the cable tray because of higher loads. It is fastened to the cable tray using two to three VE-03 fasteners. A stiffener also serves to separate two or more types of cables. Its height measures 100 mm and its length 2000 mm.

LABEL	SC			TC		
	D	MASS	CATA-LOGUE NUMBER	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m		mm	kg/m	
UKRP-110	1.50	1.55	130154	1.50	1.55	130155

3.2. Non-perforated cable trays

PUKU-60 non-perforated cable trays



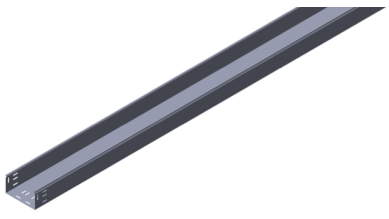


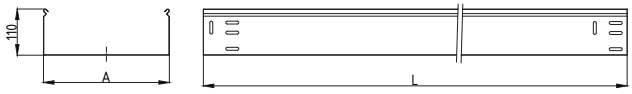
LABEL	A	H	SC L	SC D	SC MASS	SC CATALOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PUKU-50/30	50	30	3000	0.55	1.5	110392
PUKU-100/60	100	60	3000	0.7	4.2	107384
PUKU-200/60	200	60	3000	0.7	6	107072
PUKU-300/60	300	60	3000	0.9	10	107549
PUKU-400/60	400	60	3000	0.9	12.5	107548
PUKU-500/60	500	60	2000	1.25	15	124474
PUKU-600/60	600	60	2000	1.25	17.2	147105

PUKU-85 non-perforated cable trays

Non-perforated cable trays with a height of 85 mm are available upon request.

PUKU-110 non-perforated cable trays

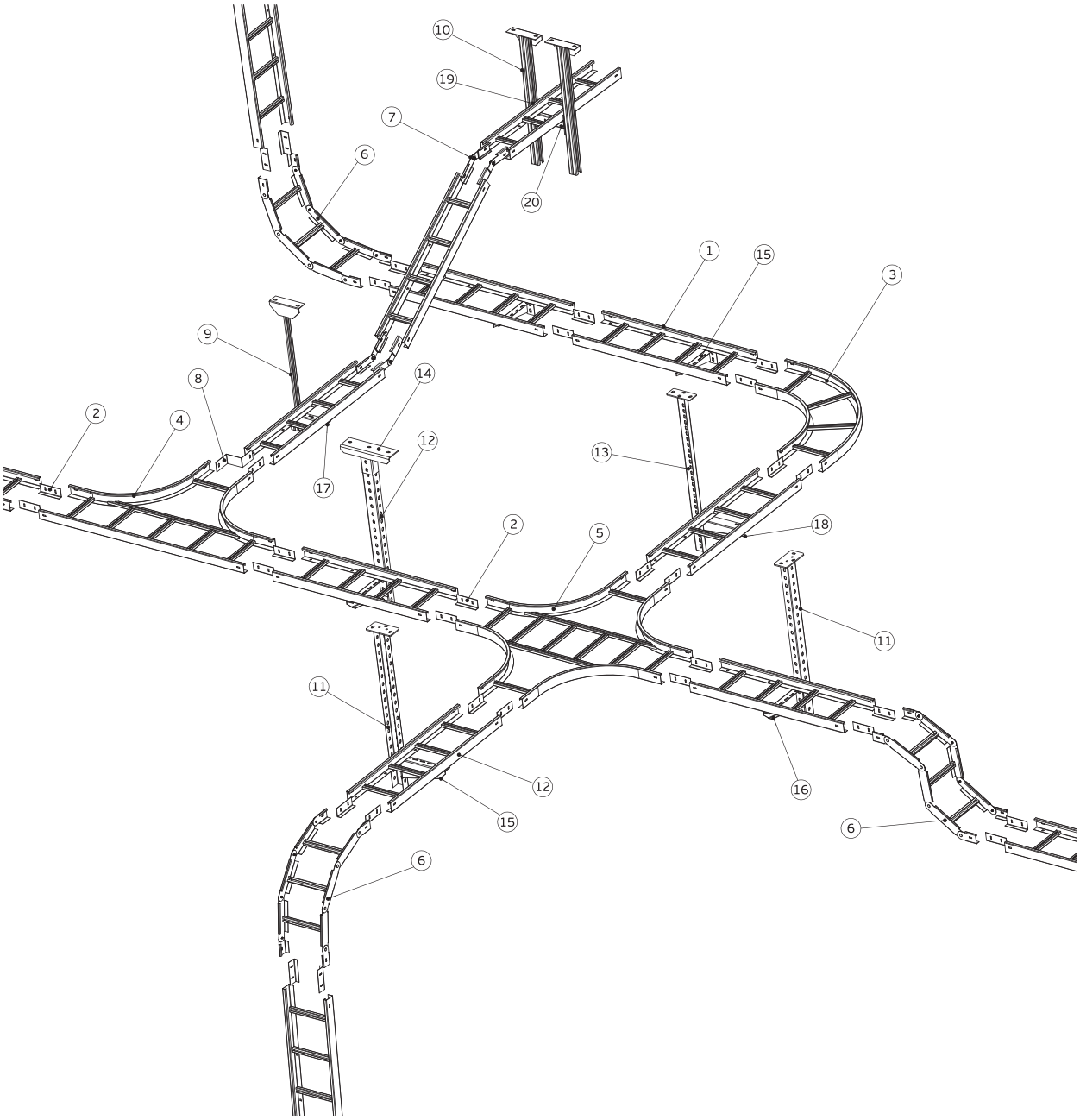




LABEL	A	H	SC L	SC D	SC MASS	SC CATALOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PUKU-100/110	100	110	3000	0.7	5.7	141045
PUKU-200/110	200	110	3000	0.7	8.4	141046
PUKU-300/110	300	110	3000	0.9	11.8	141317
PUKU-400/110	400	110	3000	0.9	15.9	141047
PUKU-500/110	500	110	2000	1.25	19.2	121601
PUKU-600/110	600	110	2000	1.25	23.5	125279



3.3. Cable ladders and connectors



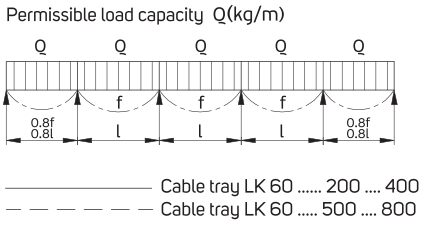
Pos.	Component name	Pos.	Component name	Pos.	Component name
1	LK-60 – Cable ladder	8	Z-60 – Reducer	15	NPK-099 – Bracket
2	SLK-60 – Flat connector	9	SN-066 – Non-perforated ceiling mount	16	NPK-009 – Bracket
3	LUS-60 – Angle connector	10	SN-006 – Non-perforated ceiling mount	17	NPK-004 – Bracket
5	LKS-60 – Cross connector	12	PNZ-007 – Perforated ceiling mount	19	SE-444 – Fastening component
6	LLS-60 – Arc connector	13	PNZ-005 – Perforated ceiling mount	20	UL-111 – Installation bar
7	LSVS-60 – Vertical turn connector	14	ZU reducer		

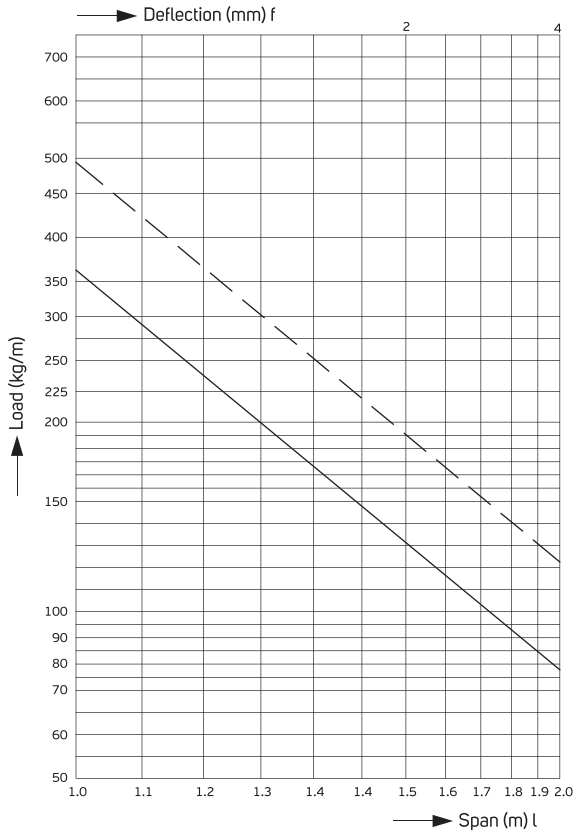
3.3.1. Cable ladders and connectors – LK 60

Cable ladders 60 mm

PVC cables PPOO 1 kV NYY 0.6–1 kV			LK-100		LK-200		LK-300		LK-400		LK-500		LK-600		LK-700		LK-800	
Guide × section	Φ outer	kg/m	Cable		Cable		Cable		Cable		Cable		Cable		Cable		Cable	
			pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14.0	0.31	24	7.6	43	15.5	65	20.5	85	26.8	110	34.7	130	40.0	150	47.3	170	53.5
4x6	17.0	0.53	16	8.5	29	15.4	43	22.8	58	30.7	72	38.2	86	45.6	100	53.0	114	60.4
4x10	19.5	0.75	12	9.1	23	17.4	34	25.7	46	34.7	58	43.8	68	51.3	78	58.9	88	64.4
4x16	22.5	1.10	8	8.8	17	18.7	26	28.6	35	38.5	43	47.3	52	57.2	61	67.1	70	77.0
4x25	28.0	1.68	6	10.1	12	20.2	18	30.2	24	40.3	31	52.1	36	60.5	41	68.9	46	77.3
4x50 S	31.0	2.50	5	12.5	10	25.0	14	35.0	18	45.0	23	57.5	28	70.0	33	82.5	38	95.0
4x95 S	39.0	4.42	3	13.3	5	22.1	7	30.9	10	44.2	12	53.0	14	61.9	16	70.7	18	79.6
4x120 S	41.5	5.46	2	10.9	3	16.4	5	27.3	6	32.8	9	49.1	10	54.6	11	60.1	12	65.5
4x185 S	52.5	8.42	2	16.8	3	25.3	4	33.7	6	50.5	7	58.9	8	67.4	9	75.8	10	84.2
4x240 S	61.0	10.80	1	10.8	2	21.6	4	43.2	5	54.0	6	64.8	7	75.6	8	86.4	9	97.2

Cable ladders 60 mm permissible load capacity (Q = kg/m)

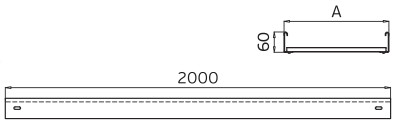




CABLE LADDERS AND CONNECTORS

LK-60 cable ladder



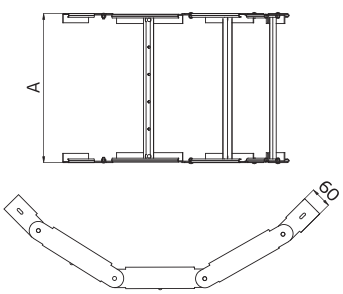


LABEL	A	D		MASS	CATALOGUE NUMBER	D		MASS	CATALOGUE NUMBER
		SC				TC			
	mm	Side rails mm	Steps mm	kg/m		Side rails mm	Steps mm	kg/m	
LK-200/60	200	1.5	1.00	5.00	100020	1.5	1.00	5.12	103898
LK-300/60	300	1.5	1.00	5.40	100021	1.5	1.00	5.57	106196
LK-400/60	400	1.5	1.00	5.62	100022	1.5	1.00	5.80	102472
LK-500/60	500	2.0	1.25	6.80	100023	2.0	1.25	6.54	106699
LK-600/60	600	2.0	1.25	7.43	100040	2.0	1.25	7.47	105748
LK-700/60	700	2.0	1.25	8.78	100036	2.0	1.25	8.86	119504
LK-800/60	800	2.0	1.25	9.54	100048	2.0	1.25	9.62	118790

At the cable ladder steps measuring 100–500 mm in width, there are perforations measuring 6 mm in diameter at every 50 mm, which can be used to secure the cables using cords.

LLS-60 arc connector





LABEL	A	D		MASS	CATALOGUE NUMBER	D		MASS	CATALOGUE NUMBER
		SC				TC			
	mm	Side rails mm	Steps mm	kg/m		Side rails mm	Steps mm	kg/m	
LLS-200/60	200	1.5	0.90	2.1	100082	1.5	1.00	2.1	106199
LLS-300/60	300	1.5	0.90	2.3	100083	1.5	1.00	2.3	106200
LLS-400/60	400	1.5	0.90	2.5	100118	1.5	1.00	2.5	104309
LLS-500/60	500	2.0	1.25	2.8	100859	2.0	1.25	2.8	112184
LLS-600/60	600	2.0	1.25	3.0	100860	2.0	1.25	3.0	107015
LLS-700/60	700	2.0	1.25	3.3	100084	2.0	1.25	3.3	122197
LLS-800/60	800	2.0	1.25	3.6	100115	2.0	1.25	3.6	122198

LSVS-60 vertical turn connector

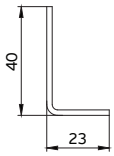


The LSVS connector serves to connect sections across two levels, i.e. to go from horizontal to vertical distribution.

LABEL	SC			TC		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
LSVS-60	2.00	0.15	100034	2.00	0.15	103550

SLK-60 flat connector



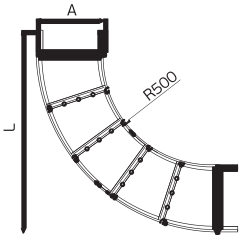


LABEL	SC			TC		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
SLK-60	2.00	0.16	100028	2.00	0.16	103351

LUS-60 90° angle connector





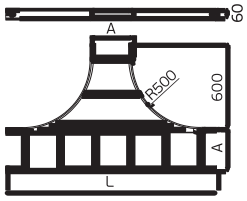


LABEL	A	L	SC				TC			
			D		MASS	CATALOGUE NUMBER	D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/m		Side rails mm	Steps mm	kg/m	
LUS-200/60	200	800	1.5	1.00	2.8	100144	1.5	1.00	2.8	106197
LUS-300/60	300	900	1.5	1.00	3.1	100030	1.5	1.00	3.1	106198
LUS-400/60	400	1000	1.5	1.00	3.7	100031	1.5	1.00	3.7	104308
LUS-500/60	500	1100	2.0	1.25	4.4	100029	2.0	1.25	4.4	111847
LUS-600/60	600	1200	2.0	1.25	4.8	100032	2.0	1.25	4.8	107016
LUS-700/60	700	1300	2.0	1.25	5.2	100882	2.0	1.25	5.2	120086
LUS-800/60	800	1400	2.0	1.25	5.8	100114	2.0	1.25	5.8	119082

CABLE LADDERS AND CONNECTORS

LTS-60 T connector

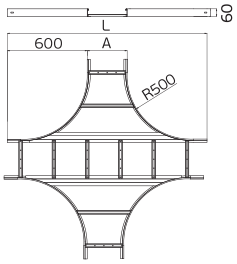




LABEL	A	L	SC				TC			
			D		MASS	CATALOGUE NUMBER	D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/m		Side rails mm	Steps mm	kg/m	
LTS-200/60	200	1400	1.5	1.00	5.5	100145	1.5	1.00	5.5	106201
LTS-300/60	300	1500	1.5	1.00	5.8	100103	1.5	1.00	5.8	106202
LTS-400/60	400	1600	1.5	1.00	6.1	100139	1.5	1.00	6.1	103545
LTS-500/60	500	1700	2.0	1.25	5.5	100033	2.0	1.25	5.5	112183
LTS-600/60	600	1800	2.0	1.25	6.7	100078	2.0	1.25	6.7	121341
LTS-700/60	700	1900	2.0	1.25	7.0	100940	2.0	1.25	7.0	120087
LTS-800/60	800	2000	2.0	1.25	7.3	100941	2.0	1.25	7.3	120088

LKS-60 cross connector





LABEL	A	L	SC				TC			
			D		MASS	CATALOGUE NUMBER	D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/m		Side rails mm	Steps mm	kg/m	
LKS-200/60	200	1400	1.5	1.00	9.8	113690	1.5	1.00	9.8	106203
LKS-300/60	300	1500	1.5	1.00	10.3	113691	1.5	1.00	10.3	106204
LKS-400/60	400	1600	1.5	1.00	10.7	113692	1.5	1.00	10.7	112062
LKS-500/60	500	1700	2.0	1.25	11.1	100857	2.0	1.25	11.1	120091
LKS-600/60	600	1800	2.0	1.25	11.5	100858	2.0	1.25	11.5	107014
LKS-700/60	700	1900	2.0	1.25	11.9	100942	2.0	1.25	11.9	120090
LKS-800/60	800	2000	2.0	1.25	12.3	100943	2.0	1.25	12.3	120089



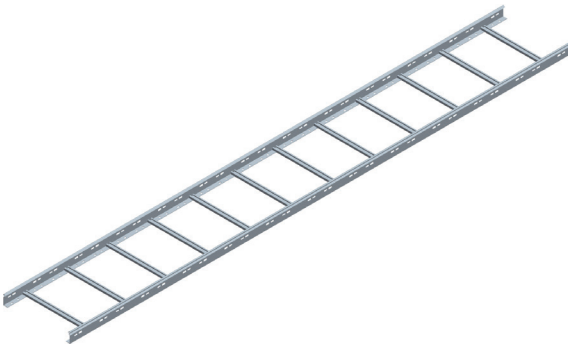
3.3.2. Lightweight cable ladders – LKL 60

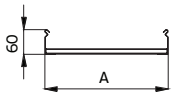
Lightweight cable ladders 60 mm

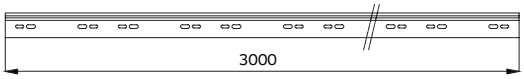
PVC cables PPOO 1 kV NYY 0.6–1 kV			LKL-100		LKL-200		LKL-300		LKL-400		LKL-500		LKL-600	
Guide × section	Φ outer	kg/m	Cable		Cable		Cable		Cable		Cable		Cable	
			pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14.0	0.31	43	15.5	65	20.5	85	26.8	110	34.7	130	40.0	130	40.0
4x6	17.0	0.53	29	15.4	43	22.8	58	30.7	72	38.2	86	45.6	86	45.6
4x10	19.5	0.75	23	17.4	34	25.7	46	34.7	58	43.8	68	51.3	68	51.3
4x16	22.5	1.10	17	18.7	26	28.6	35	38.5	43	47.3	52	57.2	52	57.2
4x25	28.0	1.68	12	20.2	18	30.2	24	40.3	31	52.1	36	60.5	36	60.5
4x50 S	31.0	2.50	10	25.0	14	35.0	18	45.0	23	57.5	28	70.0	28	70.0
4x95 S	39.0	4.42	5	22.1	7	30.9	10	44.2	12	53.0	14	61.9	14	61.9
4x120 S	41.5	5.46	3	16.4	5	27.3	6	32.8	9	49.1	10	54.6	10	54.6
4x185 S	52.5	8.42	3	25.3	4	33.7	6	50.5	7	58.9	8	67.4	8	67.4
4x240 S	61.0	10.80	2	21.6	4	43.2	5	54.0	6	64.8	7	75.6	7	75.6

	LKL-200	LKL-300	LKL-400	LKL-500	LKL-600
Load capacity, kg/m	40	50	60	70	80

LKL-60 lightweight cable ladder

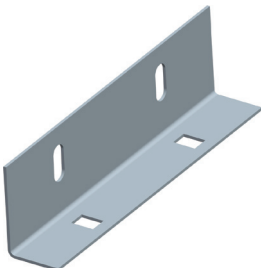


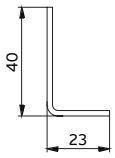




LABEL	A	SC			
		D		MASS	CATALOGUE NUMBER
	mm	Side rails mm	Steps mm	kg/m	
LKL-200/60	200	0.90	0.70	1.61	133647
LKL-300/60	300	0.90	0.70	1.74	134418
LKL-400/60	400	0.90	0.70	1.86	133648
LKL-500/60	500	1.25	0.90	2.70	133705
LKL-600/60	600	1.25	0.90	2.86	133706

SLKL-60 cable ladder connector





LABEL	SC		
	D	MASS	CATA-LOGUE NUMBER
	mm	kg/m	
SLKL-60	1.50	0.08	134419



3.3.3. Cable ladders and connectors – LK 110*

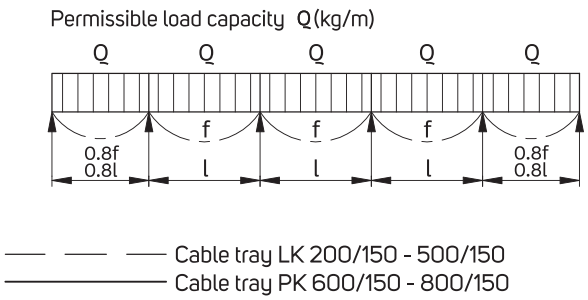
*Cable ladders with a height of 110 mm are available upon request.

3.3.4. Cable ladders and connectors – LK 150

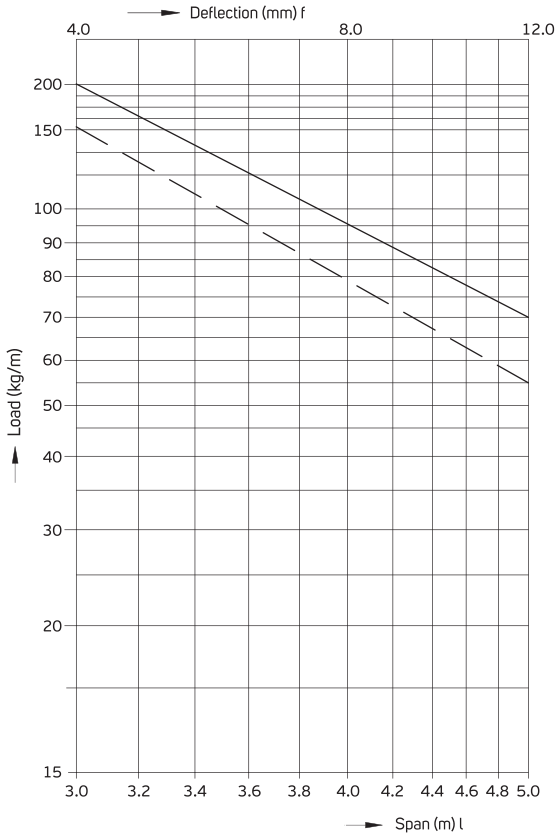
Cable ladders 150 mm

PVC cables PPOO 1 kV NYY 0.6–1 kV			LK-200		LK-300		LK-400		LK-500		LK-600		LK-700		LK-800	
Guide × section	Φ outer	kg/m	Cable		Cable		Cable		Cable		Cable		Cable		Cable	
			pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m	pcs	kg/m
4x2.5	14.0	0.31	43	15.5	65	20.5	85	26.8	110	34.7	130	40.0	150	47.3	170	53.5
4x6	17.0	0.53	29	15.4	43	22.8	58	30.7	72	38.2	86	45.6	100	53.0	114	60.4
4x10	19.5	0.75	23	17.4	34	25.7	46	34.7	58	43.8	68	51.3	78	58.9	88	64.4
4x16	22.5	1.10	17	18.7	26	28.6	35	38.5	43	47.3	52	57.2	61	67.1	70	77.0
4x25	28.0	1.68	12	20.2	18	30.2	24	40.3	31	52.1	36	60.5	41	68.9	46	77.3
4x50 S	31.0	2.50	10	25.0	14	35.0	18	45.0	23	57.5	28	70.0	33	82.5	38	95.0
4x95 S	39.0	4.42	5	22.1	7	30.9	10	44.2	12	53.0	14	61.9	16	70.7	18	79.6
4x120 S	41.5	5.46	3	16.4	5	27.3	6	32.8	9	49.1	10	54.6	11	60.1	12	65.5
4x185 S	52.5	8.42	3	25.3	4	33.7	6	50.5	7	58.9	8	67.4	9	75.8	10	84.2
4x240 S	61.0	10.80	2	21.6	4	43.2	5	54.0	6	64.8	7	75.6	8	86.4	9	97.2

Cable ladders 150 permissible load capacity (Q = kg/m)

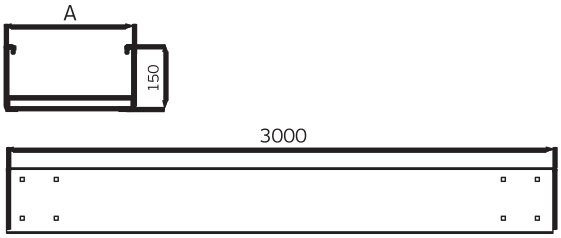


Cable tray LK 200/150 - 500/150
Cable tray PK 600/150 - 800/150



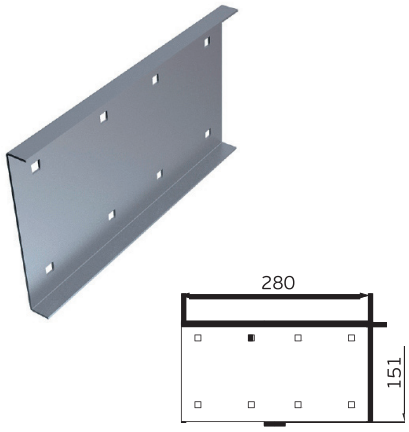
LK-150 cable ladder





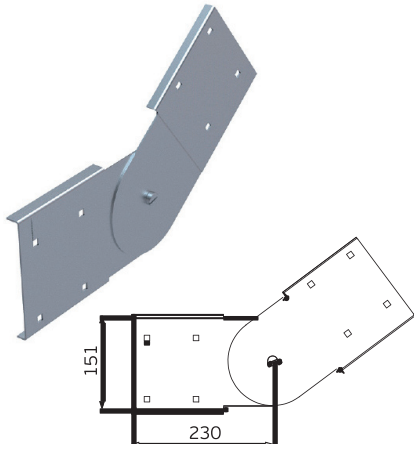
LABEL	A	L	TC D	TC MASS	TC CATALOGUE NUMBER
	mm	mm	mm	kg/m	
LK-200/150	200	150	1.5	6.47	135249
LK-300/150	300	150	1.5	5.80	120829
LK-400/150	400	150	1.5	6.20	130054
LK-500/150	500	150	2.0	7.43	116029
LK-600/150	600	150	2.0	9.07	142558
LK-700/150	700	150	2.0	9.57	142327
LK-800/150	800	150	2.0	10.07	143866

SLK-150 flat connector



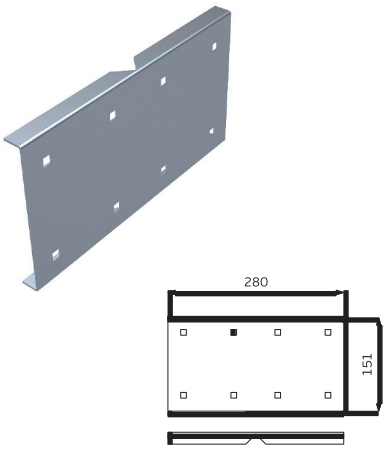
LABEL	TC D	TC MASS	TC CATALOGUE NUMBER
	mm	kg/m	
SLK-150	2.00	1.00	111845

LSVS-150 vertical turn connector



LABEL	TC D	TC MASS	TC CATALOGUE NUMBER
	mm	kg/m	
LSVS-150	2.00	1.00	111846

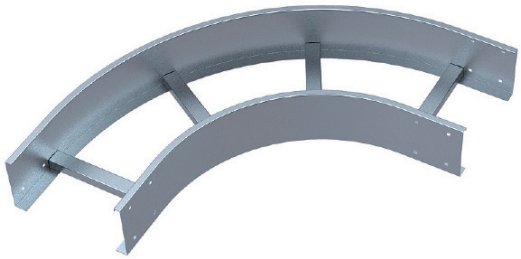
LSHS-150 horizontal turn connector

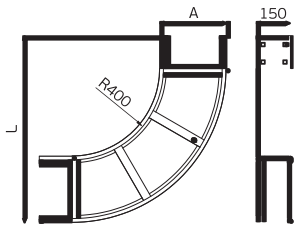


LABEL	TC D	TC MASS	TC CATALOGUE NUMBER
	mm	kg/m	
LSHS-150	2.50	1.00	113212

CABLE LADDERS AND CONNECTORS

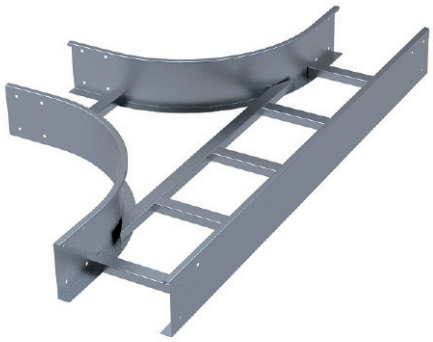
LUS-150 90° angle connector

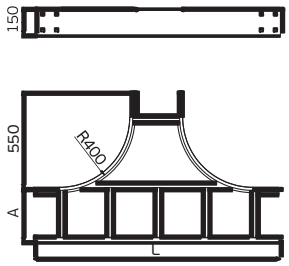




LABEL	A	L	H	TC D	TC MASS	TC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
LUS-200/150	200	750	150	1.5	6.2	113645
LUS-300/150	300	850	150	1.5	6.8	113646
LUS-400/150	400	950	150	1.5	7.5	113647
LUS-500/150	500	1050	150	1.5	8.0	113648
LUS-600/150	600	1150	150	2.0	12.9	112076
LUS-700/150	700	1250	150	2.0	15.0	113650
LUS-800/150	800	1350	150	2.0	16.5	113655

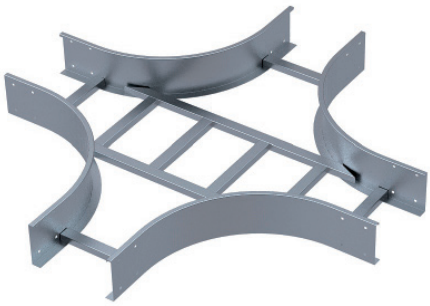
LTS-150 T connector

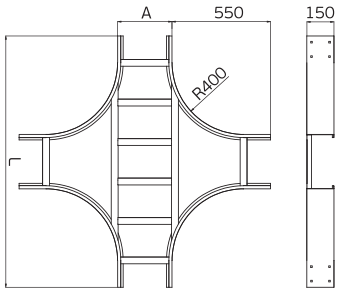




LABEL	A	L	H	TC D	TC MASS	TC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
LTS-200/150	200	1300	150	1.5	9.9	113657
LTS-300/150	300	1400	150	1.5	10.7	113658
LTS-400/150	400	1500	150	1.5	11.7	113659
LTS-500/150	500	1600	150	1.5	12.7	113660
LTS-600/150	600	1700	150	2.0	18.2	112077
LTS-700/150	700	1800	150	2.0	20.1	113662
LTS-800/150	800	1900	150	2.0	21.6	113663

LKS-150 cross connector

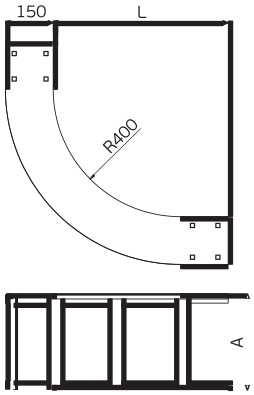




LABEL	A	L	H	TC D	TC MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
LKS-200/150	200	1300	150	1.5	12.0	113665
LKS-300/150	300	1400	150	1.5	13.1	113666
LKS-400/150	400	1500	150	1.5	14.2	113667
LKS-500/150	500	1600	150	1.5	15.1	113668
LKS-600/150	600	1700	150	2.0	21.6	113669
LKS-700/150	700	1800	150	2.0	23.0	113670
LKS-800/150	800	1900	150	2.0	24.4	113671

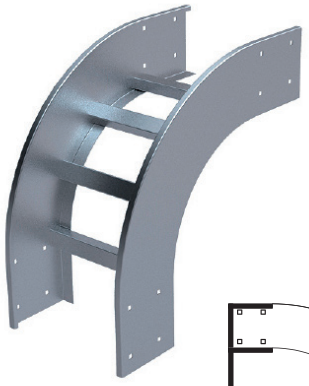
VUS-150 vertical inner connector

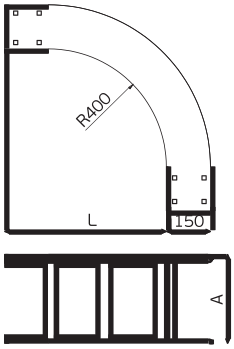




LABEL	A	L	H	TC D	TC MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
VUS-200/150	200	550	150	1.5	9.8	113694
VUS-300/150	300	550	150	1.5	10.2	113695
VUS-400/150	400	550	150	1.5	10.7	113696
VUS-500/150	500	550	150	1.5	11.1	111840
VUS-600/150	600	550	150	2.0	14.2	106700
VUS-700/150	700	550	150	2.0	14.8	113697
VUS-800/150	800	550	150	2.0	15.4	113698

VVS-150 vertical outer connector

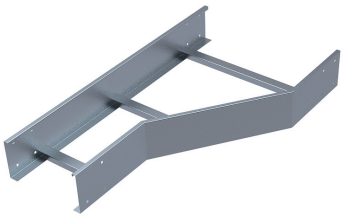


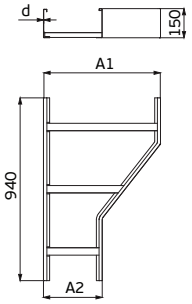


LABEL	A	L	H	TC D	TC MASS	TC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/m	
VVS-200/150	200	550	150	1.5	9.8	113700
VVS-300/150	300	550	150	1.5	10.2	113701
VVS-400/150	400	550	150	1.5	10.7	113702
VVS-500/150	500	550	150	1.5	11.1	111841
VVS-600/150	600	550	150	2.0	14.2	107292
VVS-700/150	700	550	150	2.0	14.8	113703
VVS-800/150	800	550	150	2.0	15.4	113704

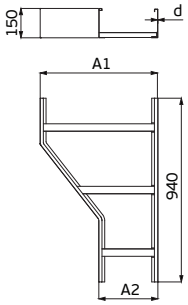


RLK-150 cable ladder reducer



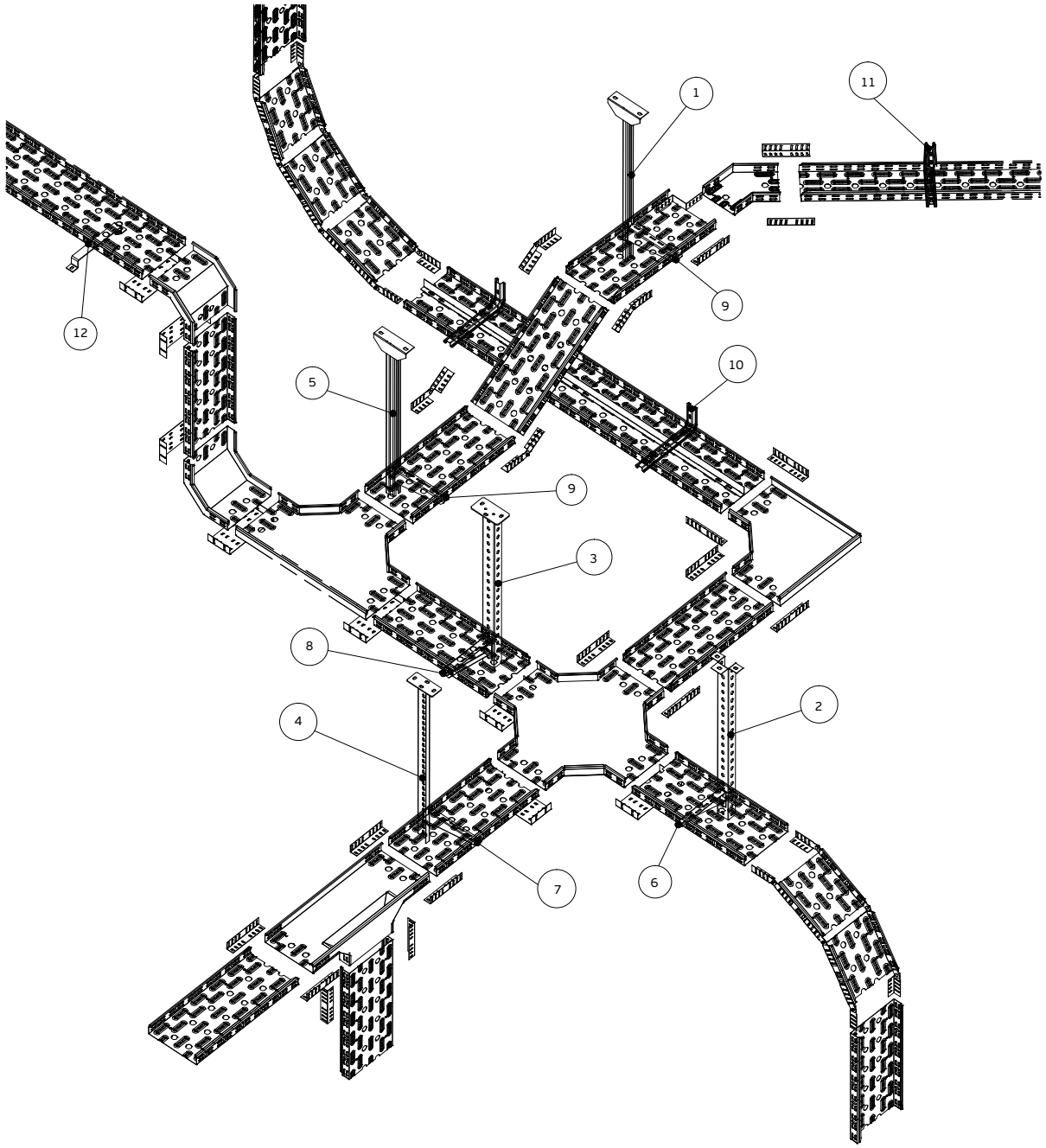






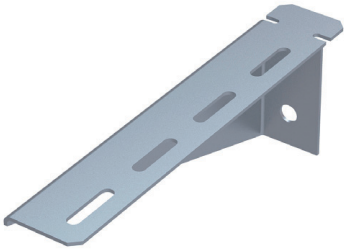
LABEL	A1	A2	D	H	MASS	Left reducer, TC	Right reducer, TC
	mm	mm	mm	mm	kg/m	CATALOGUE NUMBER	CATALOGUE NUMBER
RLK-300x200	300	200	1.5	150	5.5	113705	132985
RLK-400x200	400	200	1.5	150	6.2	113706	132986
RLK-500x200	500	200	1.5	150	6.7	113707	132987
RLK-600x200	600	200	1.5	150	7.0	113708	132988
RLK-700x200	700	200	2.0	150	8.0	113709	132989
RLK-800x200	800	200	2.0	150	8.5	113710	132990
RLK-400x300	400	300	2.0	150	5.7	113711	132991
RLK-500x300	500	300	1.5	150	6.9	113712	132992
RLK-600x300	600	300	1.5	150	7.3	113713	132993
RLK-700x300	700	300	2.0	150	8.5	113714	132994
RLK-800x300	800	300	2.0	150	8.8	113715	132995
RLK-500x400	500	400	2.0	150	7.3	113716	132996
RLK-600x400	600	400	1.5	150	7.8	113717	132997
RLK-700x400	700	400	2.0	150	8.8	113718	132998
RLK-800x400	800	400	2.0	150	9.0	113719	133000
RLK-600x500	600	500	1.5	150	7.5	113720	133001
RLK-700x500	700	500	2.0	150	9.0	113721	133002
RLK-800x500	800	500	2.0	150	9.2	113722	133003
RLK-700x600	700	600	2.0	150	9.5	113723	133004
RLK-800x600	800	600	2.0	150	10.0	113724	133005
RLK-800x700	800	700	2.0	150	11.5	113725	133006

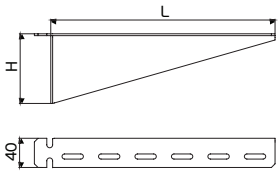
3.4.1. Supports and brackets with accessories



Pos.	Component name	Pos.	Component name	Pos.	Component name
1	SN-066	5	SN-006	9	NPK-004
2	PNZL-077	6	NPKL-099	10	NKL
3	PNZ-077	7	NPK-005	11	UNKL
4	PNZ-005	8	NPK-009	12	PN

NPKL-004 bracket

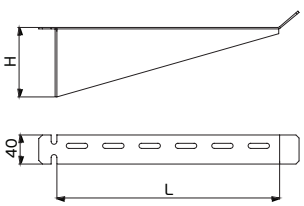




LABEL	L	H	SC						INOX					
			MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER	MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg			kg/pc	pcs	pcs	kg		
NPKL-004	110	77	0.13	2	1	100	SNL 006 ULL111	100147	0.13	2	1	100	SN 006 SN 066 ULL111	125796
NPKL-004	210	77	0.30	2	1	100		100148	0.30	2	1	100		115312
NPKL-004	310	97	0.47	2	1	100		100848	0.47	2	1	100		125797
NPKL-004	410	97	0.75	2	1	100		100849	0.75	2	1	100		125798

NPKL-044 bracket

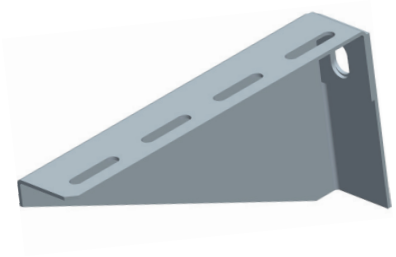


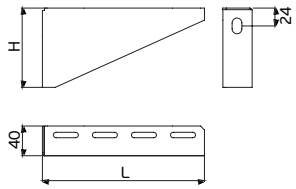


LABEL	L	H	SC					
			MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg		
NPKL-044	110	77	0.14	2	1	100	SNL 006 ULL111	100864
NPKL-044	210	77	0.31	2	1	100		100865
NPKL-044	310	97	0.48	2	1	100		100866
NPKL-044	410	97	0.76	2	1	100		100867

SUSPENSION AND SUPPORTING PARTS

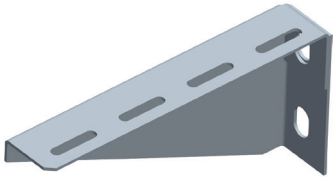
NPKLL-099 bracket

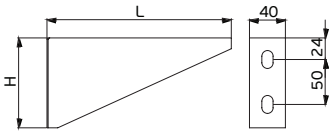




LABEL	L	H	SC							INOX						
			MASS	VE-03	VE-04	UV/SV	Load capacity	Application	CATALOGUE NUMBER	MASS	VE-03	VE-04	UV/SV	Load capacity	Application	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	pcs	kg			kg/pc	pcs	pcs	pcs	kg		
NPKLL-099	105	100	0.17	2	1	1	150	Wall PNZ xx7	133069	0.17	2	1	1	150	Wall PNZ xx7	133176
NPKLL-099	205	100	0.27	2	1	1	150		133070	0.27	2	1	1	150		133177

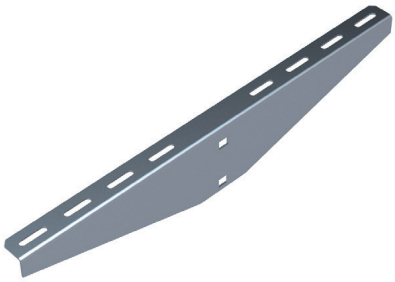
NPKL-099 bracket





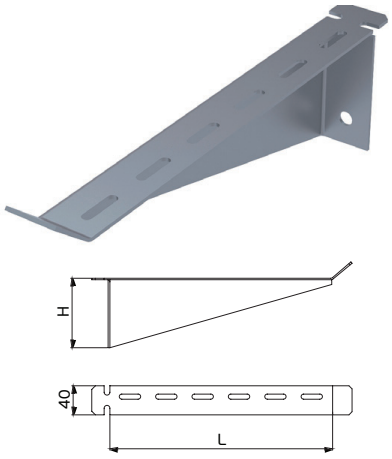
LABEL	L	H	SC							INOX						
			MASS	VE-03	VE-04	UV/SV	Load capacity	Application	CATALOGUE NUMBER	MASS	VE-03	VE-04	UV/SV	Load capacity	Application	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	pcs	kg			kg/pc	pcs	pcs	pcs	kg		
NPKL-099	55	55	0.07	2	1	1	150	Wall PNZL 007	100850	0.07	1	1	1	150	Wall PNZ 007, PNZ 077	106452
NPKL-099	105	100	0.17	2	2	2	150		100111	0.17	2	2	2	150		102034
NPKL-099	205	100	0.27	2	2	2	150		100861	0.27	2	2	2	150		101807
NPKL-099	305	100	0.50	2	2	2	150		100862	0.50	2	2	2	150		101819
NPKL-099	405	100	0.80	2	2	2	150		100863	0.80	2	2	2	150		105523

NPKL-055 bracket



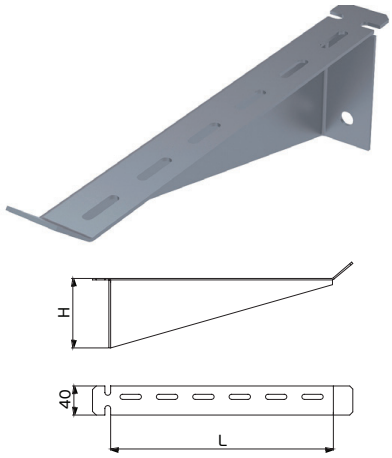
LABEL	L	H	SC					
			MASS	VE-03	VE-05	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg		
NPKL-055	280	80	0.44	4	2	200	PNZL 007	101102
NPKL-055	480	80	0.76	4	2	200		122693
NPKL-055	680	80	1.05	4	2	200		133071

NPK-004 bracket



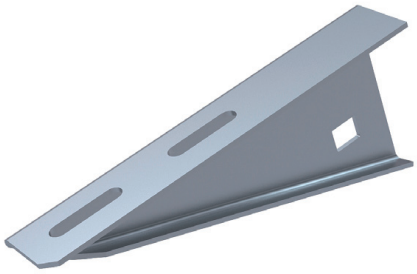
LABEL	L	H	TC					
			MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg		
NPK-004	110	80	0.30	2	1	150	SN 006 SN 066 UL 111	100245
NPK-004	210	80	0.50	2	1	150		100246
NPK-004	310	95	0.90	2	1	150		100247
NPK-004	410	95	1.30	2	1	150		100248

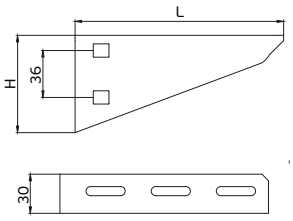
NPK-044 bracket



LABEL	L	H	TC					
			MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg		
NPK-044	110	80	0.30	2	1	150	SN 006 SN 066 UL 111	100249
NPK-044	210	80	0.50	2	1	150		100250
NPK-044	310	95	0.90	2	1	150		100251
NPK-044	410	95	1.30	2	1	150		100252

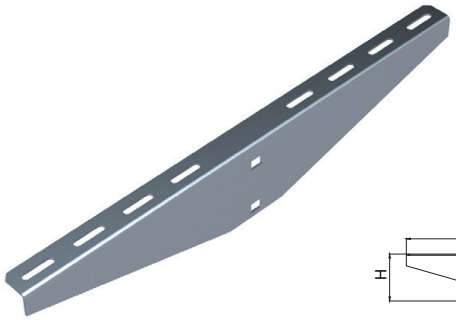
NPK-005 bracket

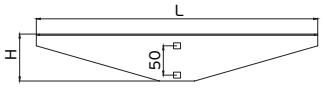




LABEL	L	H	TC					
			MASS	VE-03	VE-02	Load capacity	Applica-tion	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg		
NPK-005	160	80	0.21	2	2	200	PNZ 005	100044
NPK-005	260	80	0.34	2	2	200		100945
NPK-005	360	80	0.47	2	2	200		100253
NPK-005	460	80	0.76	2	2	200		100254
NPK-005	560	118	0.93	4	3	200		100255
NPK-005	660	118	1.10	4	3	200		103759

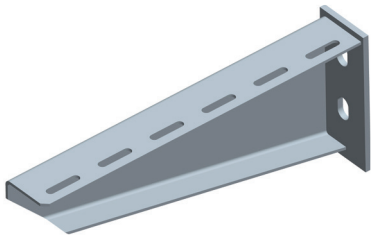
NPK-055 bracket

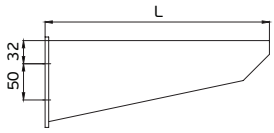




LABEL	L	H	TC						INOX					
			MASS	VE-03	VE-02	Load capacity	Application	CATA-LOGUE NUMBER	MASS	VE-03	VE-02	Load capacity	Application	CATA-LOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg			kg/pc	pcs	pcs	kg		
NPK-055	280	80	0.44	4	2	200	PNZ 007 PNZ 077	100376	0.44	4	2	200	Wall PNZ xx7	125818
NPK-055	480	80	0.76	4	2	200		107167	0.76	4	2	200		125819
NPK-055	680	80	1.05	4	2	200		101371	1.05	4	2	200		125820

NPK-009 bracket

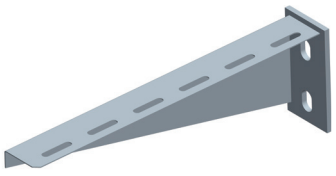


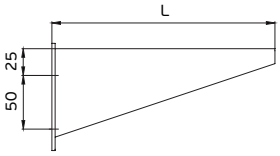




LABEL	L	H	TC MASS	TC VE-03 VE-04	TC VE-01	TC UV-10 UV-12 SV-10 SV-12	TC Load cap.	Application	CATALOGUE NUMBER	INOX MASS	INOX VE-03 VE-04	INOX VE-03 VE-05	INOX VE-01	INOX UV-10 UV-12 SV-10 SV-12	INOX Load capacity	Application	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	pcs	kg			kg/pc	pcs	pcs	pcs	pcs			
NPK-009	110	100	0.37	2/1	-	1	250	WALL PNZ 007, PNZ 077	113248	0.37	2	1	-	1	250	WALL PNZ 007, PNZ 077	125799
NPK-009	210	125	0.75	2	1	2	250		100235	0.75	2	2	1	2	250		121555
NPK-009	310	125	1.15	2	1	2	250		100236	1.15	2	2	1	2	250		121556
NPK-009	410	125	1.50	2	1	2	250		100237	1.50	2	2	1	2	250		112251
NPK-009	510	125	2.30	3	1	2	250		100238	2.30	2	2	1	2	250		107521
NPK-009	610	125	3.10	4	1	2	250		100239	3.10	2	2	1	2	250		103809
NPK-009	710	165	3.80	4	1	2	250		100240	3.80	2	2	1	2	250		125800
NPK-009	810	165	4.50	4	1	2	250		100241	4.50	2	2	1	2	250		125801

NPK-099 bracket



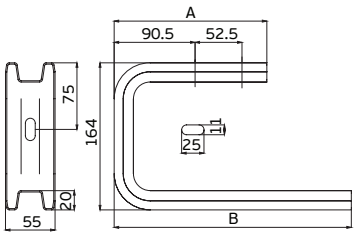




LABEL	L	H	TC MASS	TC VE-03 VE-04	TC VE-01	TC UV-10 UV-12 SV-10 SV-12	TC Load cap.	Application	CATALOGUE NUMBER	INOX MASS	INOX VE-03 VE-04	INOX VE-03 VE-05	INOX VE-01	INOX UV-10 UV-12 SV-10 SV-12	INOX Load capacity	Application	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	pcs	kg			kg/pc	pcs	pcs	pcs	pcs	kg		
NPK-099	110	100	0.35	2	1	2	180	WALL PNZ 007, PNZ 077	100231	0.35	2	1	1	2	180	WALL PNZ 007, PNZ 077	100445
NPK-099	210	100	0.60	2	1	2	180		100232	0.60	2	2	1	2	180		100446
NPK-099	310	100	0.75	2	1	2	180		100233	0.75	2	2	1	2	180		103579
NPK-099	410	100	1.10	2	1	2	180		100234	1.10	2	2	1	2	180		123272

UNKLL bracket

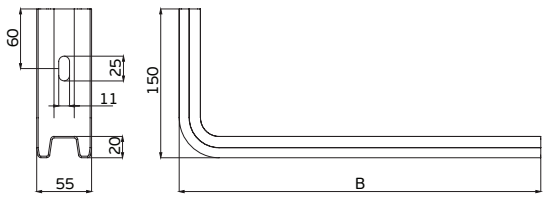




LABEL	L	H	SC						INOX					
			MASS	VE-03	SVU	Wall load capacity	Ceiling load capacity	CATALOGUE NUMBER	MASS	VE-03	SVU	Wall load capacity	Ceiling load capacity	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	kg	kg		kg/pc	pcs	pcs	kg	kg	
UNKLL-100	118	165	0.40	2	1	110	100	116094	0.40	2	1	110	100	119923
UNKLL-200	170	265	0.56	2	2	110	70	116095	0.56	2	2	110	70	122399
UNKLL-300	170	365	0.67	2	2	70	40	116096	0.67	2	2	70	40	122398
UNKLL-400	170	465	0.78	2	2	50	35	121932	0.78	2	2	50	35	121971

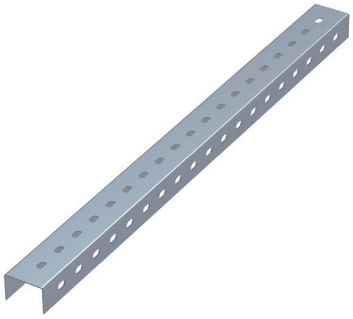
NKL bracket





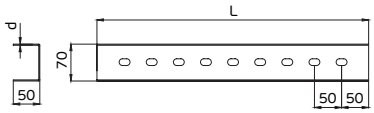
LABEL	B	SC					INOX				
		MASS	VE-03	SVU	Wall load capacity	CATALOGUE NUMBER	MASS	VE-03	SVU	Wall load capacity	CATALOGUE NUMBER
	mm	kg/pc	pcs	pcs	kg		kg/pc	pcs	pcs	kg	
NKL-100	165	0.30	2	1	110	116148	0.30	2	1	110	126685
NKL-200	265	0.40	2	1	110	116149	0.40	2	1	110	126686
NKL-300	365	0.50	2	1	70	116150	0.50	2	1	70	126687
NKL-400	465	0.60	2	1	50	12201	0.60	2	1	50	126688

PNZL-007 perforated U support



LABEL	L	SC				INOX			
		D	MASS	UV-12 SV-12	CATALOGUE NUMBER	D	MASS	UV-12 SV-12	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs		mm	kg/pc	pcs	
PNZL-007	500	2.0	1.25	2	100871	2.0	1.25	2	117162
PNZL-007	1000	2.5	2.35	3	100872	2.5	2.35	3	125806
PNZL-007	1500	2.5	4.25	3	100948	2.5	4.25	3	125807
PNZL-007	2000	3.0	7.00	4	100949	3.0	7.00	4	118812

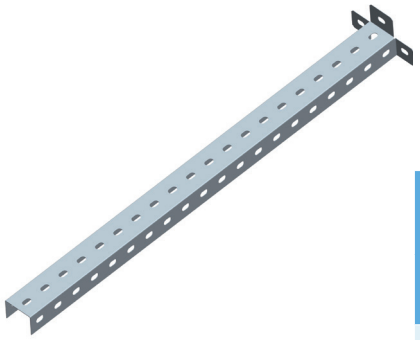
NOTE: a table with permissible load capacities for unilateral static load is provided below:



Bracket	110	210	310	410	510	610	710	810
F (kg)	1000	500	350	250	220	180	150	120

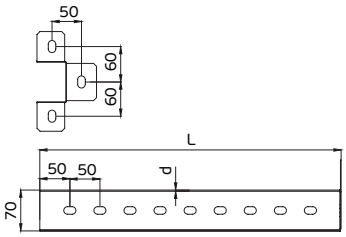
The permissible load capacity for symmetric static load of the ceiling mount is F = 1500 kg.
NOTE: the values given in the table refer exclusively to the fastening of the brackets to the PNZ using the VE-01!

PNZL-077 perforated U support



LABEL	L	SC				INOX			
		D	MASS	UV-12 SV-12	CATALOGUE NUMBER	D	MASS	UV-12 SV-12	CATALOGUE NUMBER
	mm	mm	kg/pc	pcs		mm	kg/pc	pcs	
PNZL-077	500	2.0	1.25	3	100873	2.0	1.30	3	101822
PNZL-077	1000	2.5	2.35	3	100874	2.5	3.10	3	112324

NOTE: a table with permissible load capacities for unilateral static load is provided below:



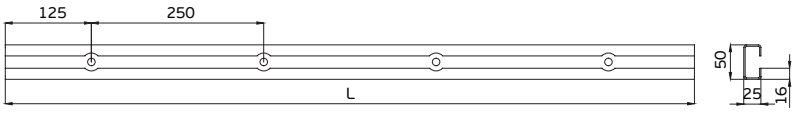
Bracket	110	210	310	410	510	610	710	810
F (kg)	1000	500	350	250	220	180	150	150

The permissible load capacity for symmetric static load of the ceiling mount is F = 1500 kg.
NOTE: the values given in the table refer exclusively to the fastening of the brackets to the PNZ using the VE-01!

SUSPENSION AND SUPPORTING PARTS

ULL-111 installation bar



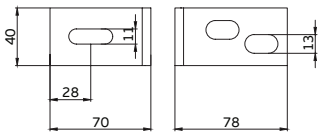


Mounted on a metal structure or on (into) a wall.

LABEL	L	SC				TC				INOX			
		D	MASS	UV-10 SV-10	CATALOGUE NUMBER	D	MASS	UV-10 SV-10	CATALOGUE NUMBER	D	MASS	UV-10 SV-10	CATALOGUE NUMBER
	mm	mm	kg/m	kg/m		mm	kg/m	kg/m		mm	kg/m	kg/m	
ULL-111	500	2	0.93	2	100375	2	0.9	2	100256	2	0.93	2	115311
ULL-111	1000	2	1.86	2	100868	2	1.9	2	100257	2	1.86	2	118484
ULL-111	1500	2	2.78	4	100946	2	2.8	4	100258	2	2.78	4	125812
ULL-111	2000	2	3.71	4	100113	2	3.7	4	100259	2	3.71	4	117346

K corner mount

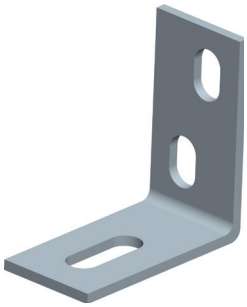


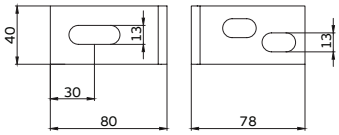


It is used for fastening a mounted perforated cable support to a wall. (PNZ-007)

LABEL	TC			INOX		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
K	6	0.250	100356	6	0.250	125817

KP corner mount

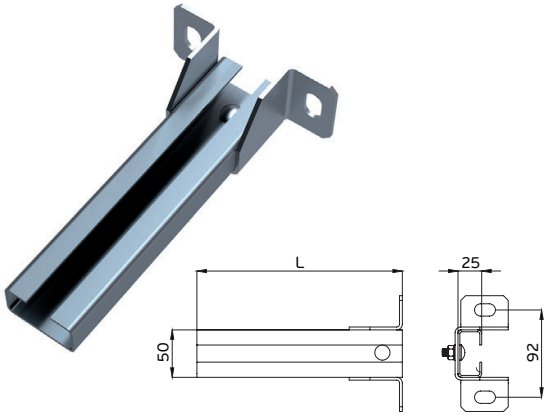




LABEL	TC		
	D	MASS	CATALOGUE NUMBER
	mm	kg/m	
KP	6	0.250	124842

It is used for fastening a mounted perforated cable support to a wall. (PNZ-007)

SNL-066 non-perforated ceiling mount



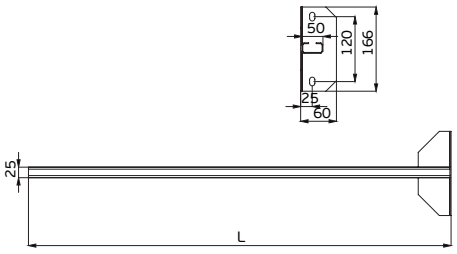
LABEL	L	SC			INOX		
		MASS	UV-10 SV-10	CATALOGUE NUMBER	MASS	UV-10 SV-10	CATALOGUE NUMBER
	mm	pcs	pcs		pcs	pcs	
SNL-066	500	1.15	2	100869	1.15	2	125813
SNL-066	1000	2.02	2	100870	2.02	2	125814

Non-perforated ceiling mounts are used for precise regulation of the route level. They are secured to a metal structure or to a concrete ceiling (floor) using the UV base installation bolts.

SN-066 non-perforated ceiling mount



LABEL	L	TC		
		MASS	UV-10 SV-10	CATALOGUE NUMBER
	mm	pcs	pcs	
SN-066	500	1.60	2	100264
SN-066	1000	2.60	2	100265
SN-066	1500	3.60	2	100266
SN-066	2000	4.60	2	100267



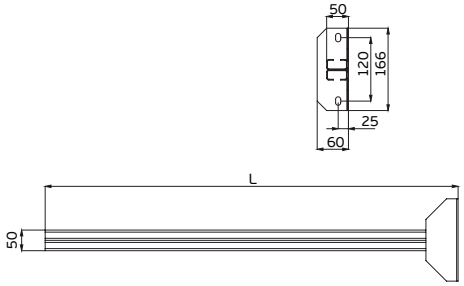
Permissible load capacities for unilateral static load are provided in the table below:

Bracket	110	210	310	410
F (kg)	240	120	80	60

SN-006 non-perforated ceiling mount



LABEL	L	TC		
		MASS	UV-10 SV-10	CATALOGUE NUMBER
	mm	pcs	pcs	
SN-006	500	2.60	2	100260
SN-006	1000	4.60	2	100261
SN-006	1500	6.50	2	100262
SN-006	2000	8.70	2	100263

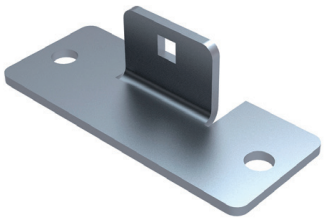


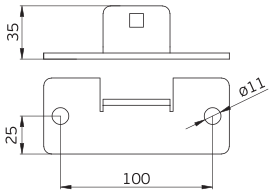
Permissible load capacities for unilateral static load are provided in the table below:

Bracket	110	210	310	410
F (kg)	600	300	200	150

SUSPENSION AND SUPPORTING PARTS

SE-444 fastening component

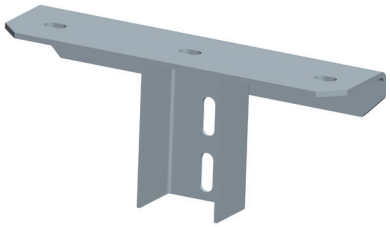


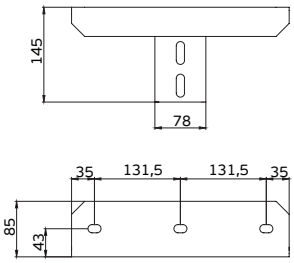


The SE-444 fastening component serves to secure the UL-111 installation bar to the SN-066 and SN-006 ceiling mounts with 2
VE-02 fasteners and 1 VE-05 fastener.
The suspension assembly comprised of: SE-444, SN-066 and UL-111 is used
for installing cable supports of greater width and load capacity.

LABEL	TC			INOX		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
SE-444	4	0.148	100354	4	0.148	125815

SN-022 ceiling mount



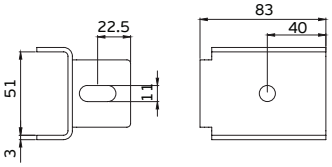


Secure the PNZ-007 to this mount. It is fastened to the ceiling using three SV-12/UV-12 bolts.

LABEL	TC		
	D	MASS	CATALOGUE NUMBER
	mm	kg/m	
SN-022	6	2.2	100276

SN-666 floor fastener

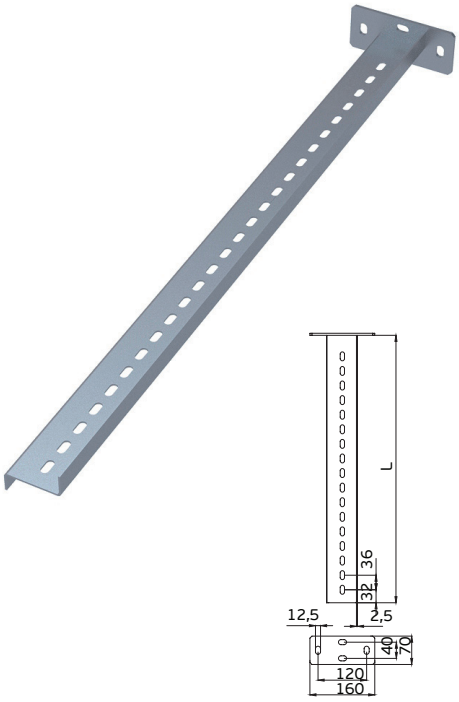




LABEL	TC			INOX		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
SN-666	3	0.250	100355	3	0.250	125816

It serves to secure the SN-066 and SN-006 non-perforated ceiling mounts to a floor using 1 VE-02 fastener and 1 SV-10/UV-10 fastener.

PNZ-005 perforated ceiling mount



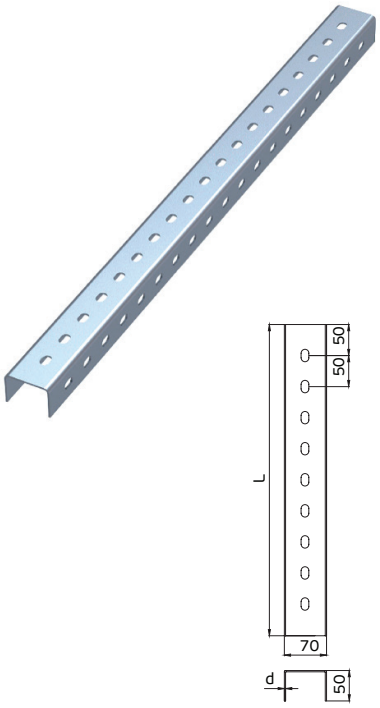
LABEL	L	D	TC MASS	TC UV-10 SV-10	TC CATALOGUE NUMBER
	mm	mm	pcs	pcs	
PNZ-005	500	2.5	1.7	4	100278
PNZ-005	1000	2.5	3.0	4	100279
PNZ-005	1500	2.5	4.4	4	100280
PNZ-005	2000	2.5	5.5	4	100281

NOTE: a table with permissible load capacities for unilateral static load is provided below:

Bracket	160	260	360	460	560	660
F (kg)	700	400	250	200	150	130

The permissible load capacity for symmetric static load of the ceiling mount is F = 1000 kg.

PNZ-007 perforated U support



LABEL	L	D	TC MASS	TC UV-10 SV-10	TC CATALOGUE NUMBER
	mm	mm	pcs	pcs	
PNZ-007	500	2.0	1.30	2	100268
PNZ-007	1000	2.5	3.16	3	100269
PNZ-007	1500	2.5	4.75	3	100270
PNZ-007	2000	3.0	7.50	4	100271

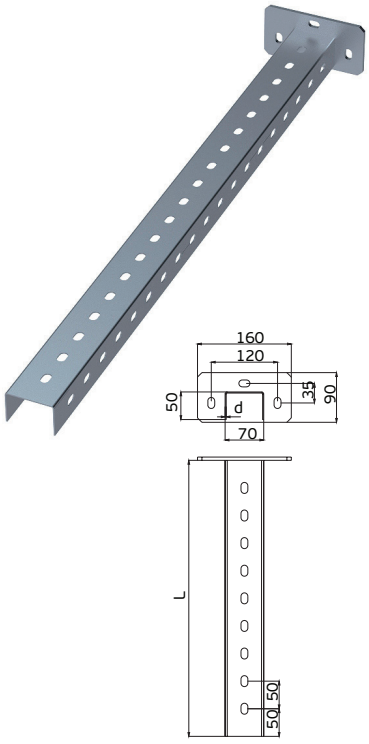
NOTE: a table with permissible load capacities for unilateral static load is provided below:

Bracket	110	210	310	410	510	610	710	810
F (kg)	1000	500	350	250	220	180	150	120

The permissible load capacity for symmetric static load of the ceiling mount is F = 1500 kg.

SUSPENSION AND SUPPORTING PARTS

PNZ-077 perforated ceiling mount



LABEL	L	TC				INOX			
		D	MASS	UV-10 SV-10	CATALOGUE NUMBER	D	MASS	UV-10 SV-10	CATALOGUE NUMBER
	mm	mm	kg/m	kg/m		mm	kg/m	kg/m	
PNZ-077	500	2.0	1.60	3	100272	2.0	1.60	3	125809
PNZ-077	1000	2.5	3.46	3	100273	2.5	3.46	3	106796
PNZ-077	1500	2.5	5.05	3	100274	2.5	5.05	3	125810
PNZ-077	2000	3.0	7.80	3	100275	3.0	7.80	3	125811

NOTE: a table with permissible load capacities for unilateral static load is provided below:

Bracket	110	210	310	410	510	610	710	810
F (kg)	1000	500	350	250	220	180	150	120

The permissible load capacity for symmetric static load of the ceiling mount is F = 1500 kg.

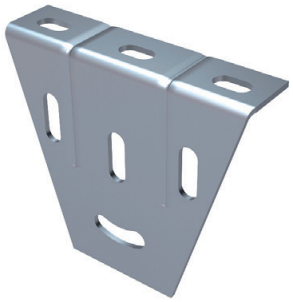
PNZ connector

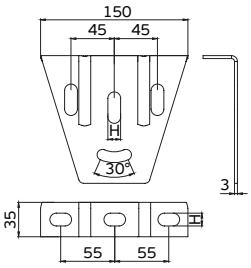


LABEL	TC			INOX		
	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	kg/m		mm	kg/m	
PNZ connector	3	0.6	100277	3	0.6	126716

It is used to connect perforated supports using a Ve-04 bolt fastener.

KSK short ceiling bracket



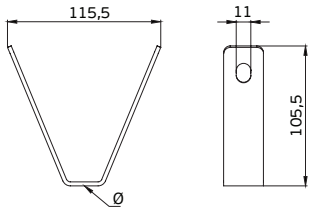


The short ceiling bracket is used for installing the PNZL-007, PNZ-007, UP and CPS perforated supports onto a slanted ceiling.
The support is fixed to the bracket using 2 VE-04 bolts, and the bracket is fixed to the ceiling using 3 SV-10/UV-10 installation bolts.

LABEL	H	SC				TC				INOX			
		MASS	UV/ SV-10 UV/ SV-10	VE-04 VE-11	CATALOGUE NUMBER	MASS	UV/ SV-10 UV/ SV-10	VE-04 VE-11	CATALOGUE NUMBER	MASS	UV/ SV-10 UV/ SV-10	VE-04 VE-11	CATALOGUE NUMBER
	mm	kg	pcs	pcs		kg	pcs	pcs		kg	pcs	pcs	
KSK-10	11	0.4	3	2	133089	0.4	3	2	133090	0.4	3	2	133182
KSK-12	13	0.4	3	2	119759	0.4	3	2	125259	0.4	3	2	125821

TN trapezoidal mount



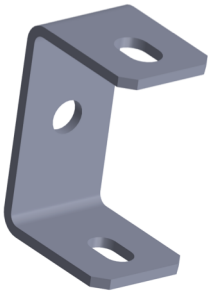


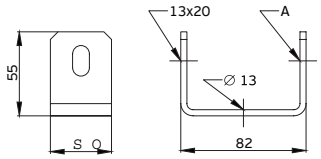
The trapezoidal mount is secured to the trapezoidal sheeting using the VE-TN bolt, catalogue number: 141086

LABEL	DIAMETER	SC		TC		INOX	
		MASS	CATALOGUE NUMBER	MASS	CATALOGUE NUMBER	MASS	CATALOGUE NUMBER
	Φ	kg/pc		kg/pc		kg/pc	
TN 6	7	0.12	133087	0.21	133088	0.12	133195
TN 8	9	0.12	129684	0.21	127437	0.12	133196
TN 10	11	0.12	122311	0.21	132749	0.12	125826

SUSPENSION AND SUPPORTING PARTS

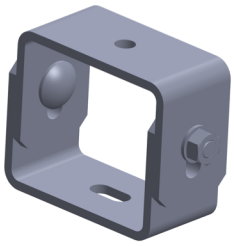
NNS threaded bar mount

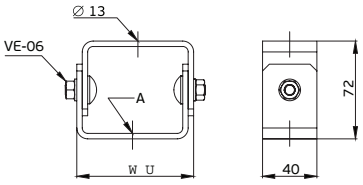




LABEL	A	D	MASS	UV/SV-10 UV/SV-12	CATALOGUE NUMBER	D	MASS	UV/SV-10 UV/SV-12	CATALOGUE NUMBER
		TC				INOX			
	mm	mm	kg/pc	pcs		mm	kg/pc	pcs	
NNS 6	7x20	4	0.21	1	122312	4	0.21	1	125827
NNS 8	9x20	4	0.21	1	122313	4	0.21	1	125828
NNS 10	11x20	4	0.21	1	122314	4	0.21	1	125829
NNS 12	13x20	4	0.21	1	122315	4	0.21	1	125830

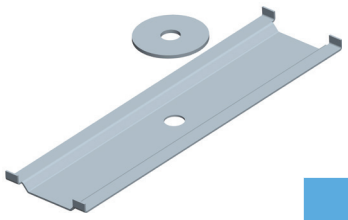
NNSK slanted threaded bar mount

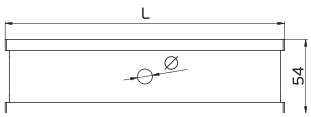




LABEL	A	D	MASS	UV/SV-10 UV/SV-12	CATALOGUE NUMBER	D	MASS	UV/SV-10 UV/SV-12	CATALOGUE NUMBER
		TC				INOX			
	mm	mm	kg/pc	pcs		mm	kg/pc	pcs	
NNSK 6	7x20	4	0.48	1	122316	4	0.48	1	125831
NNSK 8	9x20	4	0.48	1	122317	4	0.48	1	125832
NNSK 10	11x20	4	0.48	1	122318	4	0.48	1	125833
NNSK 12	13x20	4	0.48	1	122319	4	0.48	1	125834

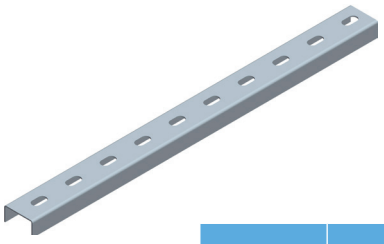
SNKP channel carrier

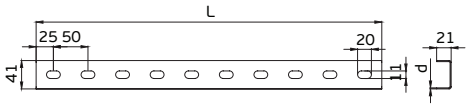




LABEL	L	DIAMETER	SC MASS	SC CATALOGUE NUMBER	TC MASS	TC CATALOGUE NUMBER	INOX MASS	INOX CATALOGUE NUMBER
	mm	Φ	kg/pc		kg/pc		kg/pc	
SNKP-50	54	7	0.02	119722	0.02	134226	0.02	125835
SNKP-100	104	9	0.05	115905	0.05	134227	0.05	125836
SNKP-200	204	11	0.13	118299	0.13	134228	0.13	125837

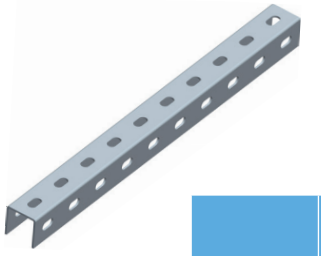
UP 41x21 perforated U support

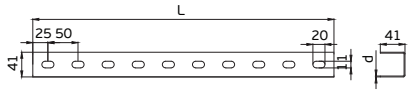




LABEL	L	SC			TC			INOX		
		D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm	mm		mm	kg/m		mm	kg/m	
UP 41x21	3000	1.50	0.88	133072	1.50	0.88	124933	1.50	0.92	126777
UP 41x21	3000	2.50	1.43	125173	2.50	1.43	133073	-	-	-

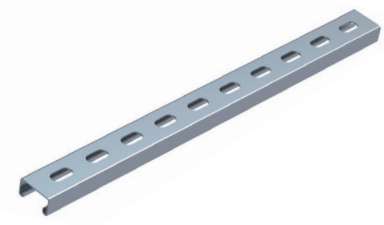
UP 41x41 perforated U support

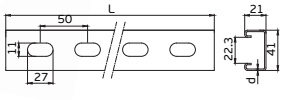




LABEL	L	SC			TC			INOX		
		D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm	mm		mm	kg/m		mm	kg/m	
UP 41x41	3000	1.50	1.26	124967	1.50	1.26	124934	1.50	1.40	126780
UP 41x41	3000	2.50	2.06	133074	2.50	2.06	129653	-	-	-

CPS 41x21 perforated C support

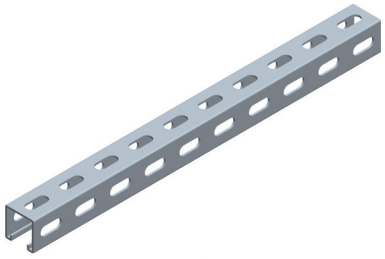


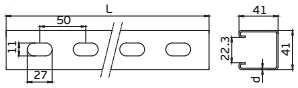


LABEL	SC			
	L	D	MASS	CATALOGUE NUMBER
	mm	mm	pcs	
CPS 41x21	3000	1.50	1.15	130202
CPS 41x21	6000	1.50	1.15	130203
CPS 41x21	3000	2.50	1.78	119755
CPS 41x21	6000	2.50	1.78	119758

SUSPENSION AND SUPPORTING PARTS

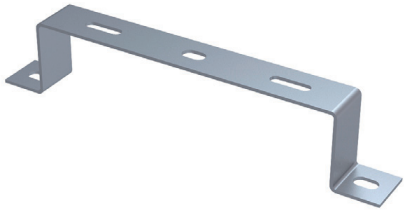
CPS 41x41 perforated C support

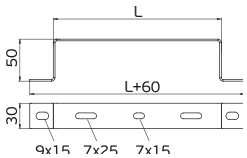




LABEL	SC			
	L	D	MASS	CATALOGUE NUMBER
	mm	mm	pcs	
CPS 41x41	3000	1.50	1.65	130204
CPS 41x41	6000	1.50	1.65	130205
CPS 41x41	3000	2.50	2.61	119757
CPS 41x41	6000	2.50	2.61	119758

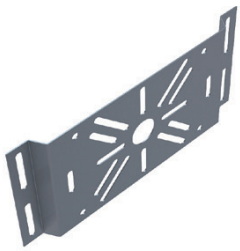
PN floor mount

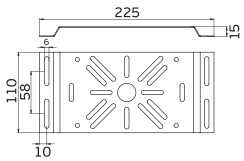




LABEL	L	SC		TC		INOX	
		MASS	CATALOGUE NUMBER	MASS	CATALOGUE NUMBER	MASS	CATALOGUE NUMBER
	mm	mm		kg/m		kg/m	
PN 50	50	0.13	128330	0.13	122856	0.13	133186
PN 100	100	0.16	119760	0.21	120193	0.16	125822
PN 200	200	0.23	119761	0.31	120194	0.23	125823
PN 300	300	0.50	140423	0.39	119762	0.38	125824
PN 400	400	0.74	140424	0.48	119763	0.47	125825
PN 500	500	0.96	137757	0.87	122858	0.87	133187
PN 600	600	1.30	142638	1.04	122854	1.04	133188

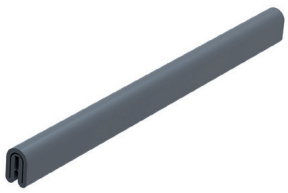
NRK distribution cabinet mount

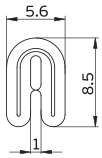




LABEL	SC		
	L	MASS	CATALOGUE NUMBER
	mm	pcs	
NRK	1.25	0.20	119764

ZR edge cover



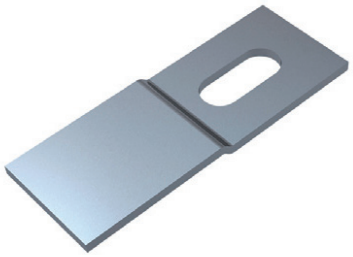


LABEL	CATALOGUE NUMBER
ZR	156160

The protective edge cover serves to protect the ends of trays, connectors, cut points, etc.
Material: rubber
Colour: black
Cat. number: 156160
It is ordered by metre of length.

3.4.2. Binding fasteners

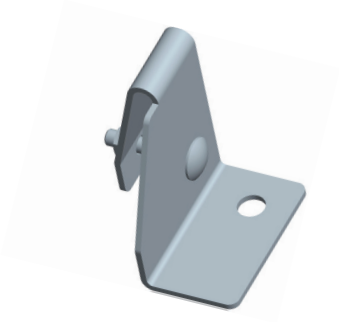
LDR cable ladder fastener

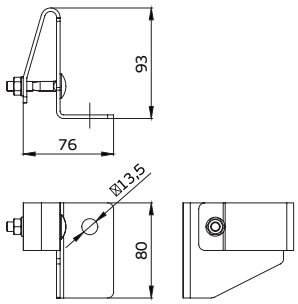


LABEL	D	SC		TC	
		MASS	CATALOGUE NUMBER	MASS	CATALOGUE NUMBER
	mm	mm		kg/m	
LDR	2	0.015	100035	0.015	103352

It is used to secure cable ladders to brackets using VE-03 bolts.

LDRU mount

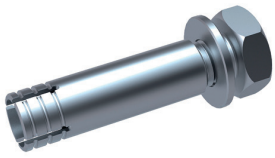




LABEL	D	SC		TC		
		MASS	CATALOGUE NUMBER	D	MASS	CATALOGUE NUMBER
	mm	mm		mm	kg/m	
LDRU	3	0.30	105074	3	0.34	120534

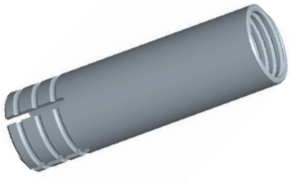
The LDRU mount is used for vertical installation of cable ladders.

UV, UVU installation bolt



LABEL	DIAMETER OF STEEL ANCHOR	GC		INOX		
		BOLT	CATA-LOGUE NUMBER	BOLT	CATALOGUE NUMBER	
	D [mm]				A2	A4
UV-6	8	M6x15	100287	M6x15	125849	126810
UV-8	10	M8x20	100288	M8x20	118485	126811
UV-10	12	M10x25	100289	M10x25	115313	115313
UVU-10	12	M10x40	127358	M10x40	115666	133207
UV-12	15	M12x30	100290	M12x30	126813	126813

TJS steel anchor



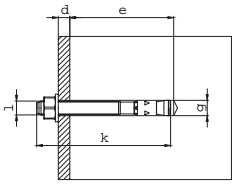
LABEL	DIAMETER OF STEEL ANCHOR	LENGTH	CATALOGUE NUMBER
	D [mm]		
TJS-6	8	25	102564
TJS-8	10	30	102565
TJS-10	12	40	102566
TJS12	15	50	102567

Features GC surface protection.

SUSPENSION AND SUPPORTING PARTS

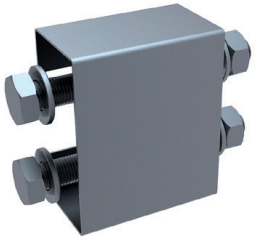
SV, SVU tie-bolt





LABEL	M	L	E max.	H	F min.	GC	TC	INOX	
						CATALOGUE NUMBER	CATALOGUE NUMBER	CATALOGUE NUMBER	
	[mm]	[mm]	[mm]	[mm]	[mm]			A2	A4
SV-6	M6	60	2	6	55	128103	128245	128249	128253
SV-8	M8	75	5	8	65	128242	128246	128250	128260
SV-10	M10	90	10	10	70	128243	128247	128251	-
SV-10	M10	95	10	10	70	149373	150106	142083	128255
SV-10	M10	115	35	10	75	-	128411	-	150097
SV-10	M10	120	40	10	70	128410	-	128412	128413
SV-12	M12	110	18	12	85	128244	128248	128252	128262

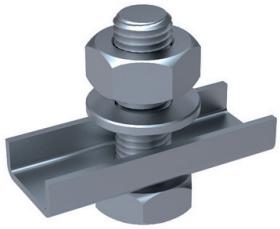
VE-01 fastener



LABEL	MASS	SC	TC	INOX		
		CATALOGUE NUMBER	CATALOGUE NUMBER	CATALOGUE NUMBER		
	Kg			1.4301	1.4404	1.4571
VE-01	0.2 kg	115583	122499	101373	126815	126816

It is used to secure a bracket to PNZ mounts. Fastening bolt size: M12x100

VE-02 fastener



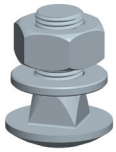
LABEL	MASS	FASTENING BOLT SIZE	GC	TC	INOX		
			CATALOGUE NUMBER	CATALOGUE NUMBER	CATALOGUE NUMBER		
	Kg	Kg			1.4301	1.4404	1.4571
VE-02	0.08 kg	M10x30	100293	123532	101374	126817	126818

It is used for securing the NPK-004 and NPK-044 brackets to the UL-111 installation bar and the SN-006 and SN-066 non-perforated ceiling mounts. Fastening bolt size: M10x30

VE fastener



VE-03



VE-05



VE-06

VE-03 is used to connect perforated cable trays and stiffeners with brackets. VE-04 is exceptionally used to secure brackets to PNZ mounts. VE-05 is used to connect the NPK-005 and NPK-055 brackets with mounts. VE-06 is used to connect cable ladders with connectors. VE-11 is used with UP and CPS profiles.

LABEL	M	MASS	GC	TC	INOX	
			CATALOGUE NUMBER	CATALOGUE NUMBER	CATALOGUE NUMBER	
	[mm]	[kg]			A2	A4
VE-03	M6x12	0.04	102543	121103	102513	126243
VE-06	M8x16	0.06	120803	134013	122713	126819
VE-05	M10x20	0.08	100296	-	106578	126820
VE-04	M12x35	0.07	100295	133091	119186	126244
VE-11	M10x25	0.06	130994	133091	138762	-

NS threaded bar

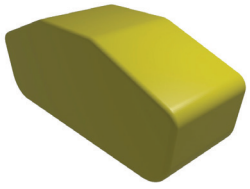




LABEL	M	MASS	GC
			CATALOGUE NUMBER
	[mm]	[kg]	
NS M6	1000	0.18	102556
NS M6	2000	0.36	119741
NS M6	3000	0.54	119742
NS M8	1000	0.3	102555
NS M8	2000	0.6	119744
NS M8	3000	0.9	119745

LABEL	M	MASS	GC
			CATALOGUE NUMBER
	[mm]	[kg]	
NS M10	1000	0.44	104871
NS M10	2000	0.88	129124
NS M10	3000	1.32	120975
NS M12	1000	0.64	102898
NS M12	2000	1.28	140622
NS M12	3000	1.92	125275

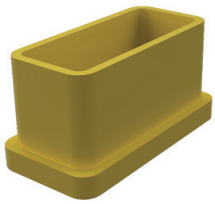
KUNKLL protective plastic cap



LABEL	Protective plastic cap
	CATALOGUE NUMBER
KUNKLL	134599

Protective plastic cap for the UNKLL and NKL mounts.
Colour: yellow RAL 1016

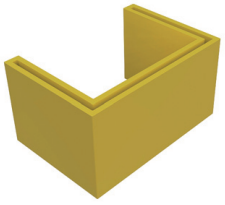
KSN protective plastic cap



LABEL	Protective plastic cap
	CATALOGUE NUMBER
KSN	134600

Protective plastic cap for the SN-066, SN-006 and SNL-066 mounts.
Colour: yellow RAL 1016

KPNZ protective plastic cap



LABEL	Protective plastic cap
	CATALOGUE NUMBER
KPNZ	134601

Protective plastic cap for the PNZL-007, PNZL-077, PNZ-007 and PNZ-077 mounts.
Colour: yellow RAL 1016

E90
E90
E90
E90

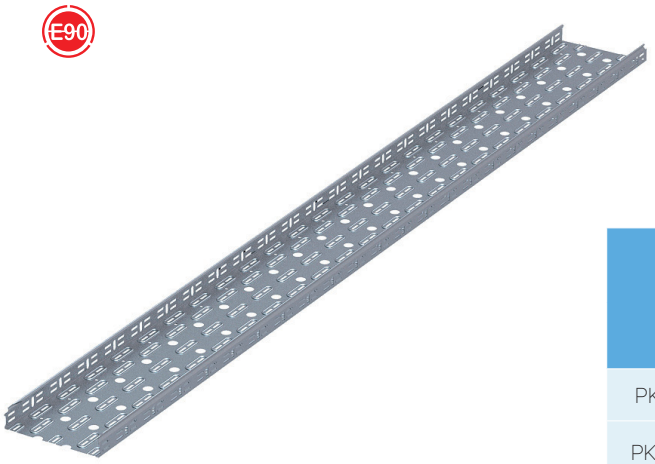


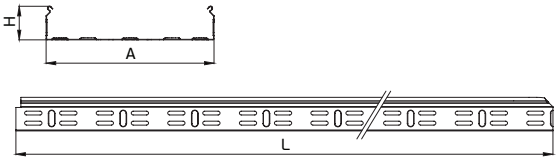
4.0 FIRE-RESISTANT CABLE TRAYS AND ACCESSORIES

4.1. Fire-resistant perforated cable trays and accessories classed E90 according to HR DIN 4102-12 (cable-specific)

When installing fire-resistant cable trays, it is mandatory to follow the revised version of the ME02-08. Fire-resistant perforated cable trays are marked in red with an E90 marking.

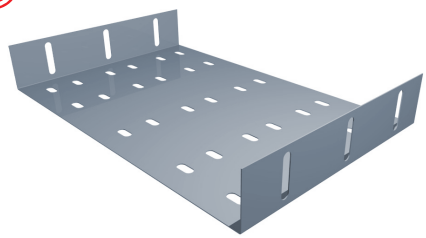
PKU-60 E30/90 perforated cable tray

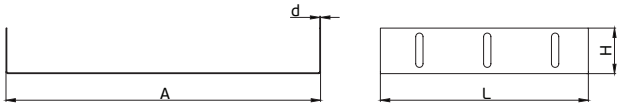




LABEL	A	H	SC L	SC D	SC MASS	CATALOGUE NUMBER
	mm	mm	mm	mm	kg/m	
PKU-50/30	50	30	3000	0.55	0.5	127498
PKU-100/60	100	60	3000	0.70	1.23	116220
PKU-200/60	200	60	3000	0.70	1.8	116221
PKU-300/60	300	60	3000	0.90	2.83	116222
PKU-400/60	400	60	3000	0.90	3.53	116223
PKU-500/60	500	60	3000	1.25	4.02	135497

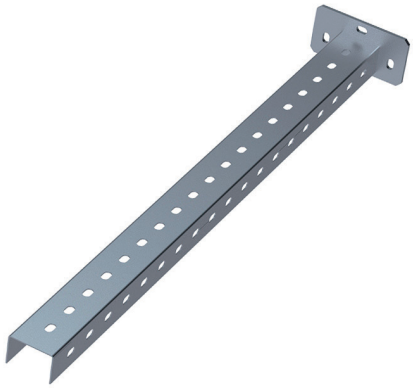
RSU-60 E30/90 flat connector

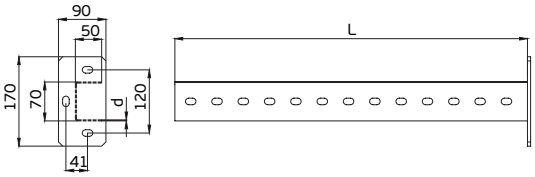




LABEL	A	H	SC L	SC D	SC MASS	SC VE-03	CATALOGUE NUMBER
	mm	mm	mm	mm	kg/m	pcs	
RSU-50/30	50	10	140	0.55	0.04	2	127499
RSU-100/60	100	44	135	0.7	0.25	4	116228
RSU-200/60	200	44	135	0.7	0.38	8	116229
RSU-300/60	300	44	135	0.9	0.72	8	116230
RSU-400/60	400	44	135	0.9	0.92	8	116231
RSU-500/60	500	44	135	1.25	1.1	8	135498

PNZ-077 E30/90 perforated ceiling mount

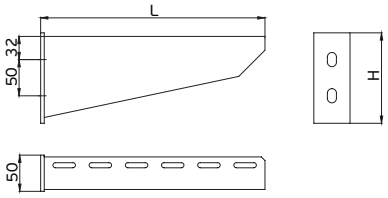




LABEL	L	TC			
		D	MASS	MFWA M12	CATA-LOGUE NUMBER
	mm	mm	kg/m	pcs	
PNZ-077	500	2.0	1.60	3	116252
PNZ-077	750	2.5	2.53	3	116885
PNZ-077	1000	2.5	3.46	3	116253
PNZ-077	1500	2.5	5.02	3	118249

NPK-009 E30/90 bracket



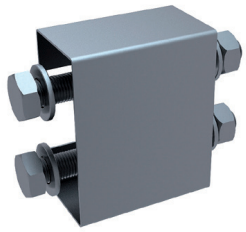


LABEL	L	H	TC				
			MASS	VE-03 VE-04	VE-01	MFWA M12	CATA-LOGUE NUMBER
	mm	mm	kg/pc	pcs	pcs	pcs	
NPK-009	110	100	0.37	1	1	1	116763
NPK-009	210	125	0.75	2	1	2	116760
NPK-009	310	125	1.15	2	1	2	116761
NPK-009	410	125	1.50	2	1	2	116762
NPK-009	510	125	2.30	2	1	2	135501

FIRE-RESISTANT PERFORATED CABLE TRAYS

VE-01 bolt

E90

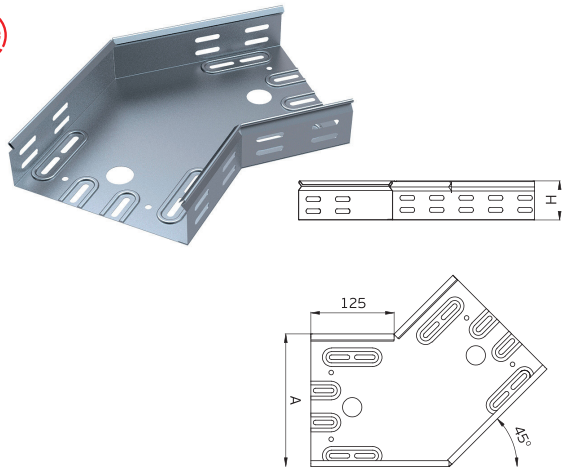


It is used to secure brackets to the PNZ mounts. Fastening bolt size: M12x100

LABEL	SC	
	MASS	CATALOGUE NUMBER
	kg/pc	
VE-01	0.2	115583

SHSU-60 E30/90 45° angle connector

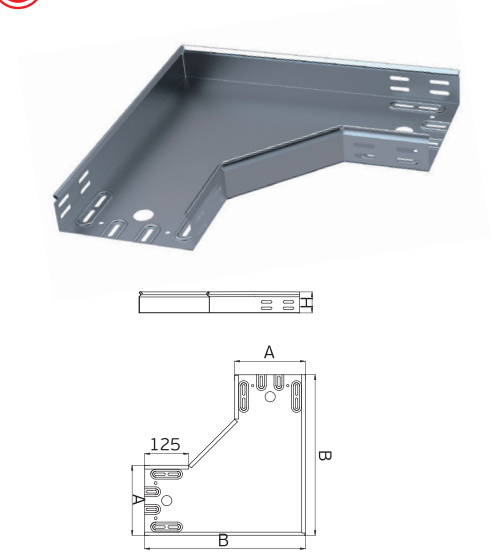
E90



LABEL	A	H	SC		
			D	MASS	CATALOGUE NUMBER
	mm	mm	mm	kg/pc	
SHSU-50/30	50	30	0.55	0.13	132856
SHSU-100/60	100	60	0.70	0.36	122286
SHSU-200/60	200	60	0.70	0.62	122287
SHSU-300/60	300	60	0.90	1.06	122288
SHSU-400/60	400	60	0.90	1.65	122289
SHSU-500/60	500	60	1.25	2.60	147703

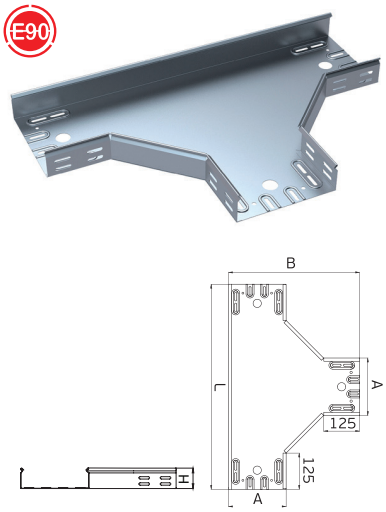
USU-60 E30/90 90° angle connector

E90



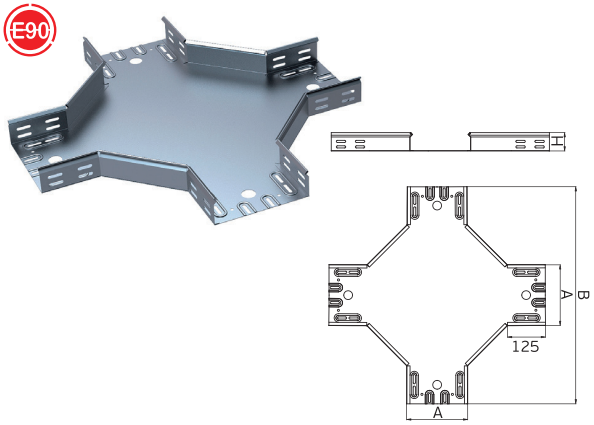
LABEL	A	B	H	SC		
				D	MASS	CATALOGUE NUMBER
	mm	mm	mm	mm	kg/pc	
USU-50/30	50	307	30	0.55	0.35	132861
USU-100/60	100	357	60	0.70	0.80	116232
USU-200/60	200	457	60	0.70	1.32	116233
USU-300/60	300	557	60	0.90	2.49	116234
USU-400/60	400	657	60	0.90	3.49	116235
USU-500/60	500	757	60	1.25	4.40	135954

TSU-60 E30/90 T connector



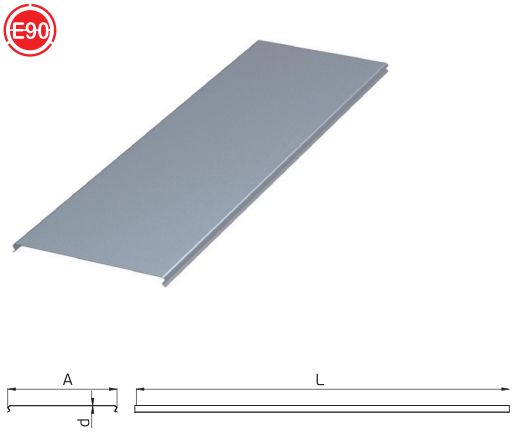
LABEL	A	B	L	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	mm	kg/pc	
TSU-50/30	50	307	564	30	0.55	0.56	132862
TSU-100/60	100	357	614	60	0.70	1.11	116240
TSU-200/60	200	457	714	60	0.70	1.96	116241
TSU-300/60	300	557	814	60	0.90	3.37	116242
TSU-400/60	400	657	914	60	0.90	3.82	116243
TSU-500/60	500	757	1014	60	1.25	5.75	135953

KSU-60 E30/90 cross connector



LABEL	A	B	H	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/pc	
KSU-50/30	50	564	30	0.55	1.60	132863
KSU-100/60	100	614	60	0.70	1.90	120125
KSU-200/60	200	714	60	0.70	3.10	122282
KSU-300/60	300	814	60	0.90	4.80	122283
KSU-400/60	400	914	60	0.90	6.70	122284
KSU-500/60	500	1014	60	1.25	8.42	147704

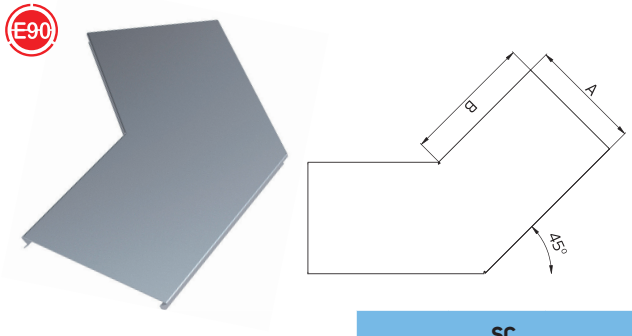
Cable tray cover PPKU E30/90 L = 2000



LABEL	A	L	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/pc	
PPKU-50/30	52	2000	0.55	0.36	132864
PPKU-100/60	102	2000	0.55	0.58	116224
PPKU-200/60	202	2000	0.55	1.00	116225
PPKU-300/60	302	2000	0.70	1.83	116226
PPKU-400/60	402	2000	0.70	2.38	116227
PPKU-500/60	502	2000	0.90	4.06	147705

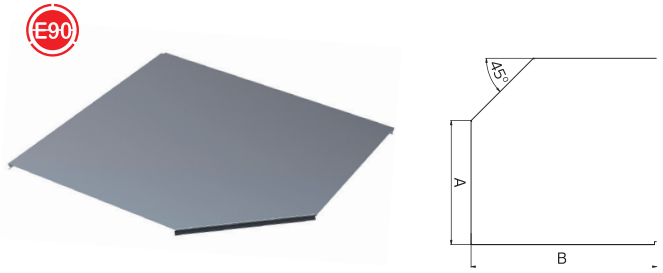
FIRE-RESISTANT PERFORATED CABLE TRAYS

PSHSU-60 E30/90 45° angle connector cover



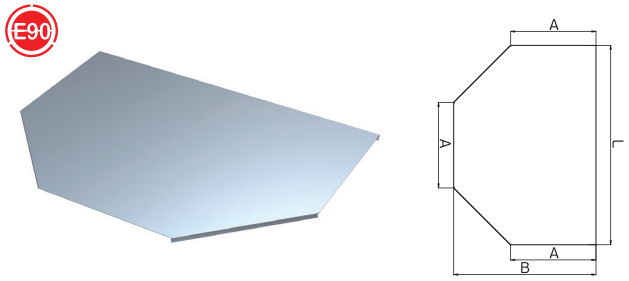
LABEL	A	B	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/pc	
PSHSU-50/30	52	124	0.55	0.10	132865
PSHSU-100/60	102	124	0.55	0.17	122294
PSHSU-200/60	202	124	0.55	0.35	122295
PSHSU-300/60	302	124	0.70	0.71	122296
PSHSU-400/60	402	124	0.70	1.02	122297
PSHSU-500/60	502	124	0.90	1.63	147706

PUSU-60 E30/90 90° angle connector cover



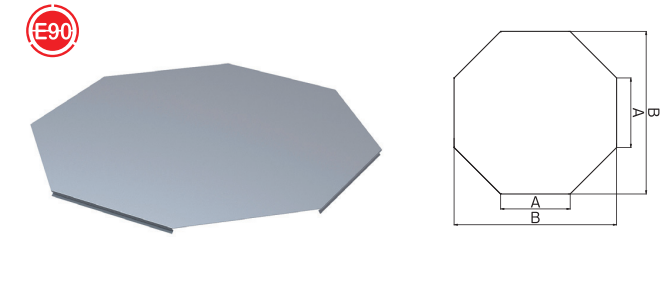
LABEL	A	B	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/pc	
PUSU-50	52	182	0.55	0.14	132866
PUSU-100	102	232	0.55	0.24	116236
PUSU-200	202	332	0.55	0.50	116237
PUSU-300	302	432	0.70	2.00	116238
PUSU-400	402	532	0.70	2.78	116239
PUSU-500	502	632	0.90	3.40	147707

PTSU-60 E30/90 T connector cover



LABEL	A	B	L	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/pc	
PTSU-50	52	182	314	0.55	0.35	132867
PTSU-100	102	232	364	0.55	1.55	116244
PTSU-200	202	332	464	0.55	1.01	116245
PTSU-300	302	432	564	0.70	2.00	116246
PTSU-400	402	532	664	0.70	3.05	116247
PTSU-500	502	632	764	0.90	4.11	147708

PKSU-60 E30/90 cross connector cover



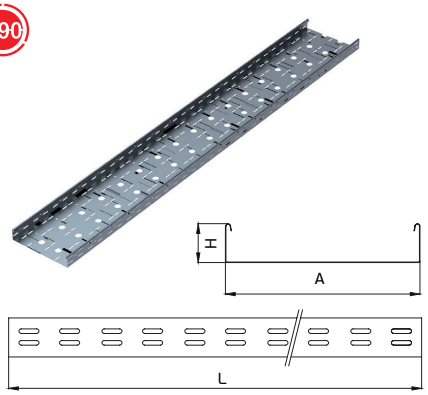
LABEL	A	B	SC D	SC MASS	SC CATA-LOGUE NUMBER
	mm	mm	mm	kg/pc	
PKSU-50	52	314	0.55	0.50	132868
PKSU-100	102	364	0.55	0.75	122290
PKSU-200	202	464	0.55	1.32	122291
PKSU-300	302	564	0.70	2.50	122292
PKSU-400	402	664	0.70	3.75	122293
PKSU-500	502	764	0.90	4.34	147709

4.2. Fire-resistant perforated cable trays and accessories classed E90 according to HR DIN 4102-12 (standardised)

When installing fire-resistant cable trays, it is mandatory to follow the design document.
All components of fire-resistant sections are marked in red with an E90 marking.

Perforated cable tray VO PK, L = 3000 mm

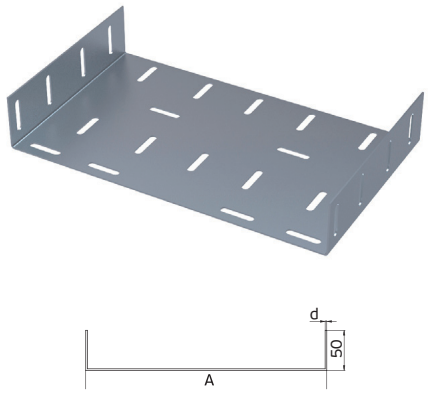
E90



LABEL	A	H	L	SC		
				D	MASS	CATA-LOGUE NUMBER
	mm	mm	mm	mm	kg/pc	
VO PK 100	100	60	3000	1.5	2.60	112836
VO PK 200	200	60	3000	1.5	3.70	111676
VO PK 300	300	60	3000	1.5	4.80	112838
VO PK 400	400	60	3000	1.5	6.00	112839

VO RS 50 tray connector

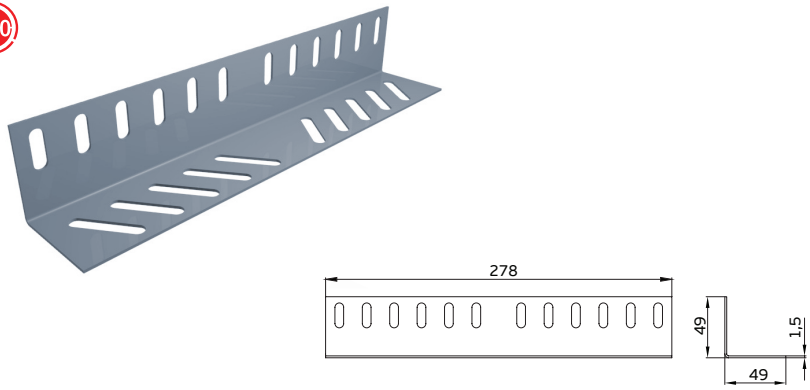
E90



LABEL	A	SC			
		D	MASS	VE-03	CATA-LOGUE NUMBER
	mm	mm	kg/pc	pcs	
VO RS 50	100	1.5	0.41	8	112833
VO RS 50	200	1.5	0.61	8	111906
VO RS 50	300	1.5	0.80	8	112834
VO RS 50	400	1.5	1.02	8	112835

VO RSK 50 tray reinforcement

E90

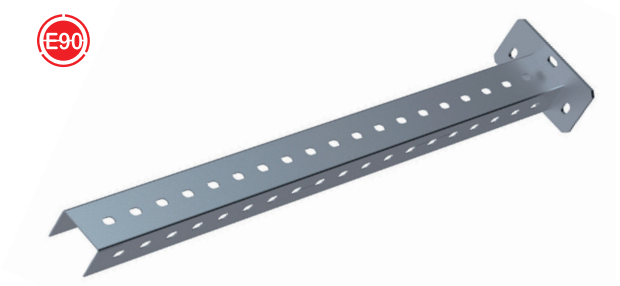


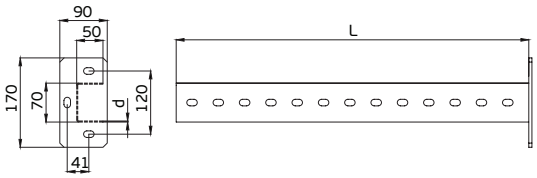
LABEL	SC	
	MASS	CATALOGUE NUMBER
	kg/pc	
VO RSK 50	0.27	122310

FIRE-RESISTANT PERFORATED CABLE TRAYS

VO PNZ-077 ceiling mount

E90



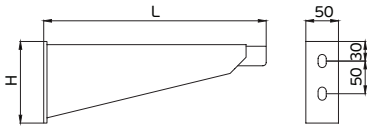


LABEL	L	TC D	MASS	VE-03	CATALOGUE NUMBER
	mm	mm	kg/m	pcs	
VO PNZ-077	500	3.0	1.60	3	112849
VO PNZ-077	750	3.0	2.53	3	112865
VO PNZ-077	1000	3.0	3.46	3	112848

VO NPK-009 bracket with adaptor

E90

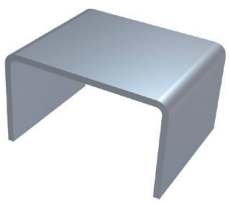




LABEL	L	TC MASS	VE-01	MFWA M12	VE-03	CATALOGUE NUMBER
	mm	kg/m	kg/m	kg/m	pcs	
VO NPK-099	140	0.75	2	2	2	113097
VO NPK-009	240	1.12	2	2	2	111662
VO NPK-009	340	1.50	2	2	2	112831
VO NPK-009	440	1.73	2	2	2	112832

VO UK connection stiffener

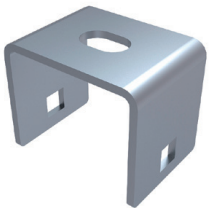
E90



LABEL	TC MASS	CATALOGUE NUMBER
	kg/m	
VO UK	0.252	114315

VO SA ceiling adaptor

E90



LABEL	TC MASS	CATALOGUE NUMBER
	kg/m	
VO SA	0.190	111611

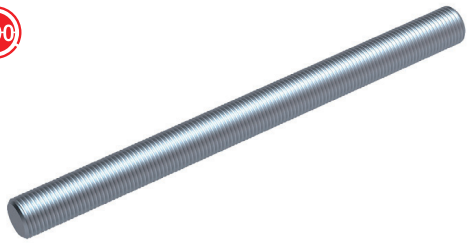
VO ZA wall adaptor

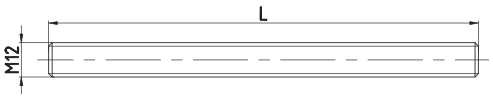
E90



LABEL	TC MASS	CATALOGUE NUMBER
	kg/m	
VO ZA	0.22	112880

M12 threaded bar





LABEL	L	TC MASS	TC CATA-LOGUE NUMBER
	mm	kg/pc	
NS M12	250	0.18	112861
NS M12	400	0.28	112862
NS M12	550	0.39	112863
NS M12	700	0.49	112864

M12 bolt for concrete



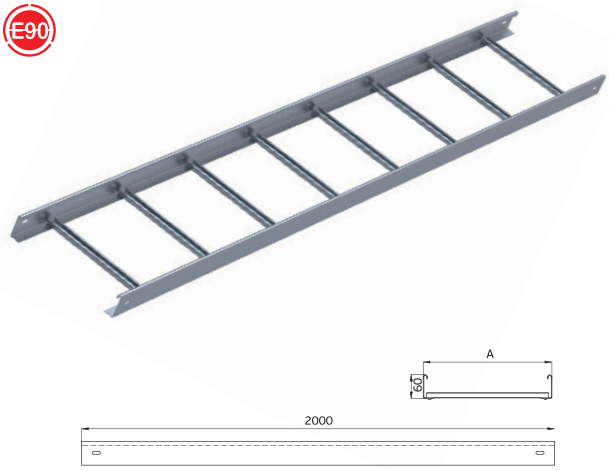
TYPE: MFWA M12×100
Mass: 0.140 kg/pc
Catalogue number: 116752



4.3. Fire-resistant cable ladders and accessories classed E90 according to HR DIN 4102-12

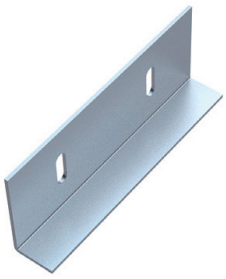
When installing fire-resistant cable ladders, it is mandatory to follow the ME01-08.
Fire-resistant cable ladders are marked in red with an E90 marking.

VO LK cable ladder



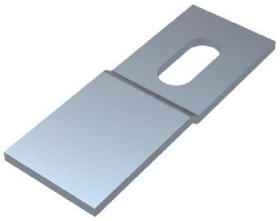
LABEL	A	D		MASS	CATALOGUE NUMBER
		SC			
	mm	Side rails mm	Steps mm	kg/m	
VO LK-200/60	200	1.5	0.90	2.50	112840
VO LK-300/60	300	1.5	0.90	2.60	112841
VO LK-400/60	400	1.5	0.90	2.80	112842

VO SLK cable ladder connector



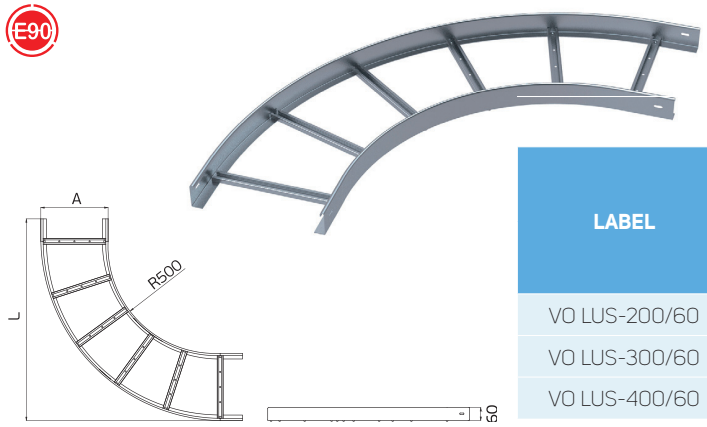
LABEL	SC	
	MASS	CATALOGUE NUMBER
	kg/m	
VO SLK-60	0.08	112843

VO LDR cable ladder fastener



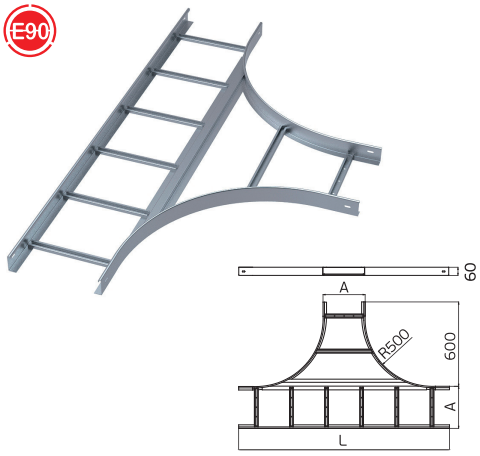
LABEL	SC	
	MASS	CATALOGUE NUMBER
	kg/m	
VO LDR	0.015	116945

VO LUS-60 90° angle connector



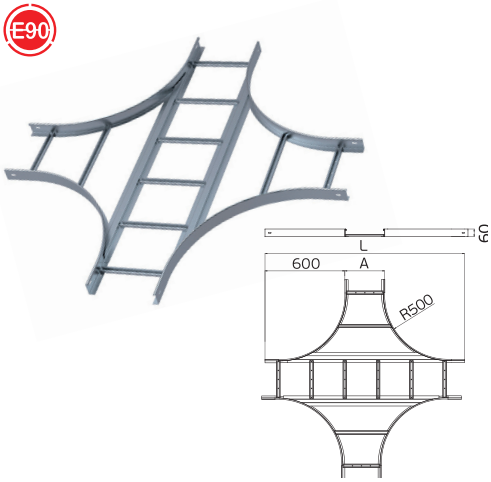
LABEL	A	L	SC			
			D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/pc	
VO LUS-200/60	200	800	1.5	0.90	2.8	134339
VO LUS-300/60	300	900	1.5	0.90	3.1	134340
VO LUS-400/60	400	1000	1.5	0.90	3.7	134341

VO LTS-60 T connector



LABEL	A	L	SC			
			D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/pc	
VO LTS-200/60	200	1400	1.5	0.90	5.5	134342
VO LTS-300/60	300	1500	1.5	0.90	5.8	134343
VO LTS-400/60	400	1600	1.5	0.90	6.1	134344

VO LKS-60 cross connector



LABEL	A	L	SC			
			D		MASS	CATALOGUE NUMBER
	mm	mm	Side rails mm	Steps mm	kg/pc	
VO LKS-200/60	200	1400	1.5	0.90	9.8	134345
VO LKS-300/60	300	1500	1.5	0.90	10.3	134346
VO LKS-400/60	400	1600	1.5	0.90	10.7	134347



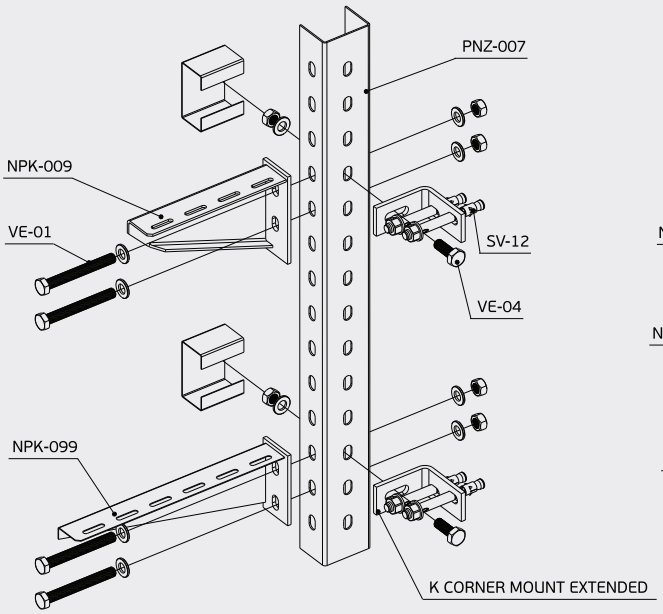
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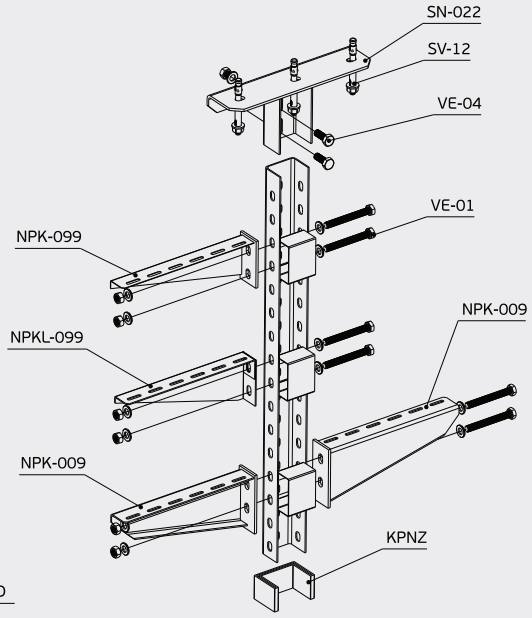
INSTRUCTIONS FOR INSTALLATION, MAINTENANCE AND TRANSPORT

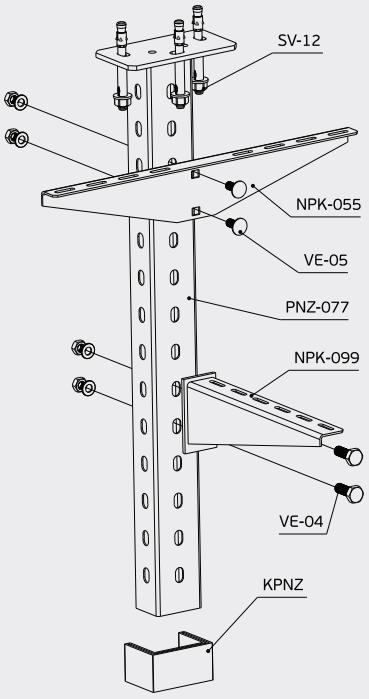


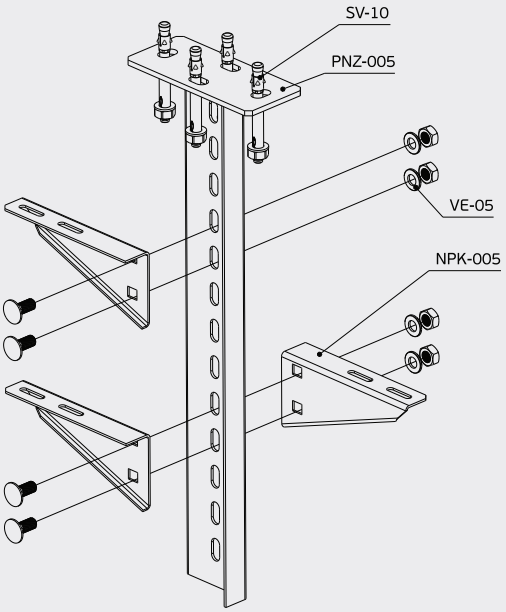
5.1. Installation examples

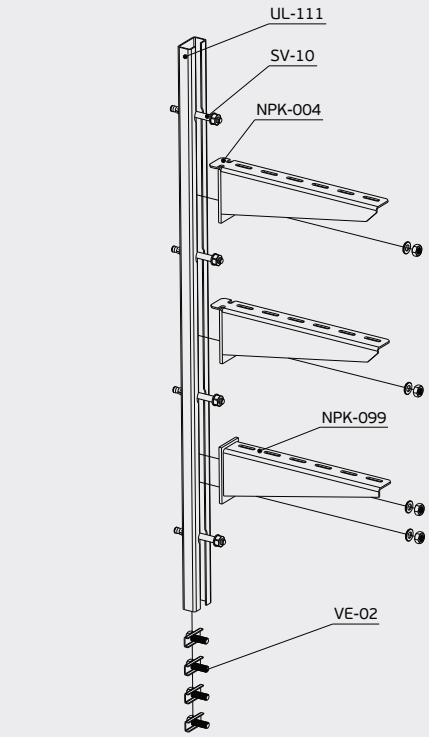
Possible combinations and installation examples for cable supports and accesories are given in the figures below.

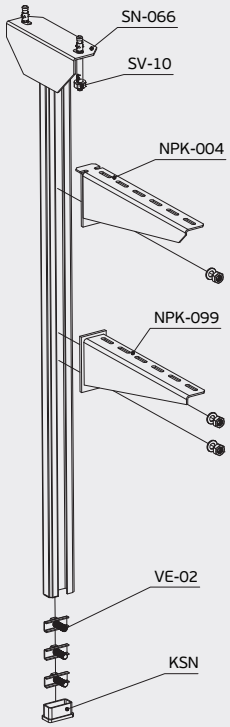


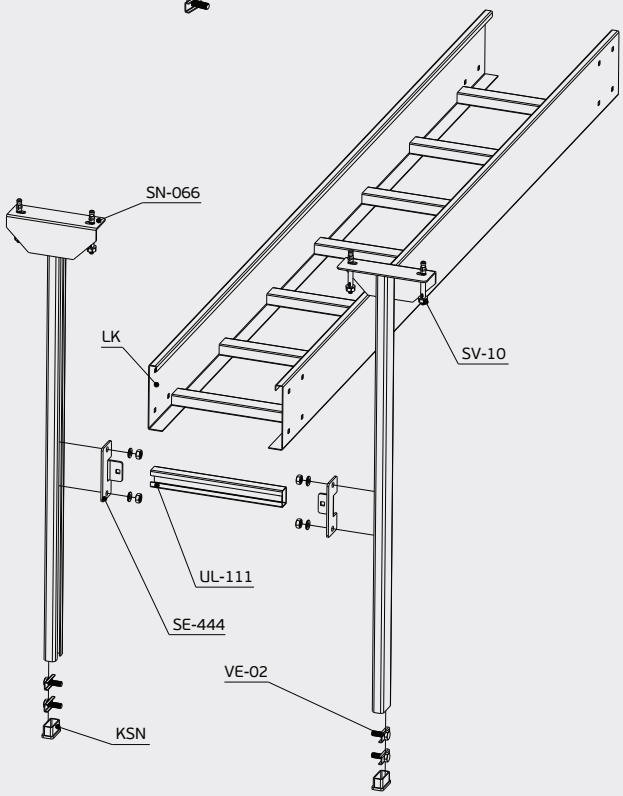


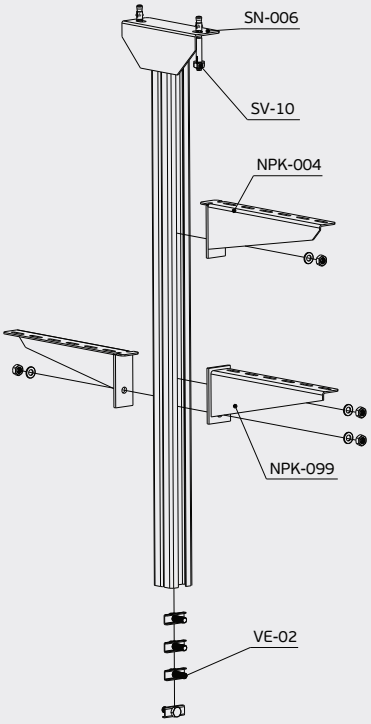




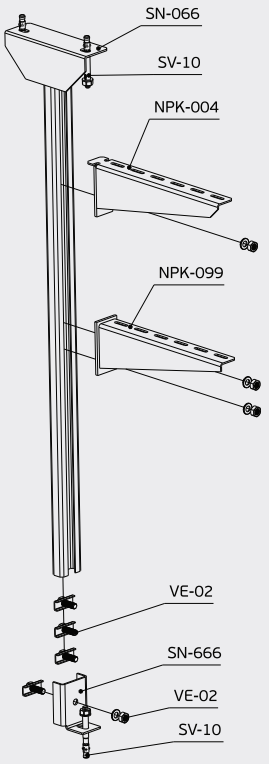

UL-111
SV-10
NPK-004
NPK-099
VE-02

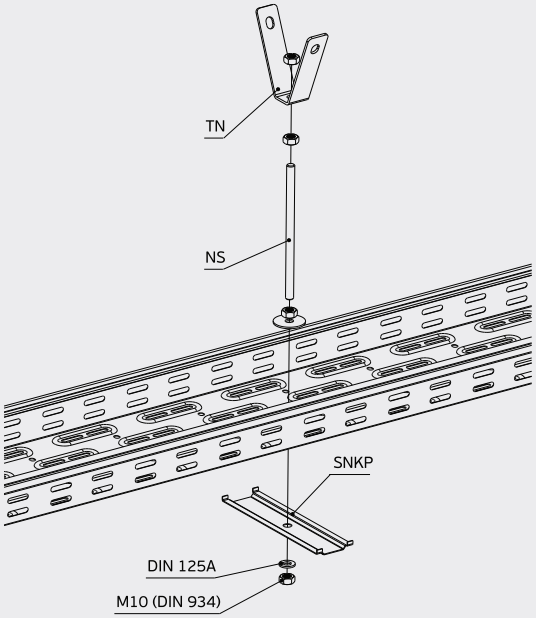

SN-066
SV-10
NPK-004
NPK-099
VE-02
KSN

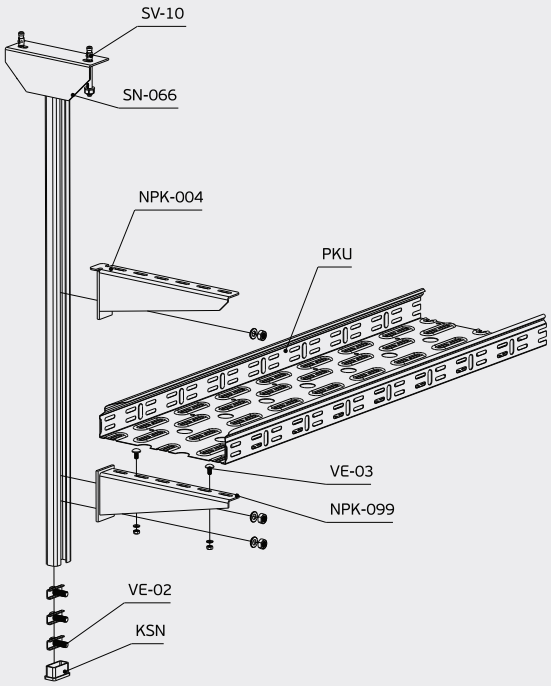

SN-066
LK
SV-10
UL-111
SE-444
VE-02
KSN

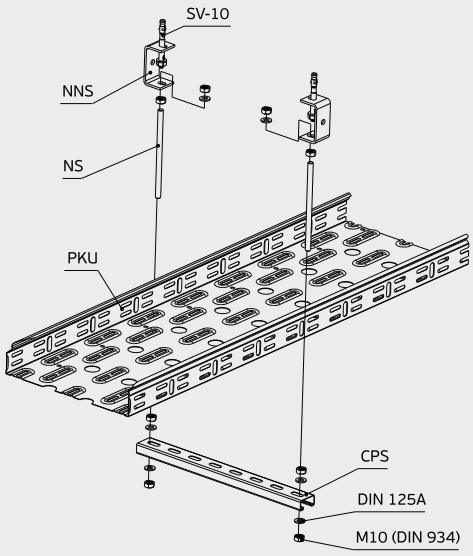

SN-006
SV-10
NPK-004
NPK-099
VE-02

INSTALLATION INSTRUCTIONS

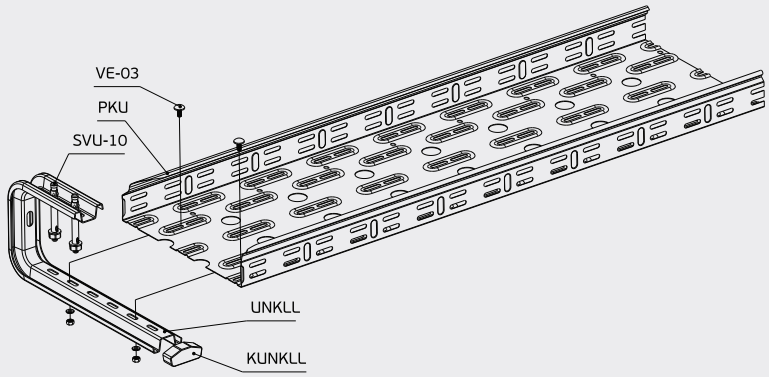




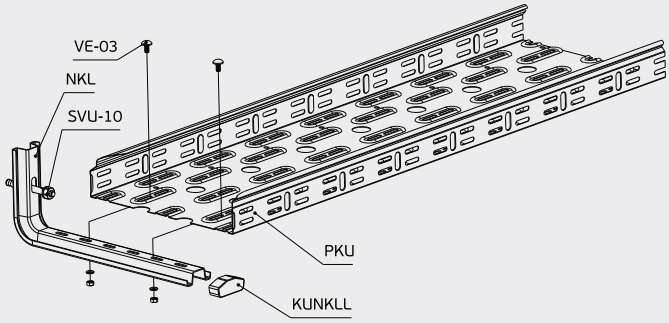




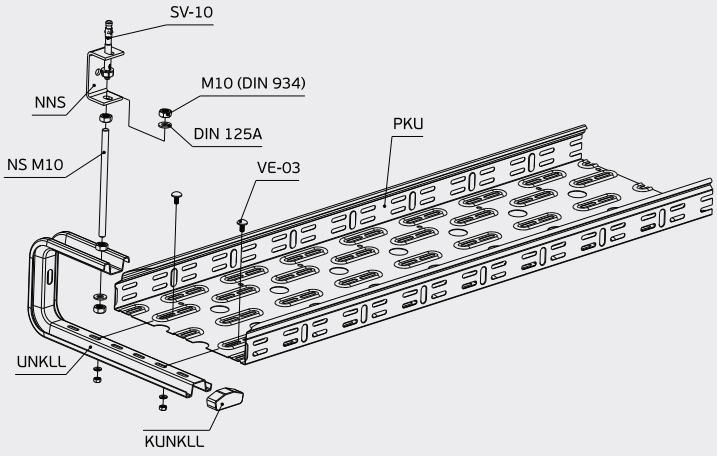
Suspension with a threaded bar
on a horizontal concrete ceiling



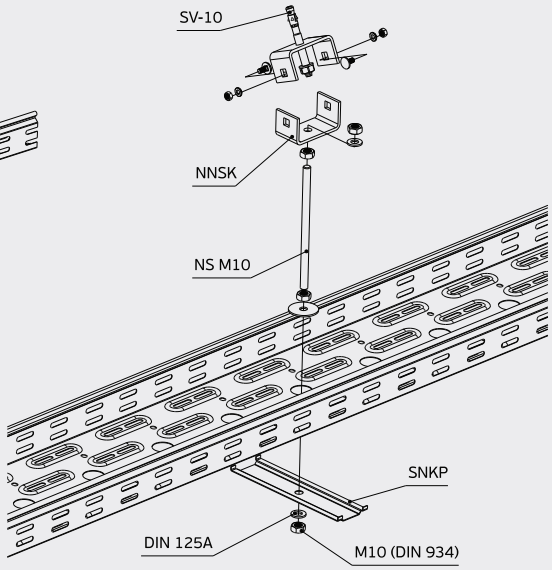
Suspension with a UNKLL support mount on a concrete ceiling



Suspension with a NKL support mount on a concrete ceiling

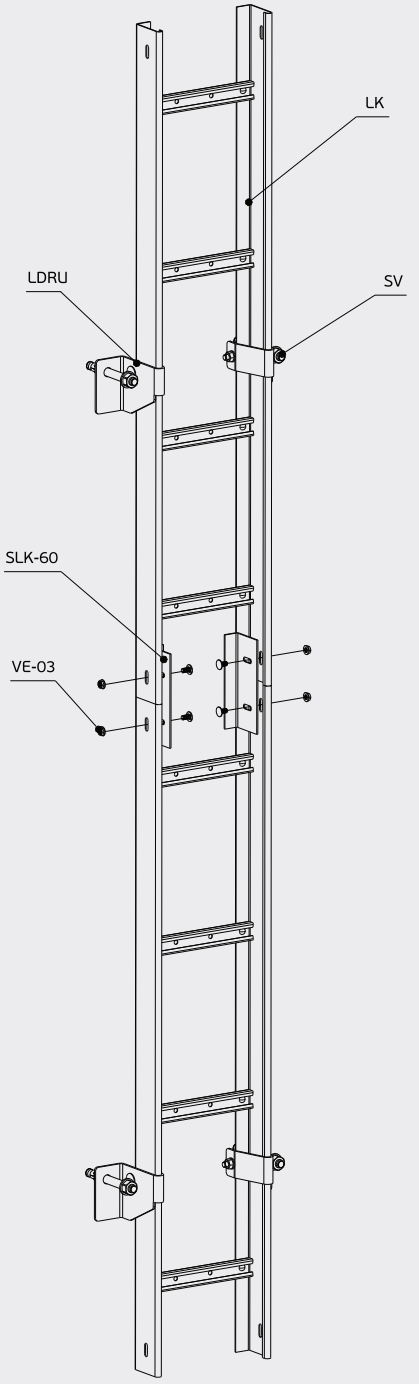


Suspension with a UNKLL support mount over a threaded bar on a concrete ceiling



Suspension for a perforated cable tray PKU-200 with a threaded bar on a slanted ceiling

5.1. INSTALLATION INSTRUCTIONS



Installation example for a vertical rising section with a cable ladders



5.2. Instructions for cable support installation and maintenance

GENERAL

WARNING! Cable supports must not be used as ladders or scaffolding and they must not be walked on, as this may cause potentially fatal injuries, as well as damage or destroy the supports or installed cables.

The installation and maintenance of cable supports should be carried out by trained and authorised persons, in accordance with all prescribed occupational health and safety requirements for such tasks.

Cable supports are to be used solely for the placement and distribution of power and signalling cables. High voltages present in electrical cables and equipment can also cause injuries or, in worst cases, fatalities. When carrying out work, the relevant prescribed safety instructions need to be followed. The maintenance of the functionality of cable supports depends on their correct installation as well as the correct laying of the cables. Careless installation and maintenance of cable supports may lead to injuries or disruptions in distribution.

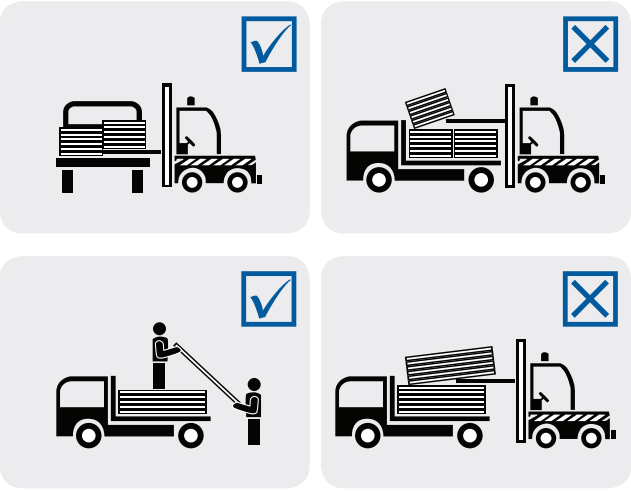
UNLOADING OF SUPPORTS AND ACCESSORIES

Cable supports are generally packaged for transport by road vehicles. The exception is transport by ship, where they are packaged in containers.

The supports are packaged onto wooden pallets and secured by strips. Such packaging is suitable for movement between means of transport using a forklift. Bolts and other small components are packaged in cardboard boxes and wrapped in film.

When unloading using a forklift, the forks should be placed below the wooden pallet in order to avoid damaging the cable supports.

Do not pull the pallets from the truck when unloading to avoid injury or damage to the supports. When unloading manually, workers must use gloves.



STORAGE

Hot-dip galvanised supports and those made from stainless or aluminium sheeting can be stored outdoors, stacked and placed above the ground surface to be protected from dirt. If the appearance of the cable supports is important, storage indoors and in a ventilated area is recommended. Cable supports made from galvanised sheeting (Sendzimir process) as well as electro-galvanised components must be stored indoors and in a ventilated area. Dyed or plastic-coated cable supports must be stored indoors. They should be protected from scratches (do not load other goods onto pallets with dyed or plastic-coated cable supports). Do not store cable supports on transport surfaces.

INSTALLATION

Installation tools

For the installation of supports and accessories, the following tools need to be available:

- 10-, 13-, 17- and 19-mm fork wrenches;
- an electric screwdriver with bits;
- a fine-toothed metal file;
- a level;
- a steel tape measure;
- a nylon thread for chalk line levelling;
- a square;
- a hammer;
- a hammer drill;
- 8-,10-, 12- and 15-mm carbide drill bits for concrete; and
- 7-, 9-, 11- and 13-mm drill bits for metal.

It is also mandatory to use appropriate occupational safety equipment (protective clothing and footwear, safety goggles, safety masks, safety gloves, etc.).

Support installation



ATTENTION! Do not cut or drill into the supports of load-bearing structural elements of buildings without the approval of the head engineer!

To secure the supports and brackets, use the fastening components (bolts) per the instructions provided with each individual support or bracket in the cable support catalogue. Depending on the surface onto which the supports are to be installed, use the appropriate bolts and anchors. Bolts with steel anchors or special tie-bolts are supplied with the supports (with UV-6 to UV-16 designations, recommended for B25–B55 concrete).

Install the bolts and anchors according to the manufacturer's instructions. In any case, it is very important that the bore be performed as accurately as possible, i.e. as close as possible to the recommended depth, and that the surface is cleaned from dust, thus ensuring the declared load capacity.

The mounting points of the mounting components should be planned well in order to avoid trays or ladders connections at these points. Plan out installation points and distances between mounting components and brackets according to the instructions in section 4.3. Before installing brackets directly onto the wall, at the required height from the floor, use a tape measure, level and nylon thread to mark a line and the installation point.

The NPK-099 and NPK-009 brackets may be mounted directly onto a concrete wall by using UV-10 or UV-12 bolts or tie-bolts.

In case a multiple-level section is being mounted onto a wall, use installation bars (UL-111), onto which you can install multiple brackets (NPK-009, NPK-099, NPK-004 or NPK-044) and secure them with VE-02 bolts. Once the brackets are precisely levelled by positioning them on the bar, secure their position by tightening the bolts.

When installing ceiling mounts (PNZ 077 or PNZ 007), use a nylon thread and pull it taut between the pre-mounted first mount and the last mount in the horizontal section. The mounts that are to be installed between the first and the last mount will then be easy to install following the line.

ATTENTION! When securing the brackets to the PNZ mounts using the VE-04 bolts, the load capacity of the PNZ mounts is reduced significantly, to only 30% of the declared load capacity. To ensure maximum load capacity according to the provided tables, use the VE-01 spaced bolts for installation!



When installing mounts onto a non-horizontal ceiling, use non-perforated ceiling mounts that allow for precise levelling of the sections (SN 006 or SN 066).

ATTENTION! Make sure that the load capacity of the mounts and cable trays/ladders is sufficient for the intended number of cables. For this purpose, use the load capacity tables provided in the catalogue.

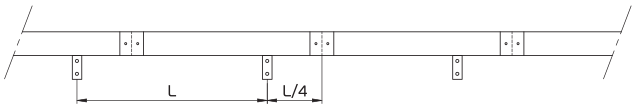


INSTALLATION INSTRUCTIONS

Installing cable trays and ladders

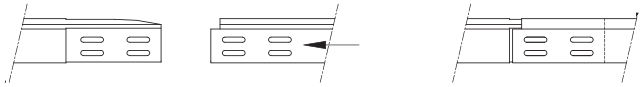
Once the installation of the mounts and brackets has been completed, the installation of the actual cable supports can start at any suitable location. It is not necessary to start the installation at the beginning or the end of the cable route. Ideally, installation should be planned in such a way that the connection points between the trays or ladders are at a quarter of the total distance between mounts (Figure 1).

FIGURE 1



The achieves the maximum strength of the section. In any case, the distance between the mounts must not be greater than that recommended distance for each type of tray or ladder (see the tables provided in the catalogue). The cable supports are designed in such a way that any part along their length can rest on a mount, you only have to ensure that there is only one tray or ladder connection point between the mounts.

FIGURE 2



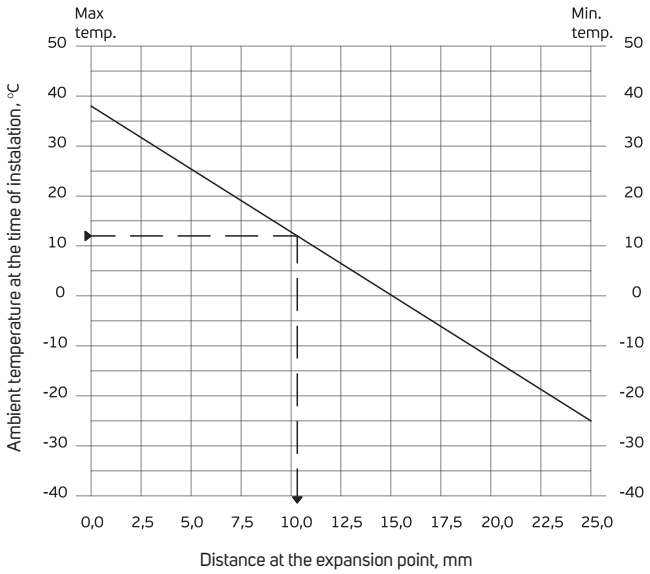
The perforated trays are connected by inserting the narrowed part of a tray into the next tray on the side of its normal width, according to the figure, and fastened onto a bracket using VE-03 bolts (Figure 2).

Cable ladders are joined together using fastening components and bolts. They are secured to brackets using the LDR bracing components. Cable ladders can be mounted in a vertical position directly onto a wall using the LDR-04 mount. They can be mounted in a vertical position using the LDR-04 mount up to a maximum length of 3.5 metres per

TABLE 1

Temperature variations in °C	Steel — at every	Aluminium — at every
14	97,5 m	49,4 m
28	48,8 m2	5,0 m
42	32,5 m	16,9 m
56	24,4 m	12,5 m
70	19,4 m	10,0 m
83	16,3 m	8,1 m

FIGURE 3



mount.

When installing trays and ladders, it is of utmost importance to take into account their thermal expansion. The temperature variations and the length of the straight portions of the cable supports determine the number of recommended expansion connection points along a straight route (Table 1).

The temperature variation is the range between the lowest and the highest daily temperature of a year.

Values for the lengths of uninterrupted sections for a temperature variation are given for a 25-mm displacement at the end of a horizontal section.

It is very important to set the right distance at the expansion point with regard to the ambient temperature at the time of cable support installation.

To determine the required distance at the expansion points at the time of installation, use the table below according to the following procedure:

- mark the highest expected temperature on the left-hand side of the table (example: 38°C);
- mark the lowest expected temperature on the right-hand side of the table (example: –25°C); and
- draw a line between these two points.

Mark the current temperature on the left-hand side (example: 15°C), draw a horizontal line to the previously drawn line then, from their intersection point, draw a vertical line to the bottom scale of the diagram and thus determine the recommended distance value at the expansion point (Figure 3).

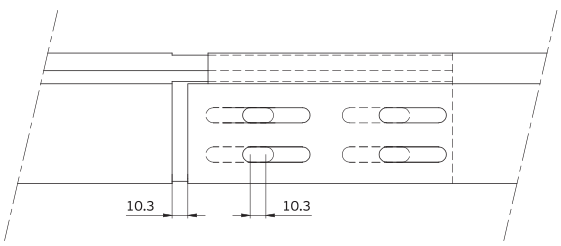


FIGURE 6

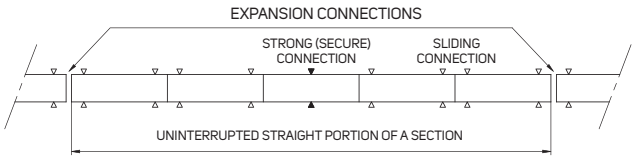
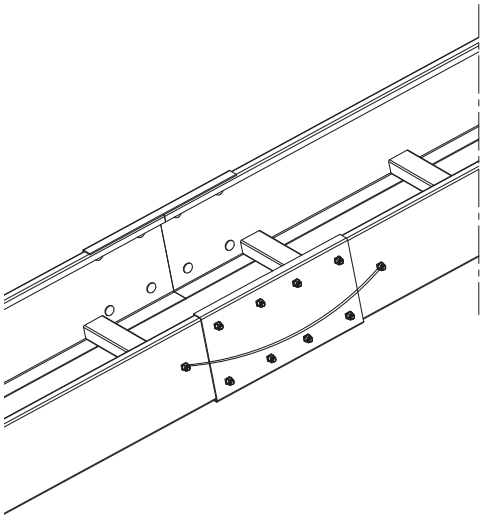


Figure 4 shows the expansion connection of two perforated cable trays.

The trays need to be secured (strong, fixed connection) to the mount as close as possible to the middle of the distance between two expansion points (see the figure below). Cable trays need to be able to elongate to the left and right of the fastening point. Therefore, to the left and right of the secure connection, sliding connections are installed in such a way that the bolt connecting the tray to the bracket is tightened, and then the nut is loosened by one half of a full rotation (Figure 5). Metal cable supports must have electrical continuity at the connection points, so a joint using a bolt (with the head of the bolt inside the tray), an elastic washer and a nut needs to be made at these points. At an expansion point, the displacements of the connected trays due to thermal expansion need to be made possible. For this purpose, tighten the nut fully and then loosen it by one half of a full rotation. Ensure electrical continuity using braided wire (Figure 6).

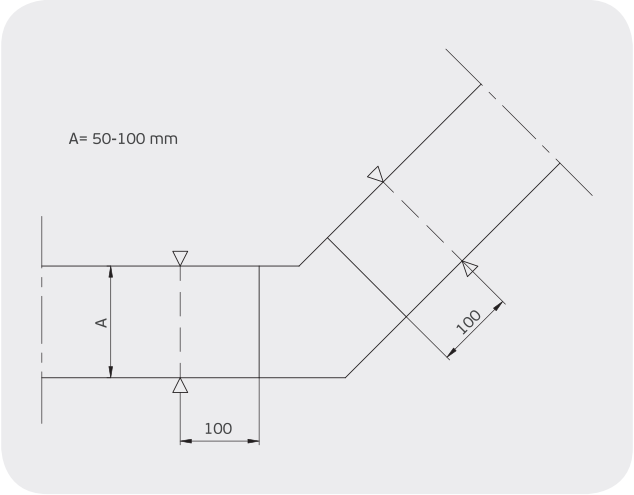


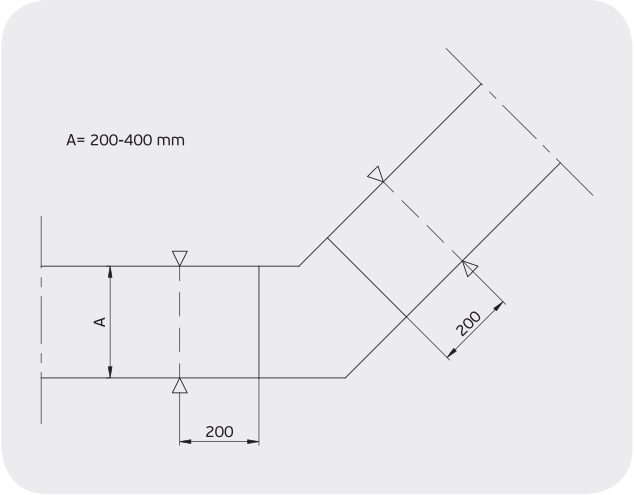
INSTALLATION INSTRUCTIONS

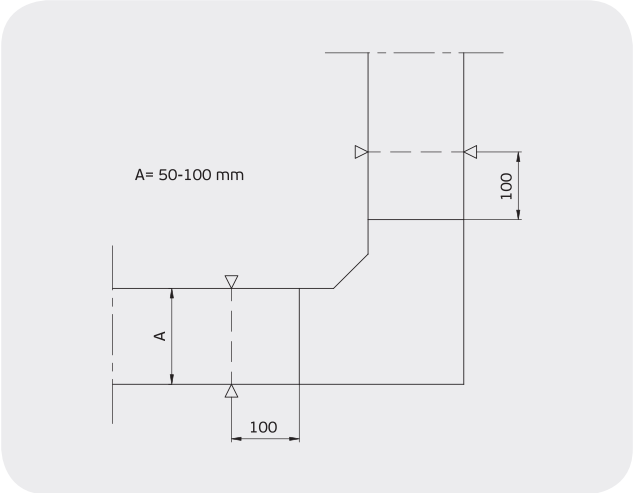
Connector installation

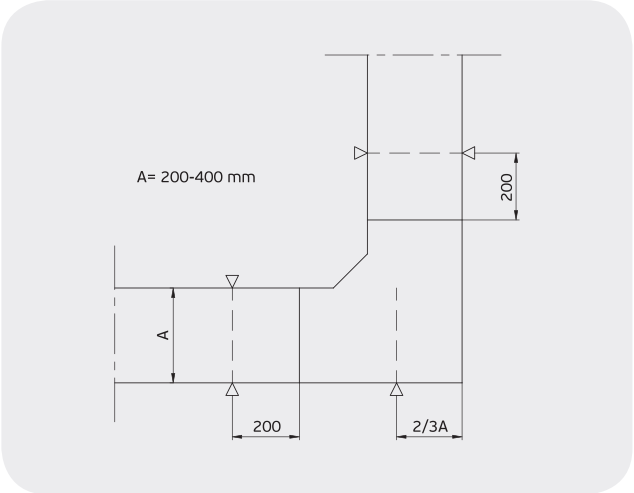
The connectors are used to connect trays or ladders, change route direction, change tray or ladder dimensions or when shortening them. They are mounted onto the trays or ladders using appropriate fastening components and bolts. When fitting connectors to the ends of the trays or ladders, the installation instructions for the brackets need to be followed depending on the position of the connectors, as shown in the following figures:

ANGLE CONNECTORS

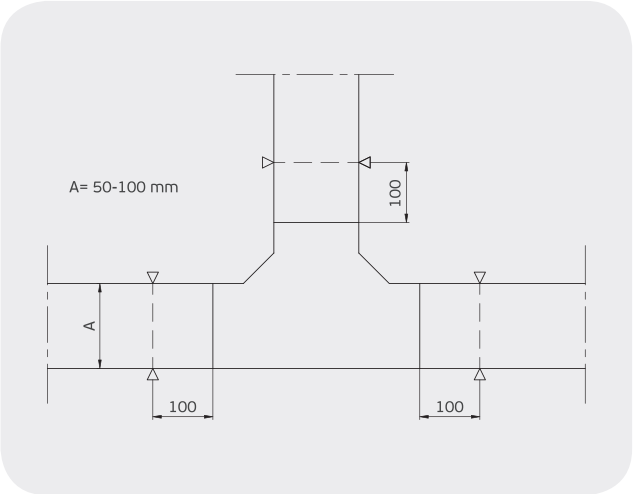


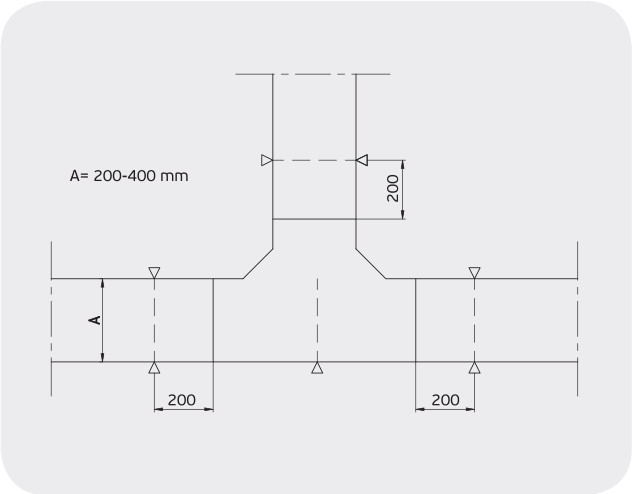




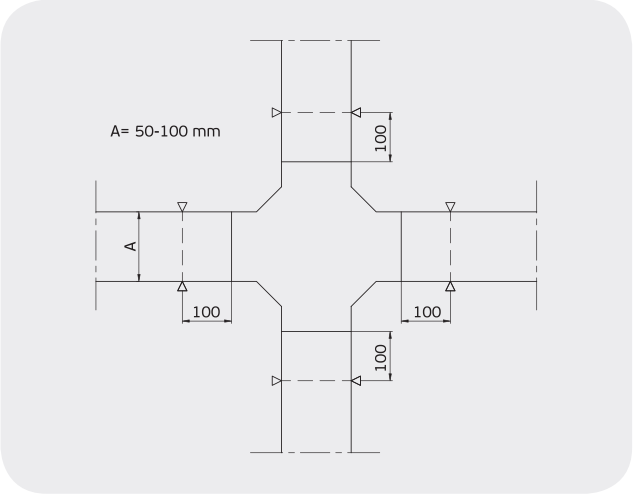


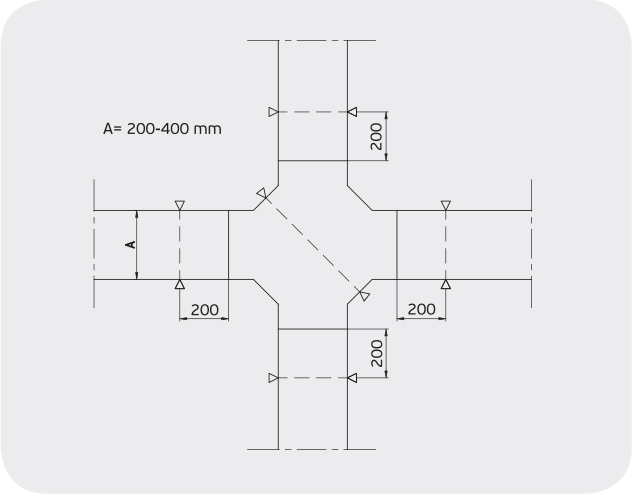
T CONNECTORS





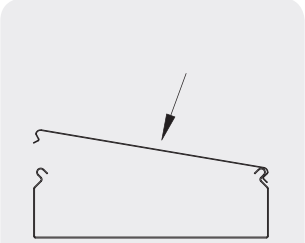
CROSS CONNECTORS

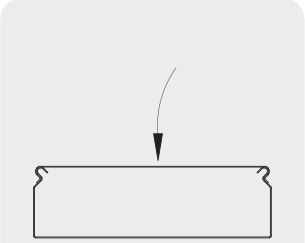




Cover installation

The connection between the covers and the perforated trays is achieved using their shape, without any additional fastening components. The cover needs to be inserted, along its entire length, into the groove on one outer side of the tray and then gently pressed on the other side until its entire length slips into place in the groove on the other side of the tray:





INSTALLATION INSTRUCTIONS

Adjustments to standard components

Occasionally, it will be necessary to shorten a cable support as the length required is smaller than the standard support length. The cut-off portion can also be used in a suitable location.

The cut point needs to be marked before cutting. Use a square and a needle or a marker pen for this purpose. Mark the cut line across the width as well as on the vertical side of the support.

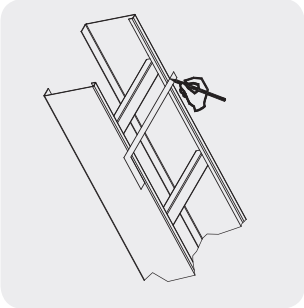
It is very important that the support be cut perpendicularly to the longitudinal axis, as this is the only way to ensure proper connection between supports. Use a hand saw for metal or a small angle grinder with a suitable cutting disk to make the cut. You must use prescribed safety measures when making the cut!

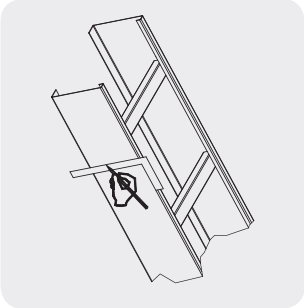
After cutting, remove the remaining swarf at the edges using a metal file.

It is often necessary to make a bore at cut points to connect the support to the connector or bracket. The easiest way to do this is by placing the connector against the support, marking the required bore position with a needle, using a tracing tool and drilling using an appropriate drill bit. Remove the swarf remaining after drilling from the bore.

On galvanised supports, the zinc layer is damaged during cutting and drilling. Corrosion immediately occurs in such locations, so appropriate zinc coatings need to be used to protect them immediately.

Supports made of galvanised sheeting as well as aluminium and stainless sheeting do not require protection after cutting and drilling. Dyed or plastic-coated supports need to be protected in such locations using appropriate coatings.





Component fastening and grounding

Supports are connected at connection points using bolts to ensure potential equalisation.

Always place the bolt head on the inside of the support and the elastic washer and nut on the outside of it, then tighten securely. At the expansion points, the displacement of the connected components needs to be made possible. At such locations, tighten the bolt and then loosen by one half of a full rotation. Ensure electrical continuity using braided wire.

For specific components, use the bolts recommended for use with individual items in the product catalogue.

Carry out grounding in accordance with the regulations relating to this type of product. The element connection procedure is described in section 5.2.4.3.

Cable support maintenance

Although no particular maintenance of cable routes is required under normal conditions, it is recommended to carry out visual inspections from time to time.

A visual inspection is carried out to determine if there is potential loosening of bolt connections at the connection points. Tighten any loosened bolt joints.

Visual inspections also check for excessive dust, the presence of foreign objects and parts and plastic deformations of suspension components caused by external influences. The mentioned needs to be removed and prevented to prevent damage to the cables in the trays, allow ventilation and reduce the risk of fire.

Check the condition of cable supports after significant weather occurrences such as strong winds, earthquakes, etc.



6. QUALITY SYSTEM

6. QUALITY SYSTEM

Quality system

The management of our company has incorporated our focus on the customer, by meeting their needs and wishes, into a quality policy.

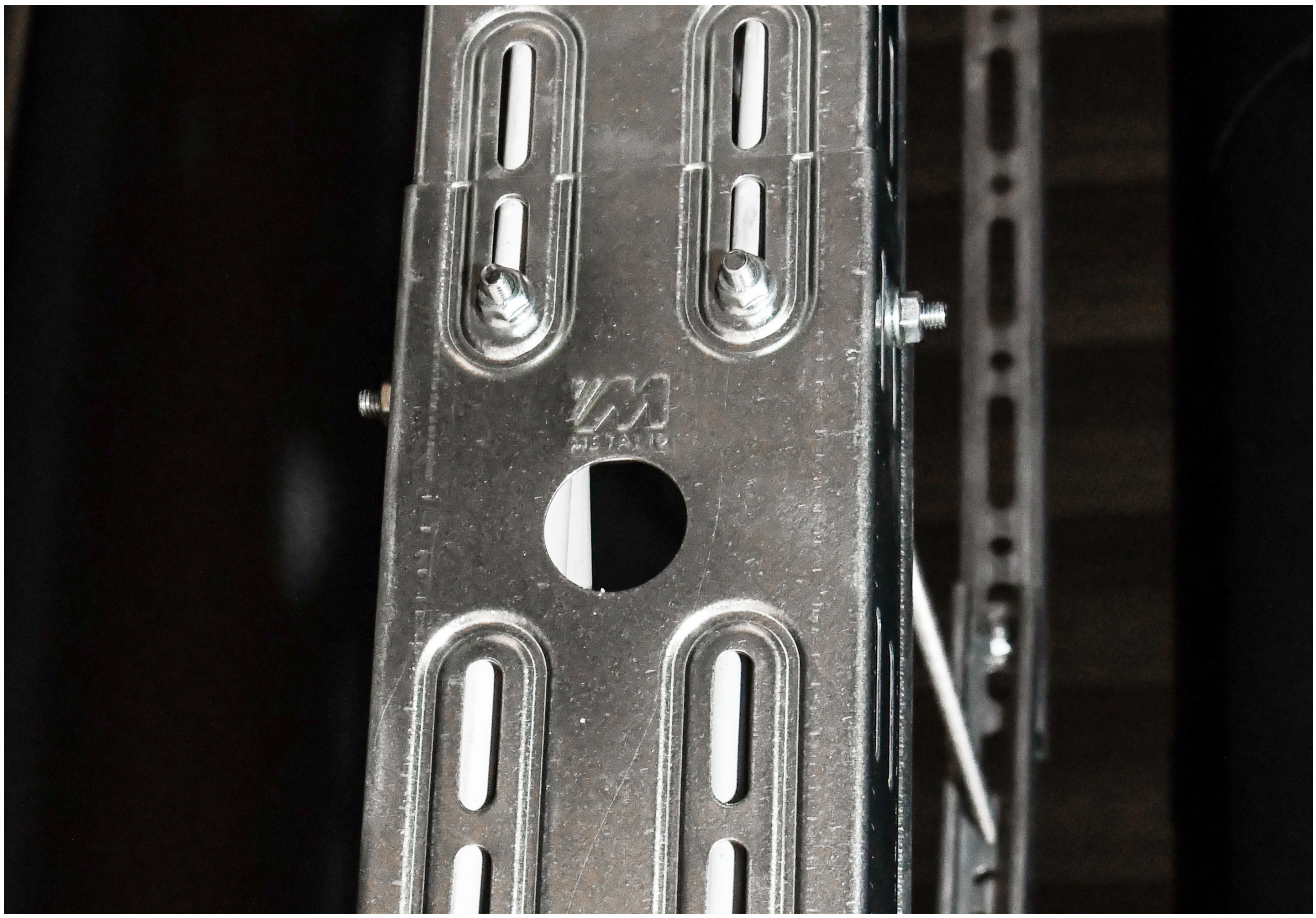
Our quality management system, which is in compliance with the requirements of ISO9001:2015, is continuously maintained, improved and verified.

This approach makes it possible to achieve our quality objectives, which are regularly updated:
- depending on market requirements;
- through manufacturing technology innovation; and
- through staff training and motivation.

We certify the successful implementation of a quality system in accordance with the requirements of ISO9001:2015 with the corresponding certificate.

Metalis reaffirms its focus on the customer especially by tending to its products through additional tests of their functionality, operational safety and their impact on the environment and human health. The tests are according to protocol and are performed by certified laboratories.

This is certified by the issued certificates of conformity of our products with the relevant regulations for different areas of use.



DNV

CERTIFIKAT SUSTAVA UPRAVLJANJA

Certifikat broj: C718430

Datum početne certifikacije: 31. listopada 2006 (od strane različitih certifikacijskih tijela)

Valjanost certifikata: 26. kolovoza 2024 – 30. listopada 2024

Ovaj certifikat potvrđuje da je sustav upravljanja

METALIS d.o.o.
Toplička cesta 54, 49240 Donja Stubica, Hrvatska

u skladu s normom sustava upravljanja kvalitetom:
ISO 9001:2015

Ovaj certifikat vrijedi za sljedeće područje:
Proizvodnja sustava kabelskih kanala sa spojnim elementima i priborom, opreme i dijelova za alatne strojeve i zavarenih konstrukcija.

Mjesto i datum:
Zagreb, 26. kolovoza 2024

17021 · HAA
4075
QMS

Za ured izdavanja:
DNV - Business Assurance
Radnička cesta 177, 10000 Zagreb, Croatia

Franjo Potak
Predstavnik uprave

Neispunjenje uvjeta navedenih u Ugovoru o certifikaciji može prouzročiti prestanak valjanosti certifikata.
AKREDITIRANI URED: DNV Adriatica d.o.o., Radnička cesta 177, 10000 Zagreb, Croatia - TEL: +385 1 2495 850. www.dnv.hr/assurance

SIQ

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17065
CP-001

Certificate of Conformity

Number: **C211-0025/23** Project file: C20230793

Product: **Cable tray system and cable ladder system**

Type reference: **LK, PK, PKU, PKUL and PKU-60 Inox family (with accessories)**

Trademark: METALIS

Applicant: **Metalis d.o.o.**
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Manufacturer: Metalis d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Place of manufacture: Metalis d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

This certificate is granted subject to the SIQ's rules on product certification. SIQ certifies the conformity of the products with the requirements of the listed standards.

Ratings: Metallic, -15° to +60°C, 10 J, with electric continuity

Standard: EN 61537:2007

Test report: T211-0398/23 (2023-06-02)

Remarks: This certificate shall apply to the products identical to the tested sample and shall remain valid for the period of 3 years until 2026-06-02 or until the validity date of the listed standards, whichever occurs earlier.
This product also complies with IEC 61537:2006.

Date: 2023-06-02

Authorized signature: Gregor Schoss

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T +386 1 4778 100, F +386 1 4778 444, info@siq.si, www.siq.si

CN500E-02

SIQ

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17065
CP-001

Certificate of Conformity

Number: **C211-0020/24** Project file: C20241059

Product: **Cable tray system**

Type reference: **PKU-85**

Trademark: METALIS

Applicant: **METALIS d.o.o.**
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Manufacturer: METALIS d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Place of manufacture: METALIS d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

This certificate is granted subject to the SIQ's rules on product certification. SIQ certifies the conformity of the products with the requirements of the listed standards.

Ratings: Metallic, -20°C to +60°C, 10 J, with electric continuity

Standard: EN 61537:2007

Test report: T211-0060/21 (2021-02-12)

Remarks: This certificate shall apply to the products identical to the tested sample and shall remain valid for the period of 3 years until 2027-05-14 or until the validity date of the listed standards, whichever occurs earlier.

Date: 2024-05-14

Authorized signature: Bojan Pečavar

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CN500E-02

SIQ

SLOVENSKA AKREDITACIJA
SIST EN ISO/IEC 17065
CP-001

Certificate of Conformity

Number: **C211-0036/24** Project file: C20241327

Product: **Cable tray system**

Type reference: **PKU-110 (with accessories) –** see page 2 for details

Trademark: METALIS

Applicant: **METALIS d.o.o.**
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Manufacturer: METALIS d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

Place of manufacture: METALIS d.o.o.
Toplička cesta 54, HR-49240 Donja Stubica, Croatia

This certificate is granted subject to the SIQ's rules on product certification. SIQ certifies the conformity of the products with the requirements of the listed standards.

Ratings: Metallic, -20°C to +60°C, 10 J, with electric continuity

Standard: EN 61537:2007

Test report: T211-0789/24 (2024-08-20)

Remarks: This certificate shall apply to the products identical to the tested sample and shall remain valid for the period of 3 years until 2027-08-20 or until the validity date of the listed standards, whichever occurs earlier.

Date: 2024-08-20

Authorized signature: Matej Žontar

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CN500E-02

6. QUALITY SYSTEM

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Laboratorij
Stubička Slatina 26, 49243 Oroslavje, Hrvatska
Tel. ++385-(0)49-27-40-21; Fax. ++385-(0)49-27-40-04;
e-mail: ltm@ltm.hr; web: www.ltm.hr

Stubička Slatina, 25.11.2022.g.

STRUČNO MIŠLJENJE S RAZREDBOM
O ODRŽAVANJU INTEGRITETA U POŽARU
GRAĐEVNIH ELEMENATA PREMA
HRN DIN 4102-12:2000

Br. SM-4206/17-1 Rev. 1*

Vrsta proizvoda:	KABELSKE TRASE S OČUVANJEM FUNKCIJE U POŽARU
Naziv proizvoda:	KABELSKE TRASE S KANALIMA PKU-50 DO PKU-500
Proizvođač:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA
Naručitelj:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA

* Ovo stručno mišljenje s razredbom zamjenjuje stručno mišljenje br. SM-4206/17-1 od 11.12.2017.

Laboratorij je odobren od: MINISTARSTVO GRADITELJSTVA I PROSTORNOG UREĐENJA HRVATSKI REGISTAR BRODOVA

Rezultati ispitivanja odnose se samo na ispitne uzorke. Izvještaj o ispitivanju smije se umnožavati samo kao cjelina.

Broj stranica: 6

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Stubička Slatina, 23.04.2020.g.

STRUČNO MIŠLJENJE S RAZREDBOM
O ODRŽAVANJU FUNKCIONALNOSTI U POŽARU
GRAĐEVNIH ELEMENATA PREMA
HRN DIN 4102-12:2000

Br. SM-4434/20-1

Vrsta proizvoda:	PROTUPOŽARNI KABELSKI KANALI S PRIBOROM
Naziv proizvoda:	STROPNE, ZIDNE I STROPNO-ZIDNE NORMIRANE KABELSKE TRASE S PERFORIRANIM (VO PK) I LJESTVIČASTIM (VO LK) KANALIMA
Proizvođač:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA
Naručitelj:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA

Laboratorij je odobren od: MINISTARSTVO GRADITELJSTVA I PROSTORNOG UREĐENJA HRVATSKI REGISTAR BRODOVA

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Stubička Slatina, 29.10.2021.g.

STRUČNO MIŠLJENJE S RAZREDBOM
O OČUVANJU FUNKCIONALNOSTI U POŽARU
GRAĐEVNIH ELEMENATA PREMA
HRN DIN 4102-12:2000

Br. SM-4606/21-1

Vrsta proizvoda:	PROTUPOŽARNI KABELSKI KANALI I PRIBOR
Naziv proizvoda:	KABELSKE TRASE S PUNIM KANALIMA PKU 100-400/60 SC KABELSKE TRASE S PERFORIRANIM KANALIMA PKU 100-200/60 INOX
Proizvođač:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA
Naručitelj:	METALIS d.o.o., Toplička 54, 49240 Donja Stubica, HRVATSKA

Laboratorij je odobren od: MINISTARSTVO PROSTORNOG UREĐENJA, GRADITELJSTVA I DRŽAVNE IMOVINE HRVATSKI REGISTAR BRODOVA

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Broj stranica: 7

VDE Prüf- und Zertifizierungsinstitut

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49240 Donja Stubica
Croatia

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Cable carrier systems for electrical installation

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PRODUCTION RANGE AND REFERENCES

7. Production range and references

- Cable supports with accessories
- Steel roadside guard rails
- Accessories and components for machine tools
- Swarf removal systems
- Telescopic steel guide protection
- Workspace safety systems and other sheet and welded machine tools components
- Welded structures
- Distribution cabinets and counters
- Miscellaneous metalworking services

Export to countries:



PRODUCTION RANGE AND REFERENCES

References

CROATIA

SHOPPING CENTRES

Lidl
Kaufland Split, Ivanec
Spar
Eurospin Zaprešić, Slavonski Brod
Bauhaus
Mömax
City Center One, Zagreb
Avenue Mall, Zagreb
Avenue Mall, Osijek
Arena Centar, Zagreb
Max City Stoja, Pula
Srdoči, Rijeka
Z Centar, Zagreb
SuperNova, Požega
Portanova, Osijek
Eurodom, Osijek
Cvjetni Prolaz building, Zagreb
Interspar department store, Zagreb
Velpro Jankomir
Lesnina XXXL, Zagreb

HALLS

Arena Zagreb
Arena Split
Osijek Hall
Poreč Hall

HOTELS AND RESORTS

Hilton Hotel, Zagreb
Panorama Hotel, Zagreb
Brioni Hotel, Pula
View Hotel, Brač Island
Petram Resort, Savudrija, Istria
Istria Camping Resort
Funtana, Poreč
Hilton Rijeka Costabella
Beach Resort & Spa
Hyatt Hotel Maraska, Zadar
Pical Hotel, Poreč
Astarea Hotel, Dubrovnik
Alba Hotel, Sv. Filip i Jakov

LOGISTICS CENTRES

Gebrüder Weiss logistics centre, Sveta Nedelja
Kaufland logistics centre, Jastrebarsko
Lidl logistics centre, Križ
Spar logistics centre, Donja Zdenčina

HOSPITALS

Osijek Hospital
Bjelovar Hospital
Sisak Hospital
Split University Hospital
Zagreb University Hospital
Jordanovac Clinical Hospital
Merkur Clinical Hospital, Zagreb
Varaždin General Hospital
UPMC Hospital Bračak

OTHER STRUCTURES

Jabil Centre of Excellence, Osijek
Austrotherm Zabok
DPD Bistra
Hidromont, Slavonski Brod
ROR, Rijeka
Matrix Office Park
Podravka, Koprivnica
City Island Buzin, Zagreb
Atlantic Trade warehouse
District Court, Split
VMD building, Zagreb
University of Zagreb School of Medicine
Varaždin Medical School
Split School of Tourism and Hospitality
Zabok Secondary School
Student Dormitory, Osijek
Student Dormitory, Dubrovnik
Palacin Student Dormitory, Šibenik
Centre for Veterinary Medicine, Daruvar
CALT, Centre for Advanced Laser Techniques, Zagreb
Croatian Postal Service – Sorting Centre, Velika Gorica
Auto Benussi, Zagreb
Sky Office Tower, Zagreb
Matrix, Zagreb

INDUSTRY, ENERGY AND INFRASTRUCTURE

Pelješac Bridge
Omiš Bridge – Brzet – Komorjak
Komarna – Pelješac Bridge
Split – Čiovo Bridge
Franjo Tuđman Bridge – Dubrovnik
Sljeme Cable Car
Šum Viaduct, AZM
Drežnik Viaduct, HAC
Brijesta Viaduct, Pelješac
Vidovci Tunnel, Sveta Tri Kralja Tunnel and Brezovica Tunnel – AZM
Vršek, Sopač and Sljeme tunnels
Sveti Ilija Tunnel, Pelješac
Podmurvice Tunnel, Rijeka
Pelješac Bridge access roads
State Road DC 403 Škurinje – Rijeka Port access roads
Adriatic Tank Terminal, Ploče
Ploče Port
LNG terminal, Krk Island
Compressor station, Velika Ludina
Zadar substation
Osijek substation
Sućidar substation
Mraclin substation
Stenjevec substation
Čakovec substation
Dračevac substation
Đakovo substation
Poreč wastewater treatment system
Vukovar wastewater treatment system
Sisak wastewater treatment system
Mursko Središće wastewater treatment system
Nova Gradiška wastewater treatment system
Rovinj wastewater treatment system
Jelsa wastewater treatment system, Hvar
Donja Dubrava wastewater treatment system
Pitomača wastewater treatment system
Slatina wastewater treatment system
Metković wastewater treatment system
Plodine SE
Belupo SE

ABROAD

Krško Nuclear Power Plant, Slovenia
Brestanica Thermal Power Plant, Slovenia
Vipavski Križ
Podčetrtek waste water purification system
Volkswagen Emden, Germany
Volkswagen Hanover, Germany
Mercedes Bremen, Germany
Bayer, Grenzach
GLS Hamburg, Germany
Volkswagen Bratislava, Slovakia
Mercedes-Benz, Russia
Sarajevo International Airport, Bosnia and Herzegovina
Sarajevo City Center, Bosnia and Herzegovina
Sarajevo Tower, Bosnia and Herzegovina
Avaz Twist Tower, Sarajevo, Bosnia and Herzegovina
Sisecam Soda Lukavac, Bosnia and Herzegovina
Delta Planet, Banja Luka, Bosnia and Herzegovina
Swisslion Takovo, Trebinje, Bosnia and Herzegovina
Bingo centres, Bosnia and Herzegovina
Elko Marić Tunnel, Bosnia and Herzegovina
Eding Telecom, Bosnia and Herzegovina
Bingo Centre Sarajevo, Bosnia and Herzegovina
Lidl Sarajevo, Bosnia and Herzegovina
Počitelj Bypass, Bosnia and Herzegovina
Crni Vrh residential complex, Sarajevo, Bosnia and Herzegovina



Franjo Tuđman Bridge, Dubrovnik



Omiš Bridge

7 PRODUCTION RANGE AND REFERENCES



Hilton Rijeka Costabella



Arena Zagreb



Pelješac Bridge

7 PRODUCTION RANGE AND REFERENCES



Pelješac Bridge, interior



City Island Buzin



Mercedes-Benz Bremen, Germany



Sljeme Cable Car

NOTES

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