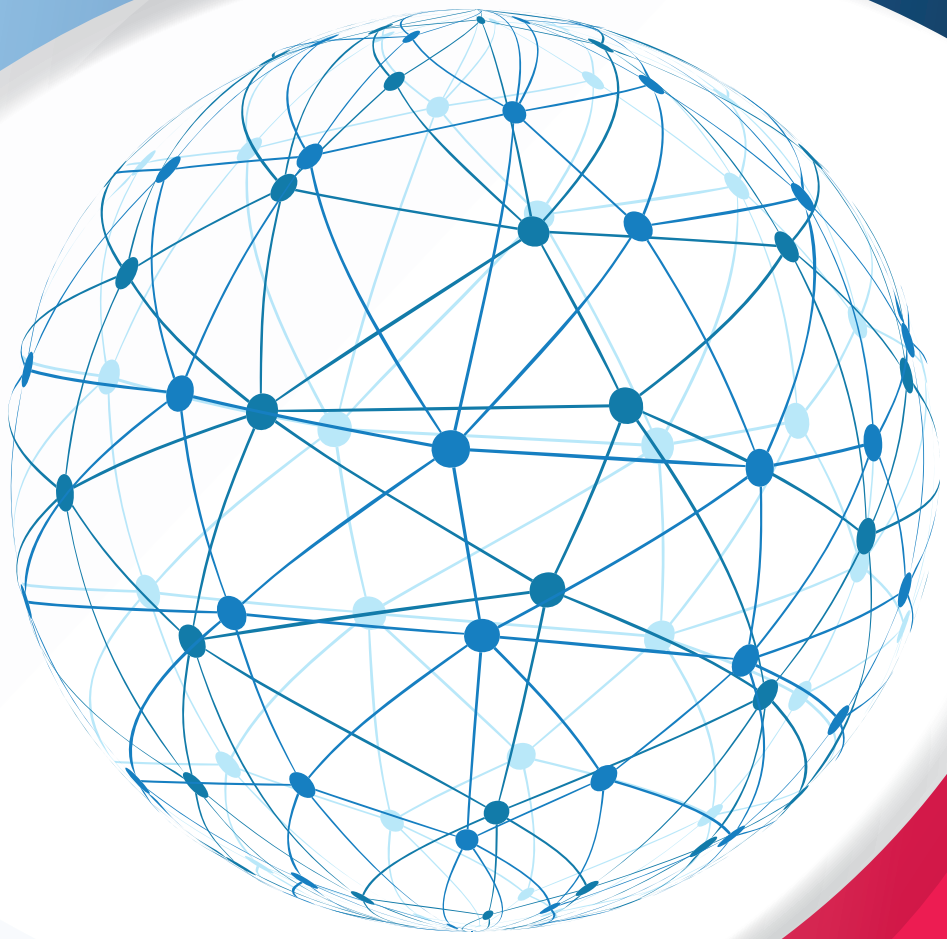
POLYTRADE
SOLUTION

Company Overview



Our presence is focused nowadays on telecom and energy market sectors. We emphasize long-term commitment and combine international reach and local intimacy to provide premier professional services from consulting, supplying and commissioning of our products.

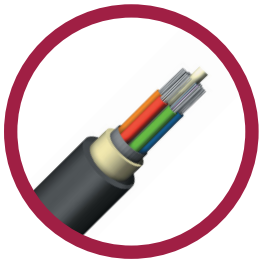
In business, confidence is everything. Regardless the business size, you need the right partner. We help you reinvent the way you work. Our team of young and dedicated people brings together information, quality, competitiveness into a rhythm that will amaze you.

At POLYTRADE SOLUTION, we deliver solutions you can count on, tailor made for your needs & requirements, so you can spend more time on what matters most – growing your business.

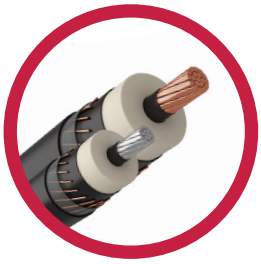
We dare you to try us!

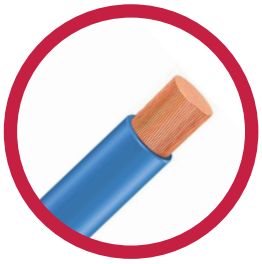
Fiber Optic Cables



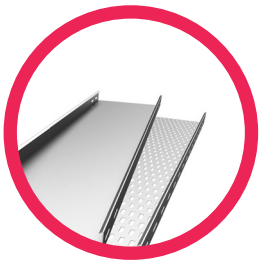
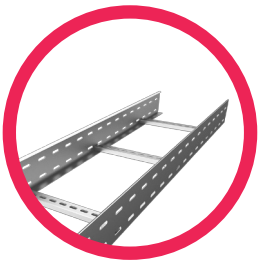


Power Cables

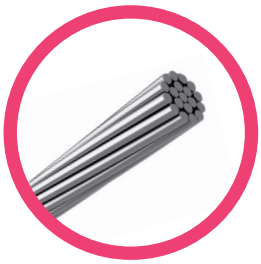




Cable Management System


Conductors & Ropes



Accesories



Fiber Optic Cables

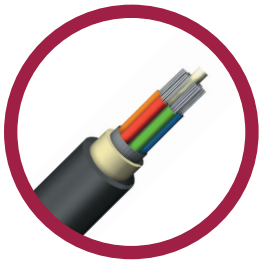
ADSS – when looking for an aerial fiber optic cable, whether your application needs a long or short span, requires increased carrying capacity, harsh environments or custom-made solutions that shall fulfil your expectations, you're looking for OPTIVINE. Our typical ADSS construction consist in a FRP central member, gel filled loose tubes containing 4 to 24 optical fibers/tube, water blocking yarn and tape, HDPE outer sheath. The construction can be fully customized according to your needs.

OPUG - underground fiber optic cables that are designed for duct or direct burial installation, fully dielectric cable or with metallic elements for increased mechanical parameters. Due to our new technology, the cables show good flexibility and endurance to repeated bending, excellent mechanical properties and great water blocking function. Available on customized constructive solutions up to 864 fibers, OPTIVINE is the right choice.

Micro-module Multi-Purpose – OPTIVINE's MMMP cable family was designed for FTTH and long-haul networks, for aerial or duct installations, being ultra-compact, lightweight and easy to handle. Compared with conventional cables it shows several features that brings benefits inducing significant time- and cost-savings during engineering, civil works, laying or jointing process. This special indoor/outdoor cable contains bend-insensitive fibers, protected by easy strippable micro-tubes. Two constructive solutions are common, MOD6 and MOD12, representing 6 or 12 fibers per tube. Other requirements/solutions may be offered upon request.

Parameter	G652D	G655D	G657A2
Main fiber types used			
Attenuation Coefficient at 1310 nm Max at 1550 nm Max at 1625 nm Max	 ≤ 0.35 dB/km ≤ 0.22 dB/km	 ≤ 0.22 dB/km ≤ 0.24 dB/km	 ≤ 0.34 dB/km ≤ 0.20 dB/km
Chromatic Dispersion between 1285 - 1330 nm at 1550 nm at 1625 nm	 ≤ 3.5 ps/nm·km ≤ 18 ps/nm·km	 2.0 - 6.0 ps/nm·km 4.5 - 11.2 ps/nm·km	 ≤ 3.5 ps/nm·km ≤ 18 ps/nm·km
Point Discontinuity at 1310&1550 nm	≤ 0.1 dB	≤ 0.1 dB	≤ 0.02 dB
Polarization Mode Dispersion PMD Q value	≤ 0.2 ps/√km	≤ 0.2 ps/√km	≤ 0.1 ps/√km
Cable Cut off Wavelength (λcc)	≤ 1260 nm	≤ 1260 nm	≤ 1260 nm
Mode Field Diameter at 1310 nm at 1550 nm	 9.2 ± 0.4 µm 10.4 ± 0.5 µm	 9.2 ± 0.4 µm 9.6 ± 0.5 µm	 8.8 ± 0.4 µm 9.8 ± 0.5 µm
Cladding Diameter	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 0.7 µm
Mode field (Core/clad) concentricity error	≤ 0.6 µm	≤ 0.6 µm	≤ 0.5 µm
Cladding Non-Circularity	≤ 1.0%	≤ 1.0%	≤ 0.8%
Coating Diameter	245 ± 7 µm	245 ± 7µm	245 ± 7 µm
Core / Cladding Concentricity error	≤ 0.6 µm	≤ 0.6 µm	≤ 10 µm
Coating-Cladding Concentricity error	≤ 12.0 µm	≤ 12.0 µm	≤ 8.0 µm





Cable Structure Fibers	Available			Overall Diameter (mm)*			Cable Weight (Kg/km)*			RTS (kN)
	M6	M12	M24	M6	M12	M24	M6	M12	M24	
ADSS										
6	✓	-	-	10.0	-	-	76.0	-	-	6.0
12	✓	✓	-	10.0	10.0	-	76.0	76.0	-	6.0
24	✓	✓	-	10.0	10.0	-	76.0	76.0	-	6.0
36	✓	✓	-	10.0	10.0	-	76.0	76.0	-	6.0
48	✓	✓	-	10.6	10.6	-	82.0	76.0	-	6.0
72	✓	✓	-	10.6	10.6	-	96.0	86.0	-	6.0
96	-	✓	-	-	13.2	-	-	145	-	7.5
144	-	✓	-	-	15.3	-	-	167	-	7.5
288	-	✓	-	-	17.5	-	-	219	-	8.7
OPUG										
6	✓	-	-	8.9	-	-	60.5	-	-	1.5
12	✓	✓	-	8.9	8.9	-	60.5	60.5	-	1.5
24	✓	✓	-	8.9	8.9	-	60.5	60.5	-	1.5
36	✓	✓	-	8.9	8.9	-	62	62	-	1.5
48	✓	✓	-	11	8.9	-	70	62.0	-	1.5
72	✓	✓	-	12	8.9	-	72	63.0	-	1.5
96	-	✓	-	-	11.0	-	-	94.5	-	1.5
144	-	✓	-	-	12.5	-	-	124.0	-	1.5
288	-	✓	-	-	15.8	-	-	190.0	-	1.5
432	-	✓	-	-	17.7	-	-	240.0	-	1.5
576	-	-	✓	-	-	19.3	-	-	285.5	1.5
720	-	-	✓	-	-	19.8	-	-	312.0	1.5
864	-	-	✓	-	-	19.8	-	-	316.0	1.5
Micro-Module										
6	✓	-	-	6.5	-	-	35.0	-	-	1.3
12	✓	✓	-	7.0	6.5	-	40.0	35.0	-	1.3
24	✓	✓	-	7.0	7.0	-	50.0	40.0	-	1.3
36	✓	✓	-	8.0	7.0	-	56.0	52.0	-	1.8
48	✓	✓	-	8.0	8.0	-	62.0	56.0	-	1.8
72	✓	✓	-	11.5	10.0	-	74.0	67.0	-	2.0
96	✓	✓	-	11.5	11.5	-	89.0	81.0	-	2.0
144	✓	✓	-	13.0	11.5	-	105.0	96.0	-	2.2
288	-	✓	-	-	16.0	-	-	129.0	-	2.7

*Dimensions are subject to ± 5% tollerance.

Power Cables

Power cables – regardless of whether you are looking for low voltage or medium voltage cables, POWERVINE offers you the complete range of products. Starting from different conductor materials, filler, insulation, outer sheath materials, flexibility classes, screen types, armored or un-armored cables, you'll find them all. The range of cables is extremely wide and extends from flexible power cables with PVC, PE, XLPE and rubber compounds starting from 300V up to 35kV, with steel or aluminum wire or tape armored, to cables for safety circuits.

In a constant effort to offer innovative solutions, we recommend sector-shaped conductors which provide significant improvements with regards to conventional cables, such as: smaller diameter, lighter weight, longer installation life, easier to install and lay, longer continuous lengths and better workability. This range of cables is suitable for public building installations, industrial areas, medium voltage power transmission and distribution networks. The constructive structure can vary, aluminum or copper conductors, XLPE, HEPR or other compounds insulation, aluminum or copper screen, multiple compound types outer sheath (LSOH, fire-resistant), watertight tape, single or multi conductor structure.

They are also suited for use in a broad range of industrial applications especially for interconnecting part of machines used for manufacturing, machine tools and other equipment, but also for solar projects, for which have been especially designed cables to withstand the extreme weather condition suffered by photovoltaic installations and provide the maximum efficiency during the lifetime of installation.

Depending on cable type, our cables follow the below standards	
Standard Code	**Standard Name**
HD 21.3 (CENELEC)	Design standard
HD 21.5 (CENELEC)	Design standard
HD 603 (CENELEC)	Design standard
UNE 21123-4	Design standard
UNE 21123-2	Design standard
EN/IEC 60332-1	Flame propagation (single wire)
EN 60332-2	Flame propagation (single wire)
IEC 60332-3	Flame propagation (bunched wires)
EN 50266	Flame propagation (bunched wires)
IEC 60502	Design standard
IEC 60228	Conductor material class
EN 60332-3-24 or -25	Flame propagation (bunched wires)
EN 50267	Low corrosivity and acidity of evolved gases
EN 61034	Low opacity of evolved fumes
IEC 60754	Low corrosivity and acidity of evolved gases
IEC 61034	Low opacity of evolved fumes
EN 50200	Fire resistant, cat. PH 90
EN 50267	Low corrosivity and acidity of evolved gases
EN 61034	Low opacity of evolved fumes
IEC 60331	Fire resistant



Copper LV				
Cable Codifications (example)	**Construction**	**Cross-section (mm^2)**	**No. of Conductors**	**Flexibility Class**
NYY, CYY	Cu/PVC/PVC	1.5 to 630	Up to 40	Class 1 to Class 7
N2XY, U1000R2V, RV-K	Cu/XLPE/PVC	1.5 to 630	Up to 40	Class 1 to Class 7
N2XH, RZ1-K	Cu/XLPE/LSZH	1.5 to 500	Up to 40	Class 7
NHXH, SZ1-K	Cu/LSZH/FRP	1.5 to 300	Up to 40	Class 7
NYCY, CYCY	Cu/PVC/CWS/PVC	1.5 to 300	Up to 40	Class 1 to Class 7
N2XCY, C2XCY	Cu/XLPE/CWS/PVC	1.5 to 300	Up to 40	Class 1 to Class 7
N2XCH, C2XCH	Cu/XLPE/CWS/LSZH	1.5 to 300	Up to 40	Class 1 to Class 7
NYBY	Cu/PVC/STA/PVC	1.5 to 400	Up to 5	Class 1 to Class 5
N2XBY	Cu/XLPE/STA/PVC	1.5 to 400	Up to 5	Class 1 to Class 5
H07RN-F	Cu/EPR/OFR	1.5 to 630	Up to 40	Class 5
PV1-F	Cu/XLPE/LSZH	1.5 to 120	1	Class 5

Aluminium LV				
Cable Codifications (example)	**Construction**	**Cross-section (mm^2)**	**No. of Conductors**	**Flexibility Class**
NAYY, ACYY	Al/PVC/PVC	1.5 to 300	Up to 5	Class 1 to Class 5
NA2XY, U1000AR2V	Al/XLPE/PVC	1.5 to 300	Up to 5	Class 1 to Class 5
NA2XH	Al/XLPE/LSZH	1.5 to 300	Up to 5	Class 1 to Class 5
NAYBY	Al/PVC/STA/PVC	1.5 to 300	Up to 5	Class 1 & Class 2
NA2XBY	Al/XLPE/STA/PVC	1.5 to 300	Up to 5	Class 1 & Class 2

Cable Codifications	**Conductor Cross-Section (mm2)**	**Screen Cross-Section (mm2)**	**Voltage Level (kV)**	**Current Carrying Capacity***	
				Air (A)	**Ground (A)**
MV Cables					
N2XS(F)2Y	35 to 600	16 to 35	3.6 to 35	1096	875
N2XS(FL)2Y	35 to 630	16 to 35	3.6 to 35	1096	875
N2XSH	35 to 630	16 to 35	3.6 to 35	1096	875
NA2XS(F)2Y	35 to 630	16 to 35	3.6 to 35	953	719
NA2XS(FL)2Y	35 to 630	16 to 35	3.6 to 35	953	719
ABC	35 to 150	-	6 to 30	367	-

* Values valid for highest cross section and voltage level.

Cable Management System

Cable System Management - cable tray systems provide rigid structural support for cables in a variety of commercial and industrial applications, available in pre-galvanized, hot-deep galvanized or stainless-steel finish, materials. The main styles of cable tray are:

Perforated and Solid Cable Tray - perforated and solid cable tray is a one-piece support with either ventilated (perforated) or solid bottom (non-perforated) sections. These sections are used with a single power cable, multiple control, or signal circuit cables, designed to support cabling in 3.0m spans or less.

Cable Ladder - ladder consists of two longitudinal side members (side beams) connected by individual traverse (rungs) members. It is intended for use as a power cable or control cable support. Designed to reduce overall weight in weight sensitive environments while increasing strength. Ideal for offshore and modular applications where weight is a challenge. Our product is optimized to exceed load requirements while keeping weight to a minimum by using I-beam side rails.

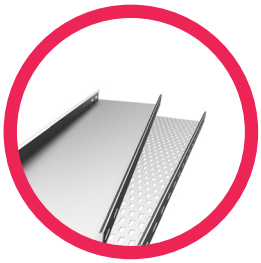
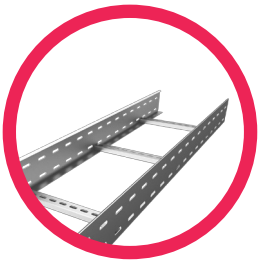
Wire Mesh Cable Tray - wire mesh cable trays are produced from high mechanical strength steel wire that is welded into a 50 x 100mm mesh system. This mesh is then formed into channel and finishing after fabrication. The 50 x 100mm mesh permits continuous airflow to help prevent heat buildup. This unique open design also prevents the build-up of dust, contaminants and bacterial proliferation and is primarily used for support of low voltage, telecommunication and fiber optic cables.

The life expectancy of a cable support system is dependent on the environment in which it is placed. Therefore, it is important to establish the corrosive properties of an environment to ensure that the right treatment and the right material are chosen.

Electro-galvanized - electrolytically, a zinc coating is deposited on the steel. The baths used cosist of acid or alkali solutions of zinc salts. The anodes are zinc and the parts to be coated, previously degreased and cleaned, are connected to the cathode. The minimum coating thickness by this method is 8µm. Such products are intended for use only in warm, dry areas with negligible pollutant levels.

Pre-galvanised - this galvanization method is the one which is practiced before there is any fabrication done over the material. While this is also a method of hot-dip galvanizing, it differs in the thickness of coating and its order in the flowchart of the process. This homogeneous coating thickness on the surfaces has a changing value from 10µm to 20µm (70gr/m2 140gr/m2) in accordance with EN 10346.Cable trays & support elements manufactured from a steel with such characteristics is recommended to be used inside buildings where dry air is present and lacking harming products and their related effects which may result in corrosion.

Hot Dip Galvanised - hot-dip galvanising is a coating method performed by dipping iron and steel products suitable for galvanising into a molten zinc bath. The minimum coating thickness on the surfaces is 45µm (325gr/m2) and the average coating thickness on the surfaces is about 55µm (395gr/m2) in accordance with EN ISO 1461 quality standard. Usage life of hot-dip galvanised cable trays & support units is predictable in any environments and it can keep its protective feature even in the heaviest atmospheric conditions.


Height (mm)	Width (mm)	Thickness (mm)	Load weight* (Kg/m)
Cable Ladders			
50	100 to 1000	1.2 to 2	98
60	100 to 1000	1.2 to 2	110
70	100 to 1200	1.2 to 2	125
80	100 to 1200	1.2 to 2	160
100	100 to 1200	1.2 to 2	180
125	150 to 1200	1.2 to 2	230
150	150 to 1200	1.2 to 2	280
Cable Trays			
25	50 to 600	0.6 to 2	72
35	50 to 600	0.6 to 2	82
40	50 to 600	0.6 to 2	118
50	50 to 900	1.2 to 2	135
60	50 to 900	1.2 to 2	160
75	100 to 900	1.2 to 2	190
100	100 to 900	1.2 to 2	240

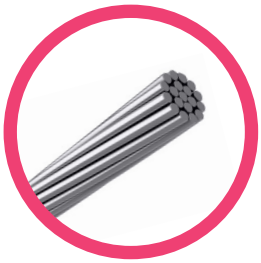
* Values valid for 1.5 m support distance and maximum ladder / tray thickness.

Height (mm)	Width (mm)	Wire diameter (mm)	Load weight* (Kg/m)
Wire Mesh			
35	50 to 600	4 to 5	48
60	50 to 600	4 to 5	68
85	100 to 600	4 to 5	78
110	100 to 600	4 to 5	105

* Values valid for 1.35 m support distance and maximum wire diameter and mesh width.

Type	Height (mm)	Width (mm)	Thickness (mm)
Accessories			
Horizontal 90o Bend	25 to 150	50 to 1200	1.2 to 2
Horizontal 45o Bend	25 to 150	50 to 1200	1.2 to 2
Vertical 90o Bend	25 to 150	50 to 1200	1.2 to 2
Vertical 45o Bend	25 to 150	50 to 1200	1.2 to 2
Tee Horizontal Bend	25 to 150	50 to 1200	1.2 to 2
Crossing Horizontal Bend	25 to 150	50 to 1200	1.2 to 2
Reducer Connection Set	25 to 150	50 to 1200	1.5
Reducer Tray	25 to 150	50 to 1200	1.2 to 2
Strip	25 to 150	50 to 1200	1 to 2
Cover	25 to 150	50 to 1200	0.6 to 2

Conductors & Ropes



Aluminum and **Copper** wire rope achieve maximum flexibility by using the highest amount of stranded wire, with application in power distribution, industrial and defense sector. *The classification of bunched wires is based on geometric arrangement, lay length and drection which are specified according to customer demand and wire sizes, packed in drums, from 7 to 1235 pieces bunched wires. Standard: ASTM B8, ASTM B172, ASTM B173, diameter: 0,19mm - 0,60mm, weight: 500 kg - 1000 kg.*

Steel wire rope are products which operate in demanding conditions and must resist crushing, bending fatigue and abrasion. Depending on constructive structure, the range of wire ropes are marine grade, compact strand, non-rotating, coated wire, spiral strand, fully locked coil. We can provide steel ropes for cranes, bridges, mines, ship industry, automotive, and other special applications.

Aluminium & Copper Ropes

Material	Flexibility Class	Wire Diameter (mm)	Overall Diameter (mm)	Cross-section (mm)	Weight (kg/km)
Copper or Tinned Copper	Class 5	0.3	3.1	6	49
		0.4	4.5 - 10.3	10 - 50	84 - 426
		0.5	12.3 - 24.9	70 - 300	611 - 2479
Copper	Class 2	1x2.7 - 1x4.4	2.7 - 4.4	6 - 16	50.9 - 135.3
		7x1.03 - 7x2.52	3.1 - 7.6	6 - 35	52.4 - 314
		19x1.78 - 19x2.52	8.1 - 11.4	50 - 95	425 - 851
		37x2.03 - 37x2.52	12.9 - 16	120 - 185	1076 - 1658
		61x2.21 - 61x2.52	18.2 - 20.3	240 - 300	2102 - 2733
Aluminium	Class 2	7x 2.1 - 3.0	6.3 - 9.0	25 - 50	66 - 135
		19x 2.1 - 2.8	10.5 - 14.0	70 - 120	181 - 321
		37x 2.25 - 2.5	15.8 - 17.5	150 - 185	405 - 500
		61x 2.25 - 2.8	20.3 - 29.1	240 - 400	669 - 1112

Steel Ropes

Designation	Type	Construction	Diameter (mm)	Weight (kg/m)
General Use Rope	6 x 7	6X7 M [6X(1+7)]	8 - 20	0.22 - 1.38
General Use Rope	6 x 19	6x19 M [6X(1+6+12)]	8 - 44	0.22 - 6.7
General Use Rope	6 x 19s	6x19 S [6X(1+9+9)]	8 - 35	0.23 - 4.40
General Use Rope	6 x 19w	6x19 W [6X(1+6+(6+6))]	8 - 44	0.23 - 6.95
General Use Rope	6 x 37	6x37 M [6X(1+6+12+18)]	8 - 66	0.24 - 15.07
General Use Rope	6 x 36w	6x36 WS [6X(1+7+(7+7)+14)]	8 - 58	0.24 - 14.11
General Use Rope	8 x 19w	8x19 W [8X(1+6+(6+6))]	8 - 52	0.22 - 9.19
General Use Rope	8 x 19s	8x19 S [8X(1+9+9)]	8 - 50	0-22 - 8.50
General Use Rope	8 x 36ws	8x36 WS [8X(1+7+(7+7)+14)]	10 - 60	0.36 - 12.82
Rotational Resistant Rope	18 x 7	18X7 [6X(1+6)+12X(1+6)]	10 - 40	0.38 - 6.12
Rotational Resistant Rope	35 x 7	35X07 [6X(1+6)+11X(1+6)+17X(1+6)]	10 - 40	0.39 - 6.2
High Performance Rope	18 x 7	18X7 [6X(1+6)+12X(1+6)]	10 - 40	0.38 - 6.12

Accesories

Cable lugs and Connectors - we offer a wide range of **Tinned Copper**, **Aluminum** and **Bi-metallic** compression connectors, suitable for the various types of conductor stranding used by the cable manufacturers. The dimensions of the tubes are designed to obtain the most efficient electrical conductivity and mechanical strength to resist vibration and pull out.

Cable Sleeves, Joints & Terminal Ends – low and medium voltage cable joints and terminations can be supplied in different constructive structure: paper insulated (PILC), plug-in, armoured or non armoured, single core or three core cable with wire, tape screen and Al tube for polymeric cables, belted or screened for paper insulated (PILC) cables. Our product range includes joints designed for special applications: shield break, transition and repair joint kits.

Metallic Enclosures - the metallic boxes offered by us consist in products with different dimension, having base colour RAL 7035 Grey, and include galvanized mounting plate. Our products provide innovative and efcient solutions, easy to install, designed for safe and reliable electrical distribution applications.

Cable Lugs			
Material	**Cable Size (mm²)**	**Stud Size**	**Length (mm)**
Aluminium	16 - 1000	M8 - M20	77 - 280
Tinned Copper	1.5 - 630	M4 - M20	17 - 200

Barrel Cable Connectors			
Material	**Cable Size (mm²)**	**Diameter (mm)**	**Length (mm)**
Aluminium	16 - 300	13 - 34	90 - 150
Tinned Copper	1.5 - 1000	3.7 - 58	12 - 230

Cable Sleeves, Joints & Terminal Ends			
Type	**Cable Max Cross-section (mm²)**	**Length (mm)**	**Tension (kV)**
LV	1.5 - 70	200 - 700	0.6 / 1
LV	95 - 300	500 - 1100	0.6 / 1
LV	300 - 500	500 - 1100	0.6 / 1
MV	10 - 240	650 - 1100	12 / 24 / 36
MV	150 - 500	650 - 1100	12 / 24 / 36
MV	500 - 1000	650 - 1100	12 / 24 / 36

Metallic Enclosures					
Width (mm)	**Height (mm)**	**Depth (mm)**	**Protection degree**	**Thickness (mm)**	**Color**
200	250 - 300	150	IP54	1.2	RAL 7035 Grey
300	300 - 450	150 - 250	IP54	1.2	RAL 7035 Grey
400	500 - 600	200 - 250	IP54	1.2	RAL 7035 Grey
500	600 - 700	200 - 300	IP54	1.2	RAL 7035 Grey
600	700 - 1400	200 - 400	IP54	1.2	RAL 7035 Grey
700	1000 - 1400	250 - 400	IP54	1.2	RAL 7035 Grey
800	1000 - 1400	250 - 400	IP54	1.2	RAL 7035 Grey

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