TELE-FONIKA Kable S.A.

Cables and Wires

2008 EDITION

TELE-FONIKA Kable S.A one of the biggeset cable producers in Europe.

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70-895 Szczecin, ul Kablowa 1
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EXPORT OFFICE

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The company was founded in 1992 and currently operates at the following Production Locations:

MANUFACTURING PLANTS

Factory TF 1 - Myślenice

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Factory TF 2 - Kraków

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Factory TF 3 - Kraków

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Factory TF 5 - Bydgoszcz

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Factory TOW „TF Kabel Ukraina" (ТОВ „ТФ Кабель Україна")

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tfk -ua@ukrpost.net

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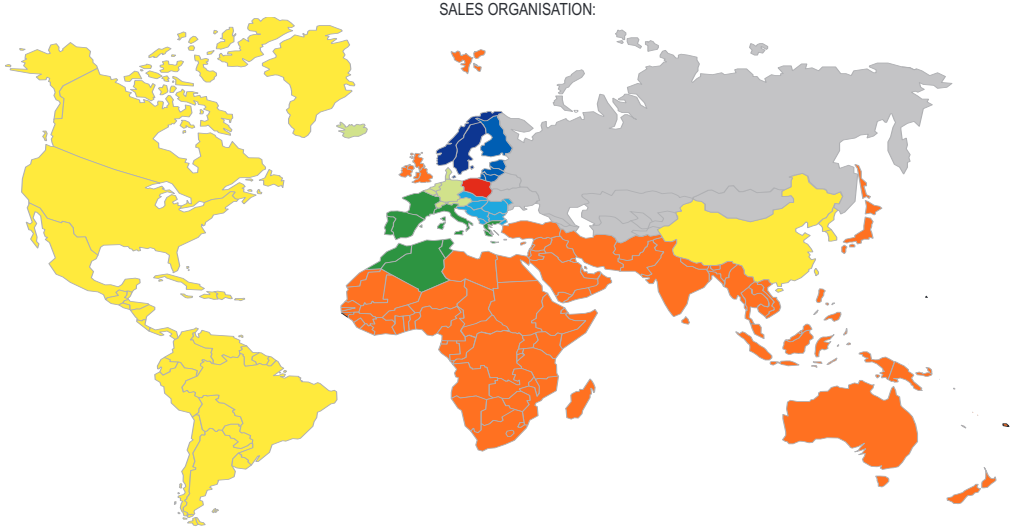
fax.:++381(0)19 423 530
e-mail: fkz@fkz.point-group.com
http:// www.fkz.co.yu

The present position of the company is the result of **dynamic development supported by the realization of investment projects** from 1994 to 2003, including the purchase of Krakowska Fabryka Kabli SA (1998) and Elektrim Kable SA (2002). Over 25,000 different types of cable and wires produced in the company's plants located in Kraków, Myślenice, Szczecin, Bydgoszcz, Chernihiv (Ukraina), Zaječar (Serbia), are delivered to customers in more than 50 countries worldwide.Our products have certificates confiming their highest quality and accordance with requirements of international standards defined by the certifying institutions.

We are a recognized and reliable supplier of copper, aluminium and fibre optic cables used by the world's leading companies specializing in the power industry, telecommunications, electronics, ship building and mining.

Our goal is to **deliver products of the highest quality at competitive prices**. Meeting customer expectations, we serve their needs via our Sales Representatives and network of Sales Offices operating actively on the international market.

SALES ORGANISATION:



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PRODUCTION RANGE COMPRISES:

- Low voltage power, control and instrumentation cables for fixed installation and flexible cords
- Rubber insulated cables
- Medium and high voltage power cables
- Shipboard cables
- Cables according to UL standards
- Mining cables
- Bare and insulated overhead conductors
- Bare wires and conductors
- Automotive wires
- Winding wires
- TV, SAT and AUDIO cables
- Telephone, fibre optic, data and computer cables

Quality certifications: **ISO 9001, ISO 14001**

TELE-FONIKA KABLE MANUFACTURE ACCORDING TO:

PN	GOST	AS/NZS	EATS
EN	SFS	CSN	JIS
IEC	NEK	NBN	UNI
HD	NEN	SABS/SANS	UNE
ISO	SEV	ASTM	NSAI
BS	SN	UL	SIRM
DIN	JUS	ICEA	NFS
VDE	SS	NEMA	SMIS
NF	BDS	MW	ANSI
CAN/CSA	I.S. IS	AEIC	MIL

TF Kable
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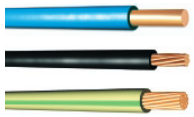
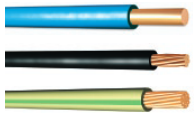
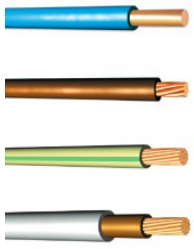
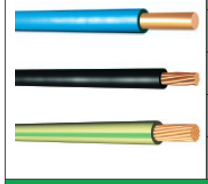
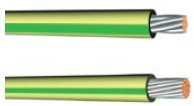
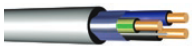
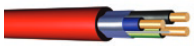
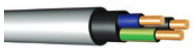
LOW VOLTAGE POWER, CONTROL AND INSTRUMENTATION CABLES FOR FIXED INSTALLATION AND FLEXIBLE CORDS

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
PVC INSULATED SINGLE CORE NON-SHEATHED CABLES						
	H05V-U	BS 6004 DIN VDE 0281-3 NF C 32-201-3 PN-HD 21.3 S3	300/500	1	0.5÷1	Suitable for installations in surface mounted or embedded conduits, only for signalling or control circuits.
	H05V-R					
	H05V-K					
	H05V2-U	BS 6004 DIN VDE 0281-7 NF C 32-201-7 PN-HD 21.7 S2	300/500	1	0.5÷1	Heat resistant cables for internal wiring only. Not suitable for fixed installations in distribution systems.
	H05V2-R					
	H05V2-K					
	H07V-U	BS 6004 DIN VDE 0281-3 NF C 32-201-3 PN-HD 21.3 S3	450/750	1	1.5÷10	Suitable for use in channels with cover and for fixed protected installation in or on lighting fittings and inside appliances, switchgear and controlgear for voltages up to 1000V a.c. or, up to 750V d.c. to earth.
	H07V-R				1.5÷400	
	H07V-K				1.5÷240	
	H07V2-U	BS 6004 DIN VDE 0281-7 NF C 32-201-7 PN-HD 21.7 S2	450/750	1	1.5÷2.5	Heat resistant cables for internal wiring and fixed protected installation inside appliances and in lighting fittings. Not suitable for fixed installations in distribution systems.
	H07V2-R			1	1.5÷35	
	H07V2-K			1	1.5÷35	
	PVC Insulated Single Core Non-Sheathed Cables	AS/NZS 5000,1	600/1000	1	1.0÷150	For Separate Earth Conductors. Switchboard & Panel Wiring, Fixed Wiring within Enclosures & Apparatus.
	SDI Cable PVC Ins. PVC Sheathed Single Core Cables	AS/NZS 5000,1	450/750	1	1.0÷16	For Mains, Submains & Subcircuits. Unenclosed, Enclosed, Buried or in Underground Ducts where it is not subject to Mechanical Damage. Max Operating Temperature 75°C
LOW SMOKE HALOGEN FREE SINGLE CORE NON-SHEATHED CABLES						
	H05Z-U	BS 7211 DIN VDE 0282-9	300/500	1	0.5÷1	For installation in surface mounted or embedded conduits, or similar closed systems, particularly for situations in which low emission of smoke and acid gases is required in the case of burning. Suitable for fixed protected installation in, or on, lighting and control gear for voltages up to 1000V a.c. or, up to 750V d.c. to earth.
	H05Z-K					
	H07Z-U	BS 7211 DIN VDE 0282-9	450/750	1	1.5÷10	
	H07Z-R			1	1.5÷400	
	H07Z-K			1	1.5÷240	
RUBBER, HEAT RESISTING SINGLE CORE NON-SHEATHED CABLES						
	H05G-U	DIN VDE 0282-7 BS 60D07	300/500	1	0.5÷1	Single core, rubber insulated cables for inner cabling of heating systems. In normal use the maximum permissible conductor temperature is 110°C.
	H05G-K					
	H07G-U	DIN VE 0282-7 BS 6007	450/750	1	1.5÷10	Single core, rubber insulated cables for internal wiring in dry locations only. For fixed installations or elsewhere, e.g. visible or embedded conduits or tubes. In normal use the maximum permissible conductor temperature is 110°C.
	H07G-R			1	1.5÷240	
	H07G-K			1	1.5÷240	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
UNSCREENED FIXED INSTALLATION CABLES						
	NYM-J NYM-O	DIN VDE 0250-204	300/500	1 2÷5 7 10÷12	1.5÷16 1.5÷35 1.5÷2.5 1.5	For fixed installation. Usable in the open, in dry, damp and wet environments in the open and concealed, as well as in masonry and in concrete, not suitable for imbedding in solidified - or compressed concrete. Outdoor usage is only possible, as long as the cable is protected against direct sunlight. Cables YDY, YLY with green/yellow core are designated with "żo" (e.g. YDYżo).
	YDY	ZN-92/MP-13 -K12173 PN-HD 21.4 S2	300/500	1 2÷7	1,5÷10 1÷10	
	YLY			1 2÷5 7, 10	1÷16 1÷35 1÷10	
	YDY	PN-87/E-90056	450/750	2÷4	1÷6	
	YLY		0,6/1	1÷4 5÷10	1÷150 1÷10	
	CYKY	Adapted to: CSN 34 7656 CSN 34 7657	750	2÷5 7÷12 19÷48	1,5÷16 1,5÷4 1,5÷4	
	EKK, FKK	SS 424 02 34	300/500	2÷5	1.5÷35	
	FR-N05VV-U	NF C 32-207	300/500	2÷5	1.5÷35	
	FR-N05VV-R					
	PFXP	HD 21.4 S2	300/500	2÷5	1.5÷35	
	VMvK	KEMA K 36 C-4	450/750	1 2÷4 5 6÷61	1.5÷300 1.5÷35 1.5÷25 1.5÷2.5	
	PVC-insulated and PVC-sheathed cables with circuit protective conductor UK Ref. 624(*)Y	BS 6004	300/500	1 2 3	1÷1.5 1÷16 1÷16	Single core, flat twin and 3-core, PVC sheathed cables. Fixed installation in dry or damp premises. Suitable for installation in walls, on boards and in channels or embedded in plaster.
	PVC-insulated and PVC-sheathed cables UK Ref. 6181Y 619(*)Y	BS 6004	300/500	1 2 3	1÷35 1÷16 1÷16	
	CYKYLo	Refer to individual product descriptions	450/750	2÷4	1.5÷4	Fixed installation in dry or damp premises. Suitable for installation in walls, on boards and in channels or embedded in plaster.
	XLPE Ins. PVC Sheathed Single Core Cables	AZ/NZS 5000,1	600/1000	1	25÷630	For Mains, Submains & Subcircuits. Unenclosed, Enclosed, Buried or in Underground Ducts where it is not subject to Mechanical Damage. Max Operating Temperature 90°C
	TPS Cable PVC Ins. PVC Sheathed Flat Cables	AZ/NZS 5000,2	450/750	2.2+E 3.3+E	1.0÷16	For General Wiring and Fire Alarm Systems, Unenclosed, enclosed in conduit, buried direct or in underground ducts in domestic, commercial and industrial installations that are not subject to mechanical damage.
	PVC Ins. PVC Sheathed Circular Cable Orange Sheath	AZ/NZS 5000,1 5000,2	450/750 600/1000	2+E 3+E 4+E	1.5÷300	For Mains, Submains & Subcircuits. Unenclosed, Enclosed, Buried or in Underground Ducts where it is not subject to Mechanical Damage. Max Operating Temperature 75°C

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
UNSCREENED FIXED INSTALLATION CABLES						
	XLPE Ins. PVC Sheathed Circular Cable Orange Sheath	AZ/NZS 5000,1	600/1000	2+E 3+E 4+E	1.5÷300	For Mains, Submains & Subcircuits. Unenclosed, Enclosed, Buried or in Underground Ducts where it is not subject to Mechanical Damage. Max Operating Temperature 90°C
SCREENED FIXED INSTALLATION CABLES						
	(N)YM(St)	DIN VDE 0250-204/ DIN VDE 0250-209	300/500	3÷5 7	1.5÷6 1.5÷2.5	These cables with screening are also ideal for installations in the living rooms of those peoples who are extreme sensitive to radiation in computer sector, hospitals etc. The cable is suitable for laying on, in and under plaster in dry and damp places as wall as in concrete and masonry.
LOW SMOKE HALOGEN FREE FIXED INSTALLATION CABLES						
	NHXMH-J NHXMH-O	DIN VDE 0250-214	300/500	1 2÷5 7	1.5÷16 1.5÷35 1.5÷2.5	Halogen - free light sheathed cable with improved fire behaviour. For industrial and wiring purposes. Usable in the open, in dry, damp and wet environments in the open and concealed, as well as in masonry and in concrete, not suitable for imbedding in solidified - or compressed concrete.
	Thermosetting insulated, sheathed cables with circuit protective conductor UK Ref. 624(*) LSF	BS 7211	300/500	1 2 3	1÷1.5 1÷16 1÷16	Single core, flat twin and 3-core sheathed cable with circuit protective conductor. Fixed installation in dry premises. Suitable for installation in walls on boards and in channels or embedded in plaster.
SCREENED LOW SMOKE HALOGEN FREE FIXED INSTALLATION CABLES						
	(N)HXMH(St)	DIN VDE 0250-214/ DIN VDE 0250-209	300/500	3÷5 7	1.5÷6 1.5÷2.5	These cables with screening are also ideal for installations in the living rooms of those peoples who are extreme sensitive to radiation in computer sector, hospitals etc. The cable is suitable for laying on, in and under plaster in dry and damp places as wall as in concrete and masonry.
HALOGEN-FREE LOW SMOKE FIRE RESISTANT FIXED INSTALLATION CABLES						
	FLAME-X 950 HDGs HLGs HLgGs HDGsekwf HLGsekwf HLgGsekwf	ZN-FKZ-20:1998 BS 7629 IEC 60331	300/500	2÷5 6÷37	1÷4 1÷2.5	FLAME-X 950 helps to protect human life in the event of fire in public buildings or industrial installations. By design it meets the most recent standards for both fire detection and alarm systems. For use as security cables in alarm systems, emergency lighting and evacuation systems, fire and smoke detection systems, marine and offshore installations. Construction: solid (D), stranded (L) or flexible (Lg) conductor, electrostatic screen (ekwf). Performance under fire conditions: IEC 60331-21; BS 6387 - category C,W,Z; IEC 60332-3-22 - category A.
	FLAME-X 950 ENHANCED	BS 7629 BS 5839-1	300/500V	2÷7	1÷4	For use in emergency circuits. These cables meet the requirements of BS 5839-1:2002 for enhanced fire resisting cables.

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
PVC SHEATHED FLEXIBLE CORDS						
	H03VV-F	DIN VDE 0281-5 BS 6500 NF C 32-201-5 PN-HD 21.5 S3	300/300	2÷4	0.5÷0.75	In domestic premises, kitchens, offices, for light duties, for light portable appliances (e.g. radio sets, table and standard lamps, office machines). Unsuitable for outdoor use, in industrial or agricultural buildings or for non-domestic portable tools.
	H03VVH2-F	DIN VDE 0281-5 BS 6500 NF C 32-201-5 PN-HD 21.5 S3	300/300	2	0.5÷0.75	
	H05VV-F	DIN VDE 0281-5 BS 6500, BS 7919 NF C 32-201-5 PN-HD 21.5 S3	300/500	2÷5	0.75÷4	For household appliances, including damp situations; for medium duties (e.g. washing machines, spin dryers and refrigerators). Unsuitable for outdoor use, in industrial or agricultural buildings or for non-domestic portable tools. OWY cables with green/yellow core are designated with "żo" (e.g. OWYżo).
	A05VV-F	DIN VDE 0281-5		7	1÷2.5	
	H05VVH2-F	DIN VDE 0281-5 BS 6500 NF C 32-201-5 PN-HD 21.5 S3	300/500	2	0.75÷1	
	H03V2V2-F	DIN VDE 0281-12 BS 6500 PN-HD 21.12 S1	300/300	2÷4	0.5÷0.75	In domestic premises, kitchens, offices for light duties for light portable appliances. In high ambient temperatures. Internally in equipment. Due to their special insulating and sheathing compounds these cables are suitable for heating and cooking appliances, and for use in enhanced temperature zones (e.g. luminaires) where there is no risk of contact with hot parts.
	H03V2V2H2-F	DIN VDE 0281-12 BS 6500 PN-HD 21.12 S1	300/300	2	0.5÷0.75	
	H05V2V2-F	DIN VDE 0281-12 BS 7919 BS 6500 PN-HD 21.12 S1	300/500	2÷5	0.75÷4	In domestic premises, kitchens, offices. In high ambient temperatures for household appliances, including in damp premises for medium duties. Internally in equipment. Due to their special insulating and sheathing compounds these cables are suitable for heating and cooking appliances, and for use in enhanced temperature zones (e.g. luminaries) where there is no risk of contact with hot parts.
	H05V2V2H2-F	DIN VDE 0281-12 BS 6500 PN-HD 21.12 S1	300/500	2	0.75÷1	
	PVC Sheathed Flexible Cords, Light Duty (Flat & Circular), Ordinary Duty, Heavy Duty	AS/NZS 3191 3191 3191 & 5000,1	250/250 250/440 600/1000	2 & 3 1,2,3,4 & 5 1, 2, 2+E 4+E, 5+E	0.5 & 0.75 0.5÷4 0.5÷120	Domestic, Commercial & Industrial including small appliances & Switchboard and control panels where fexibility is paramount.
HALOGEN-FREE THERMOPLASTIC INSULATED AND SHEATHED FLEXIBLE CORDS						
	H03Z1Z1-F	HD 21.14 S1	300/300	2÷4	0.5÷0.75	Where cords having a low level of emission of smoke and corrosive gases are required in the case of fire or of burning. In domestic premises, kitchens, offices; for light duties, for light portable appliances (e.g. radio sets, table and standard lamps, office machines).
	H03Z1Z1H2-F	HD 21.14 S1	300/300	2	0.5÷0.75	
	H05Z1Z1-F	HD 21.14 S1	300/500	2÷5	0.75÷4	Where cords having a low level of emission of smoke and corrosive gases are required in the case of fire or of burning. In domestic premises, kitchens, offices; for household appliances, including in damp premises; for medium duties (e.g. washing machines, spin dryers and refrigerators).
	H05Z1Z1H2-F	HD 21.14 S1	300/500	2	0.75÷1	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
LV PVC INSULATED POWER AND CONTROL CABLES						
	NYY	DIN VDE 0276-603 DIN VDE 0276-627	600/1000	1 2 3÷4 3 + 1 5 6÷61 7÷19	1.5÷500 1.5÷50 1.5÷300 25/16÷300/150 1.5÷95 1.5÷2.5 4	PVC insulated and sheathed power cables for use in the open air, underground, indoors and in cable ducts.
	YKY	PN-93/E-90401 PN-HD 603 S1:2002(u)	600/1000	1 2 3÷4 5	1÷1000 1÷35 1÷300 1÷240	
	1-CYKY	Adapted to: CSN 34 7659-3A IEC 60502-1 DIN VDE 0276-603	600/1000	1 3÷4 3+1	25÷630 25÷240 25+16÷240+120	PVC insulated and sheathed power cables for use in the open air, underground, indoors and in cable ducts.
	CBT CBT-c	BDS 16291-85	600/1000	1 2 3÷5 6÷37 6÷10	1÷500 1÷16 1÷240 1÷2.5 4÷10	
	NAYY	DIN VDE 0276-603	600/1000	1 3÷4	25÷500 16÷240	
	YAKY	PN-93/E-90401 PN-HD 603 S1:2002(u)	600/1000	1 3÷4	4÷1000 4÷300	
	1-AYKY	Adapted to: CSN 34 7659-3A IEC 60502-1 DIN VDE 0276-603	600/1000	1 3÷4 3+1	16÷630 16÷300 25+16÷300+150	
	CABT CABT-c	BDS 16291-85	600/1000	1 2 3÷5	6÷500 6÷16 6÷240	
	NYK NYKY	DIN VDE 0265	600/1000	1 2 3÷4 3 + 1 7÷61 7÷19 7÷10	25÷500 6÷16 4÷240 25÷240 1.5÷2.5 4 6	PVC insulated lead-sheathed power cables for power networks, underground, outdoors, in water, indoors and in cable ducts where influences from fuels, oils and solvents are to be expected.
LV XLPE INSULATED POWER AND CONTROL CABLES						
	NI2XY	DIN VDE 0262	600/1000	1 3 4 5 7÷40	10÷35 1.5÷16 1.5÷35 1.5÷16 1.5÷2.5	XLPE insulated and PVC sheathed power cables for use in the open air, indoors and in concrete. Not for installation underground and water.

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
LV XLPE INSULATED POWER AND CONTROL CABLES						
	N2XY	DIN VDE 0276-603 DIN VDE 0276-627	600/1000	1 3÷4 5 7÷61 7÷19	1.5÷500 1.5÷240 1.5÷2.5 1.5÷2.5 4	XLPE insulated and PVC sheathed power cables for use in the open air, underground, indoors and in cable ducts.
	YKXS	ZN-96/MP-13-K1 203	600/1000	1 2 3÷4 5	1÷1000 1÷35 1÷300 1÷240	
	NA2XY	DIN VDE 0276-603	600/1000	1 3÷4	25÷500 25÷240	
	YAKXS	ZN-96/MP-13-K1 203	600/1000	1 3÷4	4÷1000 4÷300	
	U-1000 R2V	NF C 32 321	600/1000	1 2 3÷4 5 7÷37 7÷19	1.5÷500 1.5÷35 1.5÷300 1.5÷25 1.5÷2.5 4	XLPE insulated and PVC sheathed power cables for use in the open air, underground, indoors and in cable ducts.
	YMvKmb	HD 604 S1 Part 4 Sec. D (KEMA K42B-4)	600/1000	1 2 3÷4 5	1.5÷500 1.5÷95 1.5÷240 1.5÷95	XLPE insulated and PVC sheathed power cables.
	XVB-F2	NBN-IEC 502-NAD	600/1000	1 2,5 3÷4 7÷40	1.5÷500 1.5÷35 1.5÷240 1.5÷4	XLPE insulated and PVC sheathed power cables.
	XLPE/PVC	BS 7889	600/1000	1	50÷500	For use in fixed installations in industrial areas, buildings and similar applications but not for direct burial in the ground.
	TXXP	NEMKO 182.52	600/1000	1	50÷630 Al	XLPE insulated, PVC sheathed cable, for power networks, underground, outdoors, indoors and in cables ducts.
	TFXP	HD 603-5M	600/1000	4	50÷240 Al	XLPE insulated cable, with PE inner sheath and PVC outer sheath, for power networks, underground, outdoors, indoors and in cable ducts.
	XMK AXMK	HD 603-5D SFS 4879	600/1000	1 1 3,5 4	300 Cu 300; 500; 800 Al 25÷300 Al 16÷300 Al	XLPE insulated, PVC sheathed cable, for power networks, underground, outdoors, indoors and in cables ducts.
	VO-YMvKas	HD 604 S1 Part 4 Sec. D (KEMA K42B-4)	600/1000	2 3÷5 6÷37	1.5÷25 1.5÷16 1.5÷2,5	XLPE insulated, galvanized steel wire braided, reduced fire propagating PVC sheathed power cables with flat earth continuity conductor of tinned copper wires.
LV POWER CABLES WITH CONCENTRIC COPPER CONDUCTOR						
	NYCY	DIN VDE 0276-603 DIN VDE 0276-627	600/1000	2÷5 3÷4 7÷61 7÷19	1.5÷16 25÷240 1.5÷2.5 4	PVC insulated and PVC sheathed cables with round copper wires outer layer, cables predominantly designed for installation in industrial and control equipment, in power stations and wherever a high level of both electrical and mechanical protection is required.
	NAYCY	DIN VDE 0276-603	600/1000	3÷4	16÷50	
	NYCWY			2÷4 3 4	10÷16 25÷240 25÷150	
	NAYCWY			3	25÷185	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
LV POWER CABLES WITH CONCENTRIC COPPER CONDUCTOR						
	PFSP	HD 603 S1 :1994 NEMKO 182.52	600/1000	2÷4 3; 4	2.5÷16 Cu 16÷240Cu 16÷240 Al.	PVC insulated, PVC sheathed cable with concentric copper conductor, for power networks, underground, outdoors, indoors and in cables ducts.
	TFSP	HD 603-5J NEMKO 182.52	600/1000	3; 4	16÷240 Al. 16÷240 Cu	XLPE insulated, PVC sheathed cable with concentric copper conductor, for power networks, underground, outdoors, indoors and in cables ducts.
	EKKJ FKKJ	SS 424 14 18 HD 603-3-L	600/1000	1 2 3÷4	2.5÷630 2.5÷16 2.5÷240	PVC insulated, PVC sheathed cable with concentric copper conductor for electricity supply, used for installation in or above ground and water.
	AKKJ			1 3÷4	16÷630 16÷240	
	MCMK	HD 603 S1/A2 SFS 4880	600/1000	1, 2 3 4	1.5÷10 1.5÷300 1.5÷16	PVC insulated and PVC sheathed cable with concentric conductor for power networks, underground, outdoors, indoors and in cable ducts.
	AMCMK			3 4	16÷300 35÷185	
	Single-phase split concentric cables	BS 4553-1 BS 4553-2	600/1000	1	4÷35	PVC or XLPE insulated single-phase split concentric cables suitable for underground of general use.
		BS 7870-3.20 BS 7870-3.21		1 3	4÷25 25÷35	
	Single-phase straight concentric cables	BS 7870-3.11 BS 7870-3.10	600/1000	1 3	4÷25 16÷25 16÷35	PVC or XLPE insulated single-core phase plus helical concentric copper earth conductor, suitable for use underground of general use.
	AL/XLPE/ CWW/PVC	BS 7870 3.40	600/1000	3c ÷ 4 cores	35÷300	XLPE insulated, copper wire waveform concentric cables with solid aluminium conductors and PVC sheath for use in electrical networks.
LV ARMOURED POWER CABLES						
	NYRY	DIN VDE 0271	600/1000	2÷5 2÷40 2÷19	1.5÷16 1.5÷2.5 4	PVC insulated and PVC sheathed steel wires armoured cables for power networks, underground, outdoors, in water, indoors and in cable ducts if greater mechanical protection is required.
	NYRGY	DIN VDE 0271	600/1000	4 3 + 1	25÷300 25/16-240/120	PVC insulated and PVC sheathed steel wires armoured cables for power networks, underground, outdoors, in water, indoors and in cable ducts if greater mechanical protection is required.
	1-CYKYDY	Adapted to: CSN 34 7615	600/1000	4 4÷5 4÷7 3÷24 3+1	25÷300 6÷16 4 1,5÷2,5 25+16-240+120	
	NYFGY NAYFGY	DIN VDE 0271	600/1000	4 3 + 1	35÷300 25/16 ÷300/150	PVC insulated and PVC sheathed flat steel wires armoured cables for power networks, underground, outdoors, in water, indoors and in cable ducts if greater mechanical protection is required.

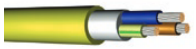
	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
LV ARMOURED POWER CABLES						
	NYBY	DIN VDE 0271	600/1000	3 + 5 3 + 1 2÷40 2÷19	1.5÷240 25/16÷240/120 1.5÷2.5 4	PVC insulated and PVC sheathed steel tapes armoured cables for power networks, underground, outdoors, in water, indoors and in cable ducts if greater mechanical protection is required.
	CBbT-c	BDS 16291-85	600/1000	2 3÷5 6÷37 6÷10	1.5÷16 1.5÷240 1.5÷2.5 4÷10	
	Cu/PVC/AWA/ PVC	BS 6346	600/1000	1	50÷500	PVC insulated and PVC sheathed steel or aluminium wires armoured cables for the supply of electrical energy.
	Cu/PVC/SWA/ PVC	BS 6346	600/1000	2 3÷4 3 + 1 5 7÷48 7÷19	1.5÷240 1.5÷300 25/16÷300/150 1.5÷70 1.5÷2.5 4	
	Cu/XLPE/PVC/ AWA/PVC	BS 5467	600/1000	1	50÷500	XLPE insulated, PVC bedded, steel or aluminium wires armoured and PVC sheathed power and auxiliary control cables for power networks, underground, outdoors, indoors and in cable ducts.
	Cu/XLPE/PVC/ SWA/PVC	BS 5467	600/1000	2÷4 3 + 1 5 7÷48 7÷19	1.5÷240 25/16÷240/120 1.5÷70 1.5÷2.5 4	
	PVC Ins. PVC Sheathed Circular Cable With Galv Steel Wire Armour Orange Sheath	AS/NZS 5000,1 5000,2	450/750 600/1000	2+E 3+E 4+E	1.5÷300	For Mains, Submains & Subcircuits, Unenclosed, Enclosed, Buried or in Underground Ducts where Mechanical Damage may occur. Max Operating Temperature 75°C.
	XLPE Ins. PVC Sheathed Circular Cable With Galv Steel Wire Armour Orange Sheath	AS/NZS 5000,1	600/1000	2+E 3+E 4+E	1.5÷300	For Mains, Submains & Subcircuits, Unenclosed, Enclosed, Buried or in Underground Ducts where Mechanical Damage may occur. Max Operating Temperature 90°C.
HALOGEN-FREE LOW SMOKE POWER CABLES						
	N2XH	DIN VDE 0276-604	600/1000	1 2÷4 5 7÷40 7÷19	1.5÷500 1.5÷240 1.5÷16 1.5÷2.5 4	XLPE insulated and halogen-free thermoplastic compound sheathed power and auxiliary control cables for the supply of electrical energy. Special for installations where fire and emissions of smoke and toxic fumes create a potential threat. Not suitable for use in water.
	N2XCH	DIN VDE 0276-604	600/1000	2÷4 7÷40 7÷19	1.5÷240 1.5÷2.5 4	
	RZ1-K	UNE 21123-91 IEC 60502-1 IEC 60332-3	600/1000	1 2 3 4 3 + 1	1.5÷240 1.5÷25 1.5÷50 1.5÷10 10/6÷50/25	Halogen-free thermoplastic compound insulated and sheathed flexible power cables for the supply of electrical energy. Specially for installations where fire and emissions of smoke and toxic fumes create a potential threat.

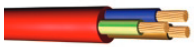
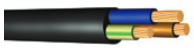
	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
HALOGEN-FREE LOW SMOKE POWER CABLES						
	1-CHKE-R	Refer to individual product description	600/1000	1 2 3 4÷5 7 12	25÷300 1.5÷2.5 1.5÷16 1.5÷150 1.5÷2.5 1.5	EPR insulated and halogen-free thermoplastic compound sheathed power and auxiliary control cables for the supply of electrical energy. Special for installations where fire and emissions of smoke and toxic fumes create a potential threat. Not suitable for use in water.
ARMOURED HALOGEN-FREE LOW SMOKE POWER CABLES						
	Cu/XLPE/LS0H/ AWA/LS0H	BS 6724	600/1000	1	50÷500	XLPE insulated, LSOH bedded, steel round wires armoured and LSOH sheathed power and auxiliary control cables for the supply of electrical energy. Special for installation where fire and the emission of smoke and toxic fumes create a serious potential threat.
	Cu/XLPE/LS0H/ SWA/LS0H	BS 6724	600/1000	2÷4 5 3 + 1 7÷48 7÷19	1.5÷240 1.5÷70 25/16 ÷240/120 1.5÷2,5 4	
HALOGEN-FREE LOW SMOKE FIRE RESISTANT POWER CABLES						
	FLAME-X 950 NKGs	ZN-FKZ-033:1997 IEC 60331	600/1000	1 2 3÷4 5 6÷19 24÷61	1.5÷500 1.5÷50 1.5÷240 1.5÷95 1.5÷4 1.5÷2.5	FLAME-X 950 helps to protect human life in the event of fire in public buildings or industrial installations, e.g. in industrial complexes, power stations, public buildings, hotels, underground railway systems, hospitals, airports, data processing centres, emergency power supply and alarm systems etc. Suitable for fixed installation in dry and moist rooms as well as for outdoor applications, not however direct installation in the earth or in water. Performance under fire conditions: Insulation integrity for 180 minutes – IEC 60331-21; Flame propagation: EN 50266-2-2, IEC 60332-3-22 – Cat. A
	1-CHKE-V	Refer to individual product description	600/1000	1 2 3 4÷5 7, 12 19÷48	25÷300 1÷6 1÷50 1÷150 1÷4 1÷2.5	Halogen-free low smoke fire resistant power cables are designed for fixed installation both in ordinary and damp environments. They can also be used on an inflammable surface and in environments with fire hazards where maintenance of circuit integrity during and after a fire is required. Performance under fire conditions: Insulation integrity for 180 minutes – IEC 60331-21; Flame propagation: EN 50266-2-2, IEC 60332-3-22 – Cat. A
	FLAME-X 950 (N)HXH FE180/E 30	DIN VDE 0266 DIN 4102-12	600/1000	1 2 3÷4 5 7÷30	1.5÷300 1.5÷25 1.5÷240 1.5÷50 1.5÷2.5	Fire resistant security cables for installation everywhere where high safety requirements have a special significance e.g., in industrial complexes, power stations, public buildings, hotels, underground railway systems, hospitals, airports etc. Suitable for fixed installation in dry and moist rooms as wall as for outdoor applications, not however direct installation in the earth or in water. FE180: Insulation integrity for 180 minutes – DIN VDE 0472/814 (IEC 60331-21). E30 and E90: Functionality for electrical cable systems for minimum 30 minutes (E30) and 90 minutes (E90) – DIN 4102-12. Flame propagation: DIN VDE 0472-804 C (IEC 60332-3)
	FLAME-X 950 (N)HXCH FE180/E 30	DIN VDE 0266 DIN 4102-12	600/1000	2 3 4 7÷30	1.5÷16 1.5÷185 1.5÷150 1.5÷2.5	
	FLAME-X 950 (N)HXH FE180/E 90	DIN VDE 0266 DIN 4102-12	600/1000	3 4 5 7÷12	1.5÷185 1.5÷185 1.5÷50 1.5÷2.5	
	FLAME-X 950 (N)HXCH FE180/E 90	DIN VDE 0266 DIN 4102-12	600/1000	2 3 4 7÷24	1.5÷16 1.5÷150 1.5÷120 1.5÷2.5	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
FLEXIBLE CONTROL CABLES						
	NYSLY	DIN VDE 0245-102	300/500	3÷61	0.5÷2.5	NYSLY – PVC insulated, PVC sheathed flexible control cables. NYSLYCY – PVC insulated, PVC sheathed copper-screened flexible control cables. Use as measuring, control and connection cables for all electrical equipment, especially in industrial areas, in machines tool engineering, plant construction etc.
	NYSLYCY	DIN VDE 0245-102	300/500	3÷61	0.5÷2.5	
	H05VV5-F (NYSLYÖ)	DIN VDE 0281-13 BS 7919 PN-HD 21.13 S1	300/500	2÷60	0.5÷2.5	H05VV5-F – unscreened and H05VVC4V5-K – screened oil resistant cables are used as control and junction cables in the machinery and tool-making industries and as well as in conveyor belts and on production lines. The cables are resistant to general-purpose mineral oils but are not designed for continuous immersion in oil. Screened cables are not designed for continual flexing.
	H05VVC4V5-K (NYSLYCÖ)	DIN VDE 0281-13 BS 6004 PN-HD 21.13 S1	300/500	2÷60	0.5÷2.5	
	SY	Refer to individual product descriptions	300/500	2÷61	0.5÷2.5	Control cables in tool machinery, plant installation, power stations and in data equipment. The braided screen of galvanized steel wires offers best possible protection against mechanical damage without reducing flexibility.
	CY	Refer to individual product descriptions	300/500	2÷61	0.5÷2.5	Tinned copper braided screened cables for use as a data and control cables in machinery, computer systems etc., as well as a signal cable for electronics.
	LIYY	Requirements as per: DIN VDE 0812, DIN VDE 814	500 – peak voltage	2÷34 2÷25	0.5÷0.75 1.0÷1.5	Flexible PVC cables apply especially to such areas as tool making and machine industries as well as electronic, computer, measurement and control sectors.
	LIYCY	Requirements as per: DIN VDE 0812, DIN VDE 0814		2÷34 2÷25	0.5÷0.75 1.0÷1.5	Control and signal cables in all areas requiring lowest possible measurement transfer such as computers and control apparatus.
INSTRUMENTATION CABLES						
	Polyethylene insulated instrumentation cables Type 1 and Type 2	BS 5308-1	300/500 (not suitable for direct connection to a low impedance source)	1÷50 pairs	0.5÷1.5	Multipair polyethylene insulated cables with screens (with collective or with individual pair and collective screen) or without screens and optionally incorporating single wire armour, used in the provision of communication services and the interconnection of electrical equipment's and instruments, particularly in and around process plant. The cables used mainly by the petroleum industry. Type 1 unarmoured cables are generally for indoor applications. Type 2 armoured cables are suitable for burial underground.
	PVC insulated instrumentation cables Type 1 and Type 2	BS 5308-2	300/500 (not suitable for direct connection to a low impedance source)	1÷40 core 1÷50 pairs	0.5÷1.5	Multicore and multipair PVC insulated cables with screens (with collective or with individual pair and collective screen) or without screens and optionally incorporating single wire armour, used in the provision of communication services and the interconnection of electrical equipment's and instruments, particularly in and around process plant. The cables used mainly by the chemical and petrochemical industry. Type 1 unarmoured cables are generally for indoor applications. Type 2 armoured cables are suitable for burial underground.

RUBBER INSULATED CABLES

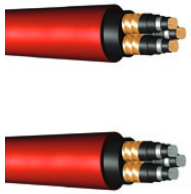
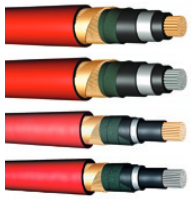
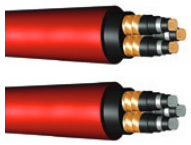
	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
CABLES IN RUBBER						
	Type 4	BS 6195	Category A, C, D, E, F	1	0.75÷400	Single cores flame retardant composite rubber insulated cables for coil lead.
	H05RNH2-F	DIN VDE 0282-8	300/500	2	1.5÷2.5	Cables for decorative chains used for lamp-holder for indoor and outdoor use Flat two core cables for temporary decorative illumination only.
	H05RR-F	DIN VDE 0282-4 BS 6500 BS 7919 NF C 32-102-4	300/500	2 3÷4 5	0.75÷2.5 0.75÷6 0.75÷2.5	In domestic premises, kitchens and offices for supplying portable or light mobile appliances which are subject to low mechanical stresses (e.g. vacuum cleaners, electric irons cooking appliances). Not suitable for permanent use outdoors, in agriculture, in industrial.
	H05RN-F	DIN VDE 0282-4 BS 6500 NF C 32-102-4	300/500	2÷3	0.75÷1	In domestic premises, kitchens and offices for supplying portable or light mobile appliances which are subject to low mechanical stresses (e.g. vacuum cleaners, electric irons cooking appliances). Also suitable for permanent use outdoors for ordinary duty applications.
	H05RN-F	DIN-VDE 0282-8	300/500	1	0.75÷1.5	
	H07RN-F	DIN VDE 0282-4 BS 7919 NF C 32-102-4	450/750	1 2 3 4 5 6÷36 6÷18	1.5÷500 1÷25 1÷240 1÷185 1÷25 1.5÷2.5 4	Heavy-duty flexible cables are suited for use for medium mechanical stress in dry, damp and wet areas as well as in open air in agriculture plants, eg. for industrial and agricultural workshop appliances, large boiling installations, heating plates, inspections lamps, electrical tools such as drills, circular saws, domestic electric tools, and also for transportable motors or machines on building sites or in agricultural workings etc.
	H05BB-F	DIN VDE 0282-12 BS 6500, BS 7919	300/500	2 3÷4 5	0.75÷2.5 0.75÷6 0.75÷2.5	For general use in domestic premises, kitchens and offices and for supplying appliances where the cables are subjected to low mechanical stresses (eg., cooking appliances, soldering irons, toasters). Suitable for use at maximum conductor temperature of 90°C and at a minimum temperature of –40°C.
	H07BB-F	DIN VDE 0282-12 BS 7919	450/750	1 2 3 4 5	1.5÷500 1÷25 1÷300 1÷300 1÷25	In dry, humid or moist rooms, in open air, in workshops; for medium mechanical stresses, eg. for industrial and agricultural workshop appliances, large boiling installations, heating plates, inspection lamps, electrical tools such as drills, circular saws, domestic electric tools, and also for transportable motors or machines on building sites or in agricultural workings, etc. Also for low temperature outdoor use with caravans, car heaters and at camping sites. Suitable for use at maximum conductor temperature of 90°C and at a minimum temperature of –40°C.
	H05BN4-F UK Ref. 318*TQ	DIN VDE 0282-12BS 6500	300/500	2÷3 4	0.5÷2.5 0.75÷2.5	85°C EPR insulated and HOFR sheathed flexible cords in domestic premises, kitchens and offices. Suitable for hot situations (e.g. night storage heaters, immersion heaters) and for situations involving contact with oils and grease. Suitable for use at maximum conductor temperature of 90°C.
	H07BN4-F UK Ref. 638*TQ	BS 6007 BS 7919	450/750	1 2 3 4 5 12÷36	1.5÷500 1÷25 1÷240 1÷185 1÷25 1.5÷2.5	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
CABLES IN RUBBER						
	05SN4-F	BS 6500 DIN VDE 0282-12	300/500	2÷3 4	0.5÷2.5 0.75÷2.5	Silicone rubber insulated and CPE sheathed flexible cords are especially recommended for use in installation of recessed luminaires, lighting fittings where conductor insulation is exposed to high ambient temperature, UV and infra red radiation, where heat dissipation is inhibited.
	H07ZZ-F	DIN VDE 0282-13 BS 7919	450/750	1 2 3÷4 4 5 7	1.5÷500 1÷25 1÷185 1÷185 1÷25 1.5÷2.5	For indoor and temporary outdoor, particularly for situations in which low emission of smoke and corrosive gases is required in the case of burning. The defined tests for smoke and corrosive gases relate only to the cables, and not to cable and conduit together.
	H07RN8-F	DIN VDE 0282-16	450/750	1 2 3 4 5 6÷36 6÷18	1.5÷500 1÷25 1÷240 1÷185 1÷25 1.5÷2.5 4	These cables are ideal for the connection of submersible motor pumps for construction site drainage down to a water depth of about 10 m and a maximum water temperature up to 40°C. They are able to withstand medium mechanical stresses and can also be permanently laid, e.g. on walls, floors, machinery and towers. Unsuitable for under-water power transmission or installation in a waterway.
	NSHTÖU	DIN VDE 0250-814	600/1000	3÷4 5 7÷18	1.5÷150 70 1.5÷4	Trailing cables used for high mechanical stress, especially for applications with frequent winding and unwinding with simultaneous tensile and torsional stress, for building machinery, conveyors, shifts and cranes.
	NSGAFÖU NSGAFCÖU	DIN VDE 0250-602	0,6/1 kV 1,8/3 kV 3,6/6 kV	1	1.5÷400	Special rubber insulated cable especially suitable as short-circuit rating in rail-coaches and buses, as well as in day rooms. In switching systems and distribu-tors, these cables are considered to be short-circuit up to 1000V and earth-fault safe.
	NSSHÖU NSSHCÖU	DIN VDE 0250-812	600/1000	1 2 3÷4 5 6÷7 8÷12	1.5÷400 1.5÷120 1÷185 1.5÷70 1.5÷50 1.5÷4	Rubber insulated flexible cables with or without protective conductors for the connection of mobile equipment and machines under very high mechanical loads in dry and damp areas, outdoors and in explosion hazard areas, particularly in mining, and at quarries and building sites.
	R(N)TSCGEWOU (N)TSCGEWOU	DIN VDE 0250-813	3,6/6 kV ÷18/30kV	3	25+3x25/3 ÷3x185 +3x95/3	For the connection of large mobile equipment such excavators and spreaders for surface mining and for installation along conveyor systems with very high mechanical stress.
	658-FR	BS 7917 1999	150/250 600/1000	1 PR÷10 PR 2c÷27 cores	0.75÷1.5 1.5÷16.0	For electrical and electronic equipment of ships. Flame retardant.
	0361 TQ	BS 638 1996	300	1c	16.0÷240	For use between the welding equipment and the hand electrode
	H07BN4-F	BS 7919 2001	450/750	1c÷5 cores	4.0÷630	Heavy duty heat resisting flexible cables for use at temperaure of conductor 90 deg C with medium

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
WELDING CABLES (see also on page 28)						
	H01N2-D	DIN VDE 0282-6 NF C 32-510 BS 638	100/100	1	10÷185	For use between the welding generator and the hand electrode and the workpiece, in the automobile industry in shipbuilding, in transport and conveyor systems, tool making machinery, welding robots etc.
	H01N2-E					
RUBBER, HEAT RESISTING SINGLE CORE NON-SHEATHED CABLES						
	SID	Refer to individual product descriptions	300/500	1	0.5÷6	Single core silicone insulated cables for use in situations, where heat or the interaction of extremely high and low temperatures rapidly causes cable insulation to become brittle and inflexible. In normal use the maximum permissible conductor temperature is 180°C.
	SIF			1	0.25÷120	
	H05S-U	DIN VDE 0282-3 BS 6007 NF-C 32-102-3	300/500	1	0.5÷2.5	
	H05S-K					
RUBBER, HEAT RESISTING SHEATHED CABLES						
	SIHF	Adapted to DIN VDE 0250-816	300/500	2÷5	0.5÷16	Silicone cables were evolved for use wherever insulation is subjected to extreme temperature changes. They are heat-resistant up to 180°C, for short time operation up to 250°C. These cables have become an essential element in a wide range of industrial sectors, including foundries, steel and hot-rolling mills, cooking plants, in electric motor, ship and aircraft construction, on extruders, in heating and lighting systems, bakery machinery, oil burners, solaria and in many other areas.
	H05SS-F	BS 7919	300/500	2 3÷4 5	0.75÷2.5 0.75÷4 0.75÷2.5	
PUR - SHEATHED CABLES						
	H05BQ-F	DIN VDE 0282-10 BS 7919	300/500	2÷5	0.75÷1	PUR-sheathed flexible cables are used for high mechanical stress, especially for scouring and dragging stress, for use in dry, damp and wet places as well for performance in open air and also for the connection of electronic tools and lights on construction sites or in agricultural plants. Suitable for fixed installation on the surface of plaster, housing, provisional buildings, on machines cranes etc.
	05BQ-F			6÷24	0.75÷1	
	H07BQ-F	DIN VDE 0282-10 BS 7919	450/750	2÷5	1.5÷16	
	07BQ-F			7÷24	1.5÷2.5	
	NYMHI1YÖ	DIN VDE 0250-407	300/500	2÷5	0.75÷2.5	PVC insulated and PUR sheathed flexible cables for power installation.

MEDIUM AND HIGH VOLTAGE POWER CABLES

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
MEDIUM VOLTAGE XLPE INSULATED POWER CABLES						
	N2XSY NA2XSY N2XS2Y NA2XS2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	1	35 ÷ 630	XLPE insulated power cable, for power networks: ground, air and ducts.
			18/30(36)		50 ÷ 630	
	YHKXS YHAKXS XHKXS XHAKXS	ZN-TF-501	3.6/6(7.2) 6/10(12) 8.7/15(17.5) 12/20(24) 18/30(36)	1	35 ÷ 1000	
	N2XSY NA2XSY N2XS2Y NA2XS2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	3 x 1*	35 ÷ 400	XLPE insulated power cable, for power networks: ground, air and ducts. * Single core cables in triplex formation.
			18/30(36)		50 ÷ 400	
	N2XS(F)2Y NA2XS(F)2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	1	35 ÷ 630	XLPE insulated longitudinally sealed power cable, for power networks: ground, air and ducts.
			18/30(36)		50 ÷ 630	
	XUHKXS XUHAKXS	ZN-TF-501	3.6/6(7.2) 6/10(12) 8.7/15(17.5) 12/20(24) 18/30(36)	1	35 ÷ 1000	
	N2XS(F)2Y NA2XS(F)2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	3 x 1*	35 ÷ 400	XLPE insulated longitudinally sealed power cable, for power networks: ground, air and ducts.
			18/30(36)		50 ÷ 400	
	N2XS(FL)2Y NA2XS(FL)2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	1	35 ÷ 630	XLPE insulated longitudinally and radial sealed power cable, for power networks: ground, air and ducts.
			18/30(36)		50 ÷ 630	
	XRUHKXS XRUHAKXS	ZN-TF-501	3.6/6(7.2) 6/10(12) 8.7/15(17.5) 12/20(24) 18/30(36)	1	35 ÷ 1000	
	N2XS(FL)2Y NA2XS(FL)2Y	DIN VDE 0276 -620	6/10(12) 12/20(24)	3 x 1*	35 ÷ 400	XLPE insulated longitudinally and radial sealed power cable, for power networks: ground, air and ducts. * Single core cables in triplex formation.
			18/30(36)		50 ÷ 400	

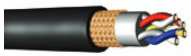
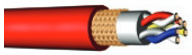
	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
MEDIUM VOLTAGE XLPE INSULATED POWER CABLES						
	N2XSEY NA2XSEY N2XSE2Y NA2XSE2Y N2XSY NA2XSY N2XS2Y NA2XS2Y	DIN VDE 0276-620	6/10(12)	3	35 ÷ 300	XLPE insulated power cable, for power networks: ground, air and ducts.
	Y3HKXS Y3HAKXS X3HKXS X3HAKXS YHKXS YHAKXS XHKXS XHAKXS	ZN-TF-502	3.6/6(7.2) 6/10(12) 8.7/15(17.5) 12/20(24) 18/30(36)	3	35 ÷ 400	
	TSLE	NEN 136	7/12 12/24	1 3 x 1	50 ÷ 400 50 ÷ 400	
	AXLJ-LT AXKJ-LT	SS 424 14 16 IEC 60502	7/12 12/24	1 3	50 ÷ 240 50 ÷ 240	
	Cu/XLPE/CWS/PVC Cu/XLPE/CTS/PVC Cu/XLPE/CWS/MDPE Cu/XLPE/CTS/MDPE Al/XLPE/CWS/PVC Al/XLPE/CTS/PVC Al/XLPE/CWS/MDPE Al/XLPE/CTS/MDPE	BS 6622:1999	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24) 19/33(36)	1	50 ÷ 1000	XLPE insulated unarmoured power cable, for power networks: ground, air and ducts.
	Cu/XLPE/CWS/PVC/AWA/PVC Cu/XLPE/CTS/PVC/AWA/PVC Cu/XLPE/CWS/PVC/AWA/MDPE Cu/XLPE/CTS/PVC/AWA /MDPE Al/XLPE/CWS/PVC/AWA/PVC Al/XLPE/CTS/PVC/AWA/PVC Al/XLPE/CWS/PVC/AWA /MDPE Al/XLPE/CTS/PVC/AWA /MDPE	BS 6622:1999	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24) 19/33(36)	1	50÷1000	XLPE insulated armoured power cable for power networks: ground, air and ducts.
	Cu/XLPE/CWS/PVC Cu/XLPE/CTS/PVC Cu/XLPE/CWS/MDPE Cu/XLPE/CTS/MDPE Al/XLPE/CWS/PVC Al/XLPE/CTS/PVC Al/XLPE/CWS/MDPE Al/XLPE/CTS/MDPE	BS 6622:1999	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5)	3	35÷400	XLPE insulated unarmoured power cable (metallic screen collective or individual), for power networks: ground, air and ducts.
	Cu/XLPE/CWS/PVC/SWA/PVC Cu/XLPE/CTS/PVC/SWA/PVC Cu/XLPE/CWS/PVC/SWA/MDPE Cu/XLPE/CTS/PVC/SWA /MDPE Al/XLPE/CWS/PVC/SWA/PVC Al/XLPE/CTS/PVC/SWA/PVC Al/XLPE/CWS/PVC/SWA /MDPE Al/XLPE/CTS/PVC/SWA /MDPE	BS 6622:1999	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24)	3	35÷400	XLPE insulated armoured power cable (metallic screen collective or individual), for power networks: ground, air and ducts.
			19./33(36)		50÷400	
	Cu/XLPE/CWS/MDPE Al/XLPE/CWS/MDPE Cu/XLPE/CWS/LW/MDPE Al/XLPE/CWS/LW/MDPE	BS 7870 – 4.10	6.35/11(12)	1	240÷800 Cu 70÷300 Al.	XLPE insulated power cable and longitudinally sealed power cable for power networks: ground, air and ducts.
			19/33(36)		120÷ 800 Cu and Al	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
SABS MEDIUM VOLTAGE POWER CABLES						
	XLPE/PVC/AWA/PVC type A1	SABS 1339:1992	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24) 19/33(36)	1	50 ÷ 1000	XLPE insulated power cable for power networks: ground, air and ducts.
	XLPE/PVC type A2	SABS 1339:1992	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24) 19/33(36)	1	50 ÷ 1000	
	XLPE/PVC type B	SABS 1339:1992	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24) 19/33(36)	1	50 ÷ 1000	
	XLPE/PVC/SWA/PVC type A	SABS 1339:1992	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24)	3	35 ÷ 300	
			19/33(36)		50÷300	
	XLPE/PVC type B	SABS 1339:1992	3.8/6.6(7.2) 6.35/11(12) 8.7/15(17.5) 12.7/22(24)	3	35 ÷ 300	XLPE insulated power cable for power networks: ground, air and ducts.
			19/33(36)		50÷300	
MEDIUM VOLTAGE PAPER INSULATED POWER CABLES						
	Cu/PILC/JB/DSTA/JS Cu/PILC/JB/DSTA/PVC Al/PILC/JB/DSTA/JS Al/PILC/JB/DSTA/PVC NKRA NAKRA Cu/PILC/JB/SWA/JS Al/PILC/JB/SWA/JS NKFY NAKFY NKRY NAKRY	DIN VDE 0276-621 HD 621 S1:1996 parts 1,2,3C,4C BS 6480:1988 SABS 97:2001 AS1026-1992 CAN/CSA-C68.1-92	3,3/3,3 3,5/6,0 3,8/6,6 5,8/10 6,35/11 6,6/6,6 11/11	3	35÷300	Paper insulated lead sheathed, steel tapes or wires armoured and PVC or fibrous sheathed power cables for power networks, underground, outdoors, indoors and in cable ducts.
	Al/PILC/JB/SWA/JS Cu/PILC/JB/SWA/JS NHKBA NAHKBA Cu/PILC/JB/DSTA/JS Al/PILC/JB/DSTA/JS	HD 621:1996 parts 1,2,3C,4C DIN VDE 0276-621 BS 6480:1988 SABS 97:2001 AS 1026-1992	6,35/11 11,6/20 12,7/22 17,3/30 19,0/33	3	35÷300	Paper insulated lead sheathed, steel tapes or wires armoured and PVC or fibrous sheathed radial field power cables for power networks, underground, outdoors, indoors and in cable ducts.
	NHKY NAHKY	DIN VDE 0255 BS 6480 SABS 97	3,8/6,6 6,35/11 11,6/20 17,3/20 12,7/22 19,0/33	1	50÷500	Paper insulated lead sheathed and PVC sheathed, single core power cables for power networks, underground, outdoors, indoors and in cable ducts.

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
HIGH VOLTAGE POWER CABLES						
	XRUHKXS; XRUHAKXS XUHKXS; XUHAKXS XnRUHKXS; XnRUHAKXS XUHKXS(PB); XUHAKXS(PB)	ZN-BFK-021:1998 POLAND	Above 36kV up to 420 kV	1	150÷2000	Power cables with copper or aluminium conductors, extruded XLPE insulation, longitudinal and radial sealing or lead sheathed with PE (PVC) outer sheath for rated voltage above 36kV up to 420 kV. For supply of electrical energy, laying in ground, ducts, pipes and air, in trefoil or flat formation.
	N2XS(FL)2Y NA2XS(FL)2Y N2XS(F)2Y NA2XS(F)2Y	DIN VDE 0276-632:1999				
	TSLE TXSE	NEK 395:1990				
	AXLJ-LT AXKJ-LT	SS 424 14 17				
	CU/XLPE/CWS/LT/PE AL/XLPE/CWS/LT/PE CU/XLPE/CWS/PE AL/XLPE/CWS/PE CU/XLPE/Lead/PE AL/XLPE/Lead/PE	IEC 60840:1999 AEIC CS7-93 EA TS 09-16:1983				

SHIPBOARD CABLES

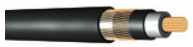
	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
XLPE INSULATED POWER SHIPBOARD CABLES						
	YKOXS	IEC 60092-353 IEC 60332-3-22	600/1000	1 2,4 3 3+1 5÷37	1÷300 1÷50 1÷120 10+6÷50+25 1÷2.5	Power shipboard cables with XLPE insulation and heat resistant, oil resisting and flame-retardant PVC sheath; for fixed installations in all areas and open deck in ships.
	YKOXSek	IEC 60092-353 IEC 60332-3-22	600/1000	1 2,4 3 3+1 5÷37	1÷300 1÷50 1÷120 10+6÷50+25 1÷2.5	Power shipboard cables with XLPE insulation and heat resistant, oil resisting and flame-retardant. PVC sheath and with copper screen under the sheath; for fixed installations in all areas and open deck in ships.
	YKOXSuy	IEC 60092-353 IEC 60332-3-22	600/1000	1 2,4 3 3+1 5÷37	1÷300 1÷50 1÷120 10+6÷50+25 1÷2.5	Power shipboard cables with XLPE insulation and heat resistant, oil resisting and flame-retardant PVC sheath, steel wire armoured; for fixed installations in all areas and open deck in ships.
HALOGEN FREE LOW SMOKE POWER SHIPBOARD CABLES						
	NKOXS	IEC 60092-353 IEC 60332-3-22	600/1000	1 2, 4 3 3+1 5÷37	1÷300 1÷50 1÷120 10+6÷50+25 1÷2.5	For fixed installations on ships and offshore units in all locations below the upper metallic deck. All cable materials are free of halogens. These cables are especially suitable for the installation in passenger ships.
	NKOXSekw	IEC 6092-353 IEC 60332-3-22	600/1000	1 2, 4 3 3+1 5÷37	1÷300 1÷50 1÷120 10+6÷50+25 1÷2.5	For fixed installations on ships and offshore units in all locations and on open decks. All cable materials are free of halogens. These cables are especially suitable for the installation in passenger ships.
	657(*)TQ SW2 657(*)TQ SW4	BS 6883 BS EN 66332-3	600/1000	1 2÷4 5÷37	1÷500 1÷150 1÷2.5	Shipboard power cables with elastomer insulation and sheath. Wiring of ships, oil rigs and other fixed wiring applications where a heat, oil and flame retardant cable is required. Cables with an outer sheath type SW2, heavy duty enhanced oil resisting, flame retardant with reduced halogen gas emission (HCL ≤ 5%). Cables with outer sheath type SW4, ordinary duty enhanced oil-resisting with low emission of smoke and gases wen affected by fire (HCL ≤ 0,5 %).
	658(*)TQ SW2 658(*)TQ SW4	BS 6883 BS EN 66332-3	600/1000	1 2÷4 5÷37	1÷400 1÷150 1÷2.5	Shipboard power cables with elastomer insulation and sheath with wire copper or steel braid. Wiring of ships, oil rigs and other fixed wiring applications where a heat, oil and flame retardant cable is required.
	657 - ZH 658 - ZH	BS 6883 Types (SW2+SW4) 1999	150/250 600/1000	1PR ÷20PR 1c ÷ 37c	0.75÷1.5 1.5÷240	Shipboard rubber cables halogen free flame retardant

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
HALOGEN-FREE LOW SMOKE FIRE RESISTANT POWER SHIPBOARD CABLES						
	FLAME-X 950 NKOGs	IEC 60092-353 IEC 60331-21 IEC 60332-3-22	600/1000	1 2,4 3 5÷37	1÷300 1÷50 1÷120 1÷2.5	Power shipboard cables with special crosslinked silicone compound insulation and halogen-free outer sheath for fixed installation above and below decks on ships. Performance under fire conditions: IEC 60331-21, IEC 60332-3-22 cat. A.
	FLAME-X 950 NKOGsekw	IEC 60092-353 IEC 60331-21 IEC 60332-3-22	600/1000	1 2,4 3 5÷37	1÷300 1÷50 1÷120 1÷2.5	Power shipboard cables with special crosslinked silicone compound insulation and halogen-free outer sheath for fixed installation above and below decks on ships. Performance under fire conditions: IEC 60331-21, IEC 60332-3-22 cat. A.
XLPE INSULATED TELECOMMUNICATION SHIPBOARD CABLES						
	YTKOXSekw	IEC 60092-375 IEC 60332-3-22	250	Pairs 1; 2; 4; 7; 10; 14; 19; 24; 37	0.5÷0.75	For interconnection of sorts of instrumentation and communication equipment including telephone equipment on ships.
HALOGEN-FREE LOW SMOKE TELECOMMUNICATION SHIPBOARD CABLES						
	NTKOXSekw	IEC 600892-375 IEC 60332-3-22	60 250	Pairs 1; 2; 4; 7; 10; 14; 19; 24	0.75 0.75÷1.5	For interconnection of sorts of instrumentation and communication equipment including telephone equipment on ships.
HALOGEN-FREE LOW SMOKE FIRE RESISTANT TELECOMMUNICATION SHIPBOARD CABLES						
	FLAME-X 950 NTKOGsekw	IEC 60092-375 IEC 60331-21 IEC 60332-3-22 IEC 60332-3-23	250	Pairs 1; 2; 4; 7; 10; 14; 19; 24	0.75	For interconnection of sorts of instrumentation and communication equipment including telephone equipment on ships.

CABLES ACCORDING TO UL STANDARDS

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
	UL 1007	UL-Style 1007	300	1	20÷16 AWG	For the internal wiring of switchboards, electrical and electronic equipment, eg. households, radio or televisions and control desks. Connecting wires in machines laid in protective tubes and flexible pipes and also for motors and transformers. UL 1007 – 80°C UL 1569 – 105°C UL 1015 – 105°C
	UL 1569	UL-Style 1569	300		20÷14 AWG	
	UL 1015	UL-Style 1015	600	1	20÷10 AWG	
	THW TW	UL 83	600	1	14÷4/0 AWG 250÷500 kcmil	In conduit or other recognised raceways for feeders and branch circuit wiring, as specified in the National Electrical Code.
	UF, UF-B	UL 83 UL 493	600	2 3	14÷10 AWG 14÷6 AWG	UF and UF-B cables are generally used as feeder to outside post lamps, pumps, and other loads or apparatus fed from a distribution point in a existing building.
	Submersible pump cable (flat and twisted)	UL 83	600	2 3 2	14÷10 AWG (flat) 14÷4 AWG (flat) 14÷2 AWG (twisted)	For use within the well casing supplying power to submersible pumps. The PVC insulation is well suited for use in wet location and is resistant to oils and grease.
	Submersible pump cable	ICEA S-75-381	600	3 + 1	10÷4/0 AWG	For use with both AC and DC powered pumps.
	RHH, RHW-2	UL 44	600	1	14, 10, 8 AWG	This cable is intended for use within the well casing for wiring deep-well water pumps where the cable is not subject to repetitive handling caused by frequent servicing of the pump units. It can be used at temperatures up to 90°C in wet or dry locations.
	XHHW-2	UL 44	600	1	14÷4/0 AWG	General purpose wiring in air, conduit or other recognized raceway. Maximum operating temperature of 90°C in dry or wet locations.
	TC Tray Cables FR-XLPE/PVC	UL 1277	600	3÷4 2÷37	8AWG ÷500MCM 16÷10 AWG	For industrial power circuits where low-loss, highly flame-retardant cables are desired. These cables are physically tough with excellent resistance to moisture and corrosion. Cables may be installed in air, in ducts or conduits, in tray or trough, and are suitable for direct burial.
	TC Tray Cables FR-EP/CPE	UL 1277	600	3 2÷37	8AWG ÷300MCM 14÷10 AWG	

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
CABLES ACCORDING TO UL STANDARDS						
	Telephone Central Office Power Cable EPR/CPE Low smoke	UL 44	600	1	6÷4/0 AWG 250÷750 MCM	For use in telephone central office applications, gateways, fiber optic amplifiers, wireless towers, data centers, battery back-ups, back-up generators, UPS systems and similar equipment.
	Telephone Central Office Power Cable EPR/CPE Low smoke	UL 44	2000	1	6÷4/0 AWG 250÷1000 MCM	
	SPT-1 SPT-2 SPT-3	UL 62	300	2÷3 2÷3 2÷3	18 AWG 18÷16 AWG 18÷10 AWG	For use in household appliances, including clocks, fans, and radios as well as lamps.
	SJTW SJT	UL 62	300	2÷5	18÷10 AWG	Flexible cords for portable tools, motors, portable lights, lamps.
	ST, STW	UL 62	600	2÷5	18÷2 AWG	
	SO, SOW	UL 62 CSA-C. 22 No49-M92	600	2÷60 2÷5	18÷10 AWG 8÷2 AWG	Portable tools and equipment, portable appliances, motors and associated machinery.
	SO	non-UL ICEA S-68-516	600	2;3;4;5	8-2 AWG	
	SEOOW	UL 62	600	2÷60 2÷5	18÷10 AWG 8÷2 AWG	
	SJ, SJO, SJOW, SJOOW	UL 62	300	2÷5	18÷10 AWG	
	SJOW BREATHER CABLE	UL 62	300	6, 8	14 AWG	SJOW cord with the Nylon breather tube in the centre. Intended for lift station pumps.
	SOOW	UL 62 CSA-C. 22 No49-M92	600	2÷60 2÷5	18÷10 AWG 18÷2 AWG	Portable tools and equipment, portable appliances, motors and associated machinery.
	SOOW	non UL UL 1581	600	2÷5	8÷2 AWG	
	Type SC Stage & Lighting Cable 105°C–35°C	UL Subject 1680	600	1	6÷4/0 AWG	Portable power and lighting applications in the entertainment industry including motion picture, television, theatres, stage and similar locations. Excellent flexibility, resistance to oil, solvents, ozone, ageing and abrasion. Suitable for continuous submersion in water.
	Welding cable	ICEA S-75-381 UL 1581 CSA C.22.2	600	1	8 AWG ÷ 1111MCM	Designed for use as welding leads from the secondary side of the power source typical of arc welders and welding generators.

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
CABLES ACCORDING TO UL STANDARDS						
	DLO RHW RHW-2 RHW-2/LS RHW-2/USE2	AAR spec.591 ICEA S-75-381 UL 1581 UL 44 UL 854	2000	1	14÷1111 MCM	Diesel Locomotive Cable is an excellent choice as a portable power cable for drilling rigs, on-shore or offshore, diesel-electric locomotives, railroad and transit car wiring. It is also recommended for electric earth-moving equipment, in shipyard applications, arc welder supply leads, power and control jumper cable, case wire and motor leads.
	Type W	CSA-C22.2-96-03 UL 44 ICEA S-75-381 WC 58	2000	1, 2, 3	8AWG÷ 500 MCM	For use in heavy duty service as power supply cable, AC systems, mobile and portable electrical equipment, mining equipment and motor and battery leads.
				4	8 AWG÷ 350 MCM	
				5	8÷4/0 AWG	
				6	8÷1AWG	
	Type W Flat	ICEA S-75-381 WC 58	2000	2÷4	6÷4/0 AWG	For use in heavy duty service as power supply AC systems mobile and portable electrical equipment.
	Type G	CSA-C22.2-96-03 ICEA S-75-381 WC 58	2000	2÷3	8AWG ÷500MCM	For use in mining machines, locomotives, power supply lead on AC welders, motor and generator leads and grounding cable.
				4	8AWG ÷350MCM	
				5	6÷1 AWG	
	Type G Flat	ICEA S-75-381 WC 58		2	6÷4/0 AWG	
	G-GC	CSA-C22.2-96-03 ICEA S-75-381 WC 58	2000	3	8AWG ÷500 MCM	For use with portable electric equipment, AC mining machines, loaders, drill, cutting machines, and other portable and mobile equipment where self-containing grounding conductor as well as continuous ground monitoring conductor is required.
	G-GC Flat	ICEA S-75-381 WC 58		3	6÷4/0 AWG	
	SHD-GC	ICEA S-7538/WC58 CSA-C22.2-96-03	up to 2 kV	3 phase conductors, earth, 1 control earth core	10 AWG ÷400 MCM	Mining multi-core cables with earth core for flexible mining supply.
			up to 5 kV		6 AWG ÷350 MCM	
			up to 8 kV		4 AWG ÷250 MCM	
			up to 15 kV		2 AWG ÷3/0 AWG	
			up to 25 kV		1 AWG	
	JUMPER CABLE	ICEA S-75-381 WC 58	5/15 kV	1	2AWG ÷500 MCM	Portable cable for use as a flexible power lead for temporary connections.
	MV-90 MV-105	UL 1072	15 kV 5 kV/8 kV	1	6AWG ÷100MCM	For distribution circuits and for feeders or branch circuits.
	URD (XLPE)	NEMA WC 7 ICEA S-66-524 AEIC CS8	5 up to 15 kV	1 or Triplex	2AWG ÷ 1000 MCM	Medium voltage suitable for Primary Underground Distribution System; buried directly or installed in underground ducts or conduits or exposed to sunlight for above ground application. Rated for continuous operation at 90°C conductor temperature.
			25 up to 35 kV		1/0 AWG ÷ 1000 MCM	

MINING CABLES

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
	Type 41	SANS 1520 Part 1	0,64/1,1 kV	3 + 1	4÷16	Flexible electric trailing cables for use in mines for underground mining.
	Type 61 A			3 + 3	3x25+3x10 ÷3x95+3x16	
	Type 61 B			3 + 3	3x70+3x10 ÷3x95+3x16	
	Type 63		1,9/3,3 kV		3x25+3x10 ÷3x150+3x25	
	Type 66	SANS 1520 Part 2	3,8/6,6 kV	3 + 3	3x25+3x10 ÷3x95+3x16	Flexible electric trailing cables for use in mines for underground mining.
	Type 611		6,35/11 kV	3 + 3	3x25+3x10 ÷3x95+3x16	
	Type 66 ECC		3,8/6,6 kV	3 + 3	3x25+2x10+1x16 ÷3x95+2x16+1x50	
	Type 241.1	AS/NZS 1802:1995	1,1/1,1 kV	3 + 3 + 3	6÷120+1÷14+2.5	Mining cable for use in underground coalmines.
	Type 7	BS 6708:1998	640/ 1100V	3 + 3 + 1	16÷120+16÷50 +16÷70	
	Type 2S	AS/NZS-1972: 2002	600/1000	2, 7, 16, 18, 30 4 6 3	1.5 1.5; 16 1.5; 4; 10 10÷95	Flexible electric rubber insulated cables for use particularly in underground mines.
	Mining Cables Type 1 PVC Insulated & Covered Collectively Screened	AS/NZS 1972	600/1000	2 to 16	1.5 & 16	For wiring mobile equipment & Wiring interconnection of mining equipment
	Mining Cables Type 275	AS/NZS 1802	1100/1100	3 + 3 + 1	16÷50	Shuttle Car Cable

BARE AND INSULATED OVERHEAD CONDUCTORS

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
PVC COVERED OVERHEAD CONDUCTORS						
	PVC-covered stranded hard drawn copper conductors Type 8, Type 16	BS 6485: 1999	650	1	14÷100	PVC-covered conductors for overhead transmission lines. Also suitable for other purposes, but they should be used only in appropriate situations and with due regard to any relevant safety regulations. Type 8 is suitable for: 1400 crossing of telecommunication lines to guard against contact; 1400 proximities to telecommunication lines to guard against contact; 1400 lines (particularly service lines) accessible from buildings. Type 16 is suitable for crossings of telecommunication lines and proximities to them.
	PVC-covered aluminium stranded conductors Type 8	BS 6485: 1999	650	1	22÷200	
	PVC-covered aluminium conductors, steel reinforced Type 16	BS 6485: 1999	650	1	25÷200	
XLPE COVERED OVERHEAD CONDUCTORS						
	BLX	SS 424 14 63	24 kV	1	50÷185	Overhead single core cables with aluminium alloy conductor and XLPE insulation, for overhead power transmission lines up to 24 kV.
	PAS	ZN-96/MD-13-K1 204 SFS 5791	24 kV	1	50÷150	Overhead single core cables with aluminium alloy conductor and XLPE insulation, for overhead power transmission lines up to 24 kV.
AERIAL BUNDLED CONDUCTORS						
	EX	NEN 73.77	600/1000	2÷4	25÷95	Overhead selfsupporting cables with aluminium conductors and thermoplastic polyethylene insulation, for overhead power transmission lines 220/380 V.
	ABC AXKA	BS 7870-5: 1999 HD 626 S1: 1996 I A2: 2002 Part 6- sec. D	600/1000	2÷4	25÷120	Overhead selfsupporting cables with aluminium conductors and XLPE insulation, for overhead power transmission lines 220/380 V.
	XOO-A XOO/O-A	JUS N.C5.250	600/1000	2÷6	16÷120	Overhead selfsupporting cables with aluminium phases conductors and aluminium alloy neutral conductor, XLPE insulation, for overhead power transmission lines 220/380 V.
	AMKA	SFS 2200	600/1000	2÷5	16÷120	Overhead selfsupporting cables with aluminium phases conductors and aluminium alloy neutral conductor, thermoplastic polyethylene insulation, for overhead power transmission lines 220/380 V.
	NFA2X	DIN VDE 0276-626/A1 HD 621 S1 Part 1,2,4F-1 AS/NZS 5000,1:2003	600/1000	1,4 4+1 4+2	25÷70 70+35 70+35	XLPE insulated aluminium conductors for overhead transmission lines.
	1-AES AsXS AsXSn	HD 6261.S1: 1996/ A1:1997 (CSIV 34 7614-1) WT-92/K-396 ZN-94/MP-13-K2 108	600/1000	1 2 4 4+1 4+2	25÷70 16+35 16+120 35÷120 +25÷35 50÷120 +25÷35	XLPE insulated aluminium conductors for overhead transmission lines.

	Designation	Standard	Dimensions [mm]	Delivery	Application
COPPER AND COPPER ALLOY GROOVED CONTACT WIRES					
	Round contact wires	DIN 43141/2-Ru GOST 2584	30÷100	Wooden drums 1400 kg	For overhead networks
	Grooved contact wire	EN 50149 DIN 43141/1-Ri DIN 43141/1-RiS BS 23 ASTM B-47 UIC 870 GOST 2584	80÷150	Wooden drums 1400 or 2000 kg	For overhead networks
BARE CONDUCTORS FOR OVERHEAD POWER TRANSMISSION					
	Copper stranded conductors	DIN 48201/1 BS 7884 GOST 839 ASTM B-8	10÷500	Wooden drums	Copper stranded conductor for overhead power transmission.
	AAC	EN 50182 DIN 48201/5 BS 215/1 GOST 839 IEC 61089 ASTM B-231	10÷1000	Wooden drums	All aluminium conductor for overhead power transmission.
	AAAC AAL	EN 50182 DIN 48201/6 IEC 61089 ASTM B-399 ZN-KFK-021:2000	16÷1000	Wooden drums	All aluminium alloy conductor for overhead power transmission.
	ACSR AFL	EN 50182 DIN 48204 BS 215/2 IEC 61089 GOST 839 ASTM B-232 ZN-96/MP-13-K12 208.02	16÷1100	Wooden drums	Aluminium conductors steel-reinforced for overhead power transmission.
	AACSR	EN 50182 DIN 48206	16÷1100	Wooden drums	Aluminium alloy conductors steel-reinforced for overhead power transmission.

BARE WIRES AND CONDUCTORS

	Designation	Standard	Dimensions [mm]	Delivery	Application
PLAIN AND TINNED COPPER WIRES					
	Round copper wires (soft and hard)	EN 13602 DIN 40500/4 BS 4109 NFC 31-111 NFC 31-112 ASTM B-3	0,6÷4,5	Reels acc. to DIN 46397 Coils 90÷120 kg drums 500 kg coils 3500 kg on wooden pallets	For cables production and further drawing
			Over 5,7	Wooden drums 2000 kg	
	Round tinned copper wires	EN 13602 DIN 40500/5 BS 4109 ASTM B-33	0,3÷3,6	Metal returnable reels A 630 mm 450 kg plastic reels carton basket	To further drawing for cables production
	Rectangular copper wires (soft and hard)	DIN 46433 BS 1432	Thickness 1,0÷6,0 mm width max 20 mm	Coils Wooden drums Steel drums	For winding wires and further drawing
PLAIN AND TINNED COPPER CONDUCTORS					
	Flexible copper bunched conductors, plain or tinned	EN 60228 DIN VDE 0295 BS 6360 IEC 60228 ASTM B-8 ASTM B-172	0,5÷630	Wooden drums	For cables and cords
	Round and shaped copper conductors for power cables	EN 60228 DIN VDE 0295 BS 6360 IEC 60228 ASTM B-8	0,5÷1000 Multiwire sector shaped for 25 mm and above	Wooden drums	For power cables

AUTOMOTIVE WIRES

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
VEHICLE CABLES						
	FLRY – A	DIN 72 551		1	0.35÷2,5	PVC insulated single core cables for use in car harnesses.
	FLRY – B			1	0.35÷6	
	FLY FLYW FLYK	DIN ISO 6722		1	0.5÷120	
	FL2G	DIN ISO 6722		1	0.5÷50	
	CU-P	FIAT 91107	300	1	0.35÷120	
	CU-PR	FIAT 91107/03	300	1	0.5÷70	
	AV	JIS C 3406 JASO D611-94		1	8, 15 i 20	
	AVS				0,3÷2	
	AVSS				0,5÷5	
	48 AU	NF R 13-414	48	1	0.5÷95	
	Vehicle cable	BS 6862	100	1	0.5÷60	
IGNITION CABLES						
	FZLY	DIN ISO 3808 Class A		1 1	5 mm 7 mm	PVC insulated ignition cable for vehicle constructions. Class A (-20°C / + 105°C)
	FZL2G	DIN ISO 3808 Class F		1 1	5 mm 7 mm	Silicone rubber insulated ignition cable for vehicle constructions. Class F (-40°C / + 250°C)
	FZL2GF2G FZL2G2G	DIN ISO 3808 Class F		1	7 mm	Ignition cable for vehicle silicone rubber insulated and sheathed, tinned copper conductor, with or without reinforcement of glass silk. Used for vehicle constructions. Class F (-40°C / + 250°C)
	FZLW2GF2G FZLW2G2G	DIN ISO 3808 Class F		1 1	7 mm 8 mm	Ignition cable for vehicle silicone rubber insulated and sheathed resistive core with or without reinforcement of glass silk. Used for vehicle constructions. Class F (-40°C / + 250°C)

WINDING WIRES

	Designation	Standard	Dimensions [mm]	Delivery	Application
	Double glass yarn covered, varnish bonded with polyester enamel (155°C) or polyesterimide (180°C) round winding copper wires	Acc. to agreement between manufacturer and purchaser	1,12÷5,0	Reels type 250 Reels type 355	Electric windings for electrical equipment
	Double glass yarn covered, varnish bonded with polyester enamel (155°C) rectangular winding copper wires	Acc. to agreement between manufacturer and purchaser	Width: 3,15÷12,5 thickness: 1,20÷5,6	Reels type 355 Reels type 500	Electric windings for electrical equipment
	Enamelled and glass yarn covered, varnish bonded with polyester (155°C) or polyesterimide (180°C) round winding cooper wires	Acc. to agreement between manufacturer and purchaser	1,4÷3,0	Reels type 250 or 355	

TV, SAT AND AUDIO CABLES

	Designation	Standard	Nominal voltage [V]	Number of cores	Cross sections [mm²]	Application
COAXIAL CABLES						
	RG 6/U		75	67	12.7	
	RG 8A/U	MIL-C-17	50	97	9.4	
	RG 11U		75	57	7.3	
	RG 11A/U	MIL-C-17	75	67	10.2	
	RG 58/U	JAN-C-17	53.5	94	18.4	
	RG 58C/U	MIL-C-17	50	101	21.8	
	RG 59B/U	MIL-C-17	75	67	15.8	
	RG 59B/U		75	54	16.3	
	RG 213/U	MIL-C-17	50	101	9.4	
	SAT1 – 1.65/7.0	ZN-94/FKZ-005	75	55	5.2	Coaxial cables with foamed polyethylene insulation and with aluminium foil and braiding, for satellite-receivers.
	SAT4 – 1.15/5.0	WT-91/K-371	75	59	7.8	
	SAT5 – 1.0/4.8	WT-91/K-371	75	54	9.5	
	Semi air-spaced TV coaxial cable 1,0/4,5	Refer to individual product descriptions WT-91/K-374	75	56	9.0	Semi air-spaced, low loss TV coaxial cable with cellular polyethylene insulation and copper wire braided screening.
SPEAKER CABLES						
	Speaker cables	Refer to individual product descriptions	300	2	0.5÷4.0	Speaker cables flexible bare copper strands. Core identification: 1 core smooth, 1 core corrugated or single transparent jacket with colour stripe.

ENAMELLED COPPER WIRES						
Description	Insulating Enamel		Temperature index acc. to IEC	Standards*	Production range [mm]	
	Base enamel	Overcoat			Grade 1,2**	
E 120	Modified Polyvinylacetal	-	120	IEC 317 - 1 IEC 317 - 12 NEMA MW 15 - C	0.70÷4.50	Very good mechanical properties. Motors and windings of thermal class E. Oil immersed transformers. Winding subject to mechanical stresses.
FL 155	Modified Polyurethane		155	IEC 317 - 20 NEMA MW 79 – C ZALOM 155 SC UL No: E 129934	0.02÷2.00	Very good solderability and high thermal properties. Used in small transformers, relays, solenoids, small motors, clock coils, instruments.
FLN 155	Modified Polyurethane	Polyamide	155	IEC 317 - 21 NEMA MW 80 - C ZALOM 155 NSC UL No: E 129934	0.03÷2.00	Very good solderability and very good windability. Suitable for use with the automatic high-speed winding machines.
HL 180	Modified Polyurethane	-	180	IEC 317 - 51 NEMA MW 79 - C	0.02÷1.60	Good solderability and improved thermal properties. Used for automotive coils as relays and ignition coils, in transformers and in solenoids.
HLN 180	Modified Polyurethane	Polyamide	180	IEC 317 - 51 NEMA MW 80 – C ZALOM 180 NAP UL No: E 129934	0.03÷1.60	Good solderability, elevated thermal properties, and very good windability. Suitable for use with the automatic high speed winding machines.
H 180	Polyesterimide THEIC modified	-	180	IEC 317 - 8 NEMAMW74-C;30-C; ZALOM 180 HB UL No: E 129934	0.05÷2,00	High thermal properties and good chemical resistance. Used for the motors for household appliances, hermetic motors, dry and oil filled transformers.
CX 200 C 200	Modified Polyester or Polyesterimide	Amideimide	200	IEC 317 – 13 NEMA MW 35 – C ZALOM 200 DP UL No: E 129934	0.15÷4.00*	Very high thermal properties and high mechanical and chemical resistance.Used in motors and transformers,ballasts and hermetic motors. *Larger diameters are available when agreed.
C 220	Polyamideimide	-	220	IEC 317 - 26 NEMA MW 81 - C	0.15÷3.00	Extraordinary thermal, mechanical and chemical resistance. Used in special motors, special relays, special transformers.
FLS 155	Polyurethane	Polyamide	155	IEC 317 - 35 NEMA MW 29 - C	0.03÷0.08 0.15÷1.40	Solderable, self bonded windings requiring no further impregnation. Used for self supporting coils.
HLS 155	Polyurethane	Polyamide	180	IEC 317-35	0.03÷0.08 0.15÷1.40	Solderable, self bonded windings requiring no further impregnation. Used in TV deflection coils.
HXS 180	Polyesterimide	Polyamide	180	IEC 317 - 37	0.15÷0.80	Self-bonded windings requiring no further impregnation, used for self-supporting coils.
CXS 200	Polyesterimide + Polyamideimide	Polyamide aliphatic	200	IEC 317 – 38 MW 102-C	0.15÷0.80	Heat resistant, heat bonding wire, consisting of a double coat base varnish and self bonded overcoat. Used in TV deflection coils.

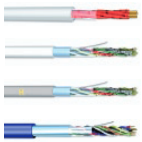
*DIN EN 60 317..and BS EN 60 317...standards are equivalent to IEC 317.

** Grade 3 is available in the range 0,15-2,00 mm

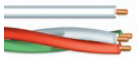
TELEPHONE, FIBRE OPTIC, DATA AND COMPUTER CABLES

	Symbol	Standard	No of elements	Φ of wire	Application
TELECOMMUNICATION LOCAL UNIT CABLES PE INSULATED AND SHEATHED					
	XzTKMXw	PN-92/T-90335 PN-92T-90336 ZN-96/TPSA-029	5-500x4	0,4 0,5	Cables are designed for local telecommunication networks, for connections between exchanges and telephone subscribers, for connections between telephone exchanges for telephone installation in industrial plants. Non-armoured cables are designed for installation in ducts in an environment, where mechanical stresses are unlikely to occur. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXpw	PN-92/T-90335 PN-92/T-90336 ZN-96/TPSA-029	5-1000x4 5-5000x4 5-5000x4 5-2500x4	0,4 0,5 0,6 0,8	Cables are designed for local telecommunication network, for connections between exchanges and telephone subscribers, for connections between telephone exchanges and for telephone installation in industrial plants. Non-armoured cables are designed for installation in ducts in an environment, where mechanical stresses are unlikely to occur. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXwFtlx XzTKMXwFtly	PN-92/T-90335 PN-92/T-90336 ZN-96/TPSA-029	10-500x4 10-500x4	0,4 0,5	Cables armoured with steel tapes are designed for ducts or direct burial in areas of high-risk mechanical damages. Range of installation temperature: not lower than –10°C and not higher than +50°C in PE sheath, not lower than –5°C and not higher than +50°C in PVC sheath. Permissible bending radius >10 x outer diameter.
	XzTKMXpwFtlx XzTKMXpwFtly		5-500x4 5-500x4 5-500x4 5-250x4	0,4 0,5 0,6 0,8	
	XzTKMXwFfx XzTKMXpwFfx	ZN-EK-018 ZN-EK-019	10-1000x4 10-500x4 10-500x4 10-500x4 5-500x4	0,4 0,5 0,5 0,6 0,8	Cables are designed for ducts or direct burial in areas of high-risk rodents attacks. Range of installation temperature: not lower than –10°C and not higher than +50°C , Permissible bending radius >10 x outer diameter.
	XzTKMXwFox XzTKMXwFoy	PN-92/T-90335 PN-92T-90336 ZN-96/TPSA-029	5-500x4 5-500x4	0,4 0,5 0,4	Cables armoured with steel tapes are designed for ducts or direct burial in areas of high-risk mechanical damages (mining areas, river crossing, bridges or viaducts). Permissible bending radius >15 x outer diameter.
	XzTKMXpwFox XzTKMXpwFoy		5-500x4 5-500x4 5-200x4	0,5 0,6 0,8	
	XzTKMXwn	PN-92/T-90335 PN-92/T-90337 ZN-96/TPSA-029	5-50x4 5-50x4	0,4 0,5	Cables with a supporting wire (8 shaped, self-supporting) are designed for suspention on concrete or wooden supports. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXpwn		5-50x4 5-50x4 5-50x4 5-50x4	0,4 0,5 0,6 0,8	
	CW 1128	CW 1128	2-100x2 2-100x2 2-100x2 2-100x2 2-100x2	0,4 0,5 0,6 0,63 0,9	Cables are designed for location telecommunication networks, for connections between exchanges and telephone subscribers, for connections between telephone exchanges and for telephone installation in industrial plants. Non-armoured cables are designed for installation in ducts in an environment, where mechanical stresses are unlikely to occur. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10x outer diameter.

	Symbol	Standard	No of elements	Φ of wire	Application
TELECOMMUNICATION LOCAL UNIT CABLES PE INSULATED AND SHEATHED					
	TPP	BDS 9096	6-1000x2 6-700x2 6-500x2	0,4 0,5 0,6 0,7	Cables are designed for local telecommunication network, for connections between exchanges and telephone subscribers, for connections between telephone exchanges for local railway connections and for telephone installation in industrial plants. Non-armoured cables are designed for installation in ducts in an environment, where mechanical stresses are unlikely to occur. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
TELECOMMUNICATION OUTDOOR CABLES MANUFACTURED ACC. TO VDE					
	A-2YF(L)2Y..Bd	VDE 0816	2-1200x2 2-700x2 2-400x2	0,4 0,6 0,8	Cables are suitable for telecommunication devices. Filled cables designed for local telecommunication network, for connections between exchange and telephone subscribers, for connections between telephone exchanges, for local railway connections and for telephone installation in industrial plants. Non-armoured cables are designed for installation in ducts in an environment, where mechanical stresses are not likely to occur. Range of temperature: Installation: should be not lower than –10°C and not higher than +50°C. Permissible bending radius >10x outer diameter.
	A-2Y(L)2Y..Bd		2-1500x2 2-1000x2 2-600x2	0,4 0,6 0,8	
	A-02Y(L)2Y..Bd		2-1000x2 2-400x2	0,6 0,8	
TELECOMMUNICATION LOCAL CABLES					
	XTKMXw XTKMXpw	WT-95/K-458/00 WT-95/K-458/01	1-9x2	0,5 0,5 0,6 0,8	Cables are designed for ducts or direct burial in areas of low risk damages. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXw XzTKMXpw	WT-95/K-458/00 WT-95/K-458/02	1-9x2	0,5 0,5 0,6 0,8	Cables are designed for ducts or direct burial in areas of low risk damages. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXwn XzTKMXpwn	WT-95/K-458/00 WT-95/K-458/03	1-9x2	0,5 0,6 0,8	Cables are designed for suspending on concrete or wooden supports. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	XzTKMXwn XzTKMXpwn	WT-95/K-458/00 WT-95/K-458/04	1-9x2	0,5 0,6 0,8	Cables are designed for suspending on concrete or wooden supports. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10x outer diameter.
	TKMXn	WT-93/K-423	1x2	0,6 0,8 0,9 1,2	Permissible bending radius >10x outer diameter.

	Symbol	Standard	No of elements	Φ of wire	Application
TELECOMMUNICATION LOCAL CABLES					
	NTKMXPtN NTKMXpPtN	ZN-FKO-221	10,25,50, 100x4	0,8	Cables are designed for connections between telephone, and control devices. Cables are intended for areas where fire hazard are high and are manufactured according to detailed user's regulations. Cabled are installed with flame retardant inner and outer sheaths with low emission of smoke or toxic and corrosive fumes. Range of installation temperature: not lower than –10°C and not higher than +50°C. Permissible bending radius >10 x outer diameter.
	TKSY YTKSY YnTKSY	PN-92/T-90320 PN-92/T-90321	1x2-53x2	0,4(c) 0,5(c) 0,8(c)	Local cables are intended for connections between telephone devices, operation in moderate climate. Range of temperature: Operating: from –40°C to +70°C, Installation: from –15°C to +50°C, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.
	TCB (A) B	BDS 11507	1-52x2 1-52x2 5-35x3 5-35x3	0,4 0,5 0,4 0,5	Cables are designed for connections between telephone devices operating in moderate climate. Range of temperature: Operating: from –40°C to +70°C, Installation: from –15°C to +50°C, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.
	MULTIT 5 up to 15kV	EATS 09.6 Issue 6 Section 3	4PR - 7PR 19PR - 37PR 61PR	0,8	Cables are designed for connections between telephones, telegraph transmission and data processing devices operating in moderate climate. Range of temperature: Operating: from –40°C to +70°C, Installation: from –15°C to +50°C, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.
TELECOMMUNICATION INDOOR CABLES MANUFACTURED ACC. TO VDE					
	J-YY...Bd J-Y(St)Y...Bd J-H(St)H...Bd JE-Y(St)Y...Bd	DIN VDE 0815	2-100x2 (2,4,6,10, 16,20,30, 40,50,60, 80,100)	0,6	Cables are designed for telecommunication electronic devices. Cable can be manufactured in halogen-free sheath or insulation. Cables are suitable for installation in dry or dump premises, on or under plaster. Cables are designed for fixed installation. Cables are not suitable for power installation and cannot be buried directly in the ground. Range of temperature: In case of fixed installation: from –30°C to +70°C.
	J-Y(St)Y...Lg	DIN VDE 0815	2-100x2 (2,4,6,10, 16,20,30, 40,50,60, 80,100)	0,6 0,8	Cables are designed for telephone devices. Cables with anti-electrostatic screen (ST) protect signal circuit from electromagnetic disturbances. Wires stranded in pairs eliminate influence of parallel circuit. Cables can be manufactured in halogen free insulation or sheath. Cables are suitable for installation in dry or dump premises, on or under plaster. Cables are designed for fixed installation. Cable are not suitable for power installation and cannot be buried directly in the ground or nailed to the wall. Range of temperature: In case of fixed installation: from –30°C to +70°C.

	Symbol	Standard	No of elements	Φ of wire	Application
TELECOMMUNICATIONS LOW FREQUENCY INDOOR CABLES					
	**YTKSYekw** **YnTKSYekw** **YTKSYlekw**	PN-92/T-90320 PN-92/T-90321	1-53x2	0,4 (c) 0,5 (c) 0,8 (c)	Local cables are intended for connections between telephone, telegraph transmission and data processing devices operations in moderate climate. Range of temperature: Operating: from –40ºC to +70ºC, Installation: from –15ºC to +50ºC, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.
TELECOMMUNICATIONS LOW FREQUENCY INDOOR CABLES, SCREENED PAIRS					
	**YTKSYekp**	PN-92/T-90320 PN-92/T-90323	2,6,7,10, 12,20,21x2	0,5(c)	Local cables are intended for connections between telephone, telegraph transmission and data processing devices operations in moderate climate. Range of temperature: Operating: from –40ºC to +70ºC, Installation: from –15ºC to +50ºC, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.
TELECOMMUNICATIONS LOW FREQUENCY INDOOR CABLES UP TO 2 Mbit/s					
	**YTKSXpekp** **YnTKSXpekp**	ZN-EK-015	1,2,3,4,5, 7,8,10x2	0,5(c)	Cables are designed for connections between transmission devices of analog signals up 552 kHz or digital signals up 2 Mbit/s. Range of operating temperature: from –10ºC to +50ºC in case of mechanical hazard such as bending or vibration, from –40ºC to +70ºC when there is no mechanical hazard. Relative humidity up to 90%.
	**YTKSXpekp** **YTKSXekp** **YnTKSXekp** **YnTKSXpekp** **Y-YTKSXekp** **Yn-YTKSXekp** **Y-YTKSXpekp** **Yn-YTKSXpekp**	ZN-EK-015	1x2x0,4(c) 8x(1x2x0,4 (c)	0,4(c)	Telecommunication high frequency, screened pairs, PE insulated, PVC sheathed and/or PVC common sheathed cables designed for fixed wiring in telecommunication, electronic, measuring and computer installation used for transmission up to 1 MHz. Range of operating temperature: from –10ºC to +50ºC in case of mechanical damages hazard, from –40ºC to +85ºC in case of lack of mechanical hazard. Permissible bending radius >10 x outer diameter.
	**YTKSXpekteko** **NTKSXpekteko**	ZN-EK-021	2,4,8,12x4	0,6(c)	Telecommunication high frequency, screened pairs, PE insulated, PVC sheathed and/or PVC common sheathed cables designed for fixed wiring in telecommunication, electronic, measuring and computer installation used for transmission up to 1 MHz. Range of operating temperature: from –10ºC to +50ºC in case of mechanical damages hazard, from –40ºC to +85ºC in case of lack of mechanical hazard. Permissible bending radius >10 x outer diameter.
TELECOMMUNICATIONS LOW FREQUENCY INDOOR CABLES IN FLAME RETARDANT SHEATH					
	**NTKSXekw** **NzTKX** **YnTKSXekw**	WT-98/K-399	7,14,19,21, 42,48x2	0,8	Cables are designed for connections between telephone, telegraph transmission, data processing and control devices. Cables are intended for areas where fire hazard are high and are installed according to detailed user's regulations. Cables are installed with flame retardant outer sheath with low emission of smoke or toxic and corrosive fumes. Range of temperature: operating should be lower than –10ºC but not higher than +50ºC, Permissible bending radius >10 x outer diameter.
DATA TELECOMMUNICATIONS LOW FREQUENCY TERMINATING CABLES					
	**YTKZYekw**	PN-92/T-90320 PN-92/T-90322	5-50x4	0,5	Cables are designed for terminating local cables in switchboard station operating in moderate climate. Range of temperature: Operating: from –40ºC to +70ºC, Installation: from –15ºC to +50ºC, Relative humidity up to 90%. Permissible bending radius >10 x outer diameter.

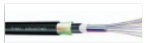
	Symbol	Standard	No of elements	Φ of wire	Application
BUILDING CORDS					
	TDY	PN-91/T-90200 PN-91/T-90206	1x1, 1x2, 1x3, 1x4	0,4 (c) 0,5 (c) 0,6 (c) 0,8 (c) 1,0 (c)	Cords are designed for fixed installation in telecommunication and electronic devices operating in moderate climate. Range of temperature: Operating: from –40°C to +70°C Installation: from –15°C to +50°C Relative humidity up to 100%. Cords may operate with rated voltage not exceeding mean value of: 150V – in case of the smallest insulation thickness of 0.12 mm 300V – in case of the smallest insulation thickness of 0.15 mm Cords used in special equipment should be resistant to winding in low temperature –40+20C
	TDX	PN-91/T-90200 PN-91/T-90205	1x1, 1x2, 1x3, 1x4	0,4 0,5 0,6 0,8 1,0	
TELECOMMUNICATION BUILDING CORDS FOR WRAPPED CONNECTIONS					
	TDYo	ZN-EK-016	1 1x2 1x3	0,4 c 0,5 c 0,8 c 0,9 c	Cords are designed for fixed installation in telecommunication devices. Range of temperature: Operating: from –40°C to +70°C Installation: from -5°C to +50°C Relative humidity up to 100%.
TELECOMMUNICATION BUILDING CORDS					
	Y	DIN/VDE-0815	1-7x1	0,6 0,8	Cords are designed for telecommunication and data processing devices. Cables are suitable for installation in dry or dump premises, on or under plaster. In open air cables are designed for fixed installation. Cables are not suitable for power installation and cannot be buried directly in the ground. Range of temperature: In case of fixed installation: from –30°C to +70°C In case of movable installation: from -5°C to +50°C
	J-FY		1x2, 1x3	0,6	
BROADCASTING CORDS					
	RPX YRPX YnRPX	ZN-95IMD-13-K 12196	1x2 1x2 1x4 1x4	0,9 1,2 1,2 0,9	Cords are designed for internal broadcasting installation, inside building as well for under ground installations. Range of temperature: Installation: not lower than 0°C in case of PVC sheathed cords or –20°C in case of other cords.
DATA COMMUNICATION CABLES					
	UTP Cat. 5, 5e	ZN-TF-01:2001 ISO/IEC-11801 2nd edition:2002 IEC 61156-5:2002 EN 50173-1:2002 ANSI/TIA/EIA-568-B.2	4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5) as well 125 MHz (cat. 5e). UTP cable is intended for use in computer data processing systems, measurement systems, automation and control systems, with high resistance of these systems against electromagnetic interference. For high frequency analogue signals transmission in automation and industrial TV network. Cable is intended to be used for horizontal and vertical installations within data communication networks.
	UTP DUAL Cat. 5, 5e	ZN-TF-01:2001 ISO/IEC-11801 2nd edition:2002 IEC 61156-5:2002 EN 50173-1:2002 ANSI/TIA/EIA-568-B.2	2x4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5) as well 125 MHz (cat. 5e). UTP –dual cable is intended for use in computer data processing systems, measurement systems, automation and control systems, with high resistance of these systems against electromagnetic interference. For high frequency analogue signals transmission in automation and industrial TV network. Cable is intended to be used for horizontal and vertical installations within data communication networks.
	FTP S-FTP Cat. 5, 5e	ZN-TF-01:2001 ISO/IEC-11801 2nd edition:2002 IEC 61156-5:2002 EN 50173-1:2002 ANSI/TIA/EIA-568-B.2	4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5) as well 125 MHz (cat. 5e). Cables are intended for use in computer data processing systems, measurement systems, automation and control systems and for high frequency analogue signals transmission in automation and industrial TV network. The cable is intended to be used for horizontal and vertical installations within data communication networks. This cable features high resistance against electromagnetic interference.

	Symbol	Standard	No of elements	Φ of wire	Application
DATA COMMUNICATION CABLES					
	STP S-STP Cat. 6	ZN-TF-01:2001 ISO/IEC-11801 2rd edition:2002 IEC 61156-5:2002 EN 50173-1:2002 EN 50288-5-1	4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 250 MHz. Cables are intended for use in computer data processing systems, measurement systems, automation and control systems and for high frequency analogue signals transmission in automation and industrial TV network. The cable is intended to be used for horizontal and vertical installations within data communication networks. This cable features high resistance against electromagnetic interference.
	UTP FLEX Cat. 5, 5e	ZN-TF-01:2001 ISO/IEC-11801 2rd edition:2002 IEC 61156-5:2002 EN 50173-1:2002	4x2	AWG 24/7 AWG 26/7	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5) as well 125 MHz (cat. 5e). UTP FLEX cable is intended for use in computer data processing systems, measurement systems, automation and control systems, with high resistance of these systems against electromagnetic interference. For high frequency analogue signals transmission in automation and industrial TV network. Cable is intended to be used for horizontal and vertical installations within data communication networks.
	FTP FLEX Cat. 5, 5e	ZN-TF-01:2001 ISO/IEC-11801 2rd edition:2002 IEC 61156-5:2002 EN 50173-1:2002	4x2	AWG 24/7 AWG 26/7	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5) as well 125 MHz (cat. 5a). FTP FLEX cable is intended for use in computer data processing systems, measurement systems, automation and control systems and for high frequency analogue signals transmission in automation and industrial TV network. The cable is intended to be used for horizontal and vertical installations within data communication networks. This cable features high resistance against electromagnetic interference.
	UTP OUT DOOR UTP_r OUT DOOR Cat. 5	ZN-TF-01:2001 ISO/IEC-11801 2rd edition:2002 ANSI/TIA/EIA-568-B.2	4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5). Cables are intended for use in computer data processing systems, measurement systems, automation and control systems, with high resistance of these systems against electromagnetic interference. For high frequency analogue signals transmission in automation and industrial TV network. Cable is intended to be used for horizontal and vertical installations within data communication networks. These cables can be used outdoors.
	FTP OUT DOOR FTP_r OUT DOOR FTP_n OUT DOOR FTP_{rl} OUT DOOR Cat. 5	ZN-TF-01:2001 ISO/IEC-11801 2rd edition:2002 ANSI/TIA/EIA-568-B.2	4x2	AWG 24	For digital signals transmission with binary flowability, signal frequency spectrum up to 100 MHz (cat. 5). Cables are intended for use in computer data processing systems, measurement systems, automation and control systems and for high frequency analogue signals transmission in automation and industrial TV network. The cable is intended to be used for horizontal and vertical installations within data communication networks. This cable features high resistance against electromagnetic interference. This cables can be used outdoors. Cables FTP_n OUT DOOR and FTP_{rl} OUT DOOR with a supporting wire are designed for suspending on concrete or wooden support.

Type of fibres fol all cable construction

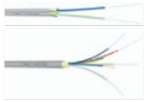
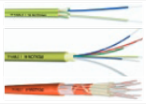
SM; SM-NZDS (NON ZERO DISPERSION SHIFTED),
SM-DS (DISPERSION SHIFTED), MM(50/125) MM(62,5/125)

	Symbol	Standard	Number of fibres	Application
OPTICAL FIBRE OUTDOOR CABLE OF LOOSE TUBE CONSTRUCTION				
All indoor cables manufactured acc to a standard **and tested acc to a standard**		ZN-TF-11:2001 ZN-EK-103:2001 ZN-TF-13:2001 ZN-EK-108:2001 IEC 60793-1 IEC 60794-1-1		Permissible pulling force during laying for non armoured cables is equal to the 2 km cable weight but not more than 2500 N reinforced cables (letter D in index) is equal to the 2 km cable weigh but not less than 3000 N armoured cables is not bigger than 2700 N Reinforced cables and armoured by steel tapes can be designed with bigger pulling force if specified in an order Range of temperature: Operating from -40°C to +70°C Storage and transport from-40°C to +70°C Laying and installation from-15°C to +60°C
	**Z-XOTKtsd** **Z-XzOTKts**	ZN-TF-11:2001	4-288	Optical fibre cables for primary and secondary cable ducts. Permissible bending radius for cable >20 x outer diameter
	**Z-XOTKtsdD** **Z-XXOTKtsdD** **Z-XzOTKtsD** **Z-XXzOTKtsD** **A-DQ(ZN)2Y** **A-DQ(ZN)B2Y** **A-DQ(L)(ZN)2Y** **A-DQ(L)(ZN)B2Y**	ZN-TF-11:2001 DIN VDE 0888		Cables reinforced with aramid yarn, suitable for laying in ducts or for direct burial and may be suspended on supports, on poles of power lines and railway tracks. Permissible bending radius for cable >20 x outer diameter.
	**Z-XOTKtcdD** **Z-XOTKtcd** **ZW-NOTKtcdD** **ZW-NOTKtcd** **A-DQ(ZN)2Y** **A-DQ(ZN)B2Y** **A/I-DQ(ZN)H** **A/I-DQ(ZN)BH**	ZN-TF-11:2001 DIN VDE 0888	2-12	Optical fibre light pack cables. Cables with fibres placed in a central tube, optical fibres in units, filled with thixotropic jelly, armoured with aramid or glass yarn placed around a tube under a cable jacket. Suitable for local LAN networks, wide-spread WAN networks, indoors and between buildings, (an option with flame retardant jacketing ZW-NOTKtcdD and W-YOTKtcdD). Cables recommended for companies, which Install and design computer and data transmission ISDN networks. Suitable for technical implementation of LAN, MAN, WAN systems. Cables with a small diameter and light. Cables may be installed in ducts or suspended on poles and they occupy little space in ducts (pipes of smaller diameter-reduced costs).

	Symbol	Standard	Number of fibres	Application
OPTICAL FIBRE OUTDOOR CABLE OF LOOSE TUBE CONSTRUCTION				
	**Z-(VX)OTKtsd** **Z-(XV)OTKtsd** **Z-(XV)OTKtsD** **Z-(VX)OTKtsD** **A-DQ(ZN)2Y4Y** **A-DQ(ZN)B2Y4Y** **A-DQ(ZN)4Y2Y**	ZN-EK-103:2001 DIN VDE 0888	4-288	Cables with polyamid, anti-rodent protection suitable for laying in ducts or for direct burial. Permissible bending radius for cable >20 x outer diameter.
	**Z-XOTKtsdp**	ZN-EK-108:2001	2-24	Flat cable of the loose tube construction, can be laid into primary or secondary ducts systems-particularly when space limitations occurs
 	**Z-XXOTKtsFtl** **ZKS-XXOTKtsFo** **ZKS-XXOTKtsFf** **A-DQ(ZN)2Y(SR)2Y**	ZN-EK-103:2001 ZN-TF-13:2001 DIN VDE 0888	4-288	Cables armoured by: steel varnish types suitable for direct burial in areas of high-risk damages steel wires suitable for direct burial in areas of high risk damages and river crossings steel corrugated tape suitable for direct burial in areas of high risk damages or attacks made by rodents. Permissible bending radius for cable >30 x outer diameter
OPTICAL FIBRE MINING CABLES				
	**YOTKGtsFoyn** **NOTKGtsFoN** **YOTKGtsFfyn** **NOTKGtsFfN**	ZN-TF-015:2002	4-72	Designed for connection between optoelectronic system devices, for laying on the ground or under ground in mining areas Permissible tensile force during operation 2 kN (for...Fo... cables) Permissible tensile force during installation. 6 kN (for...Fo... cables) Range of temperature: Operating from –20°C to +70°C Storage and transport from-20°C to +70°C Laying and installation from –5°C to +60°C Permissible bending radius for cable >30 x outer diameter
	**YOTKGtsDFoyn** **NOTKGtsDFoN** **YOTKGtsDFfyn** **NOTKGtsDFfN**	ZN-TF-015:2002	4-72	Designed for connection between optoelectronic system devices, for laying on the ground or under ground in mining areas. Permissible tensile force during operation 3 kN (for…Fo…cables) Permissible tensile force during installation 8 kN (for…Fo… cables) Range of temperature: Operating from –20°C to +70°C Storage and transport from-20°C to +70°C Laying and installation from –5°C to +60°C Permissible bending radius for cable >30 x outer diameter
OPTICAL FIBRE OUTDOOR, SELF SUPPORTING CABLE OF LOOSE TUBE CONSTRUCTION				
	**ADSS-XXOTKtsdD**	ZN-EK-107:01:2002	4-144	Self-supporting cables, suitable for suspending on poles and supports in open space. A cable may be suspended on poles of power lines and railway track. Range of temperature: Operating from –40°C to +70°C Storage and transport from –40°G to +70°C Laying and installation from –15°C to +60°C Permissible bending radius for cable >20 x outer diameter

	Symbol	Standard	Number of fibres	Application
OPTICAL FIBRE OUTDOOR, SELF SUPPORTING CABLE OF LOOSE TUBE CONSTRUCTION				
	**S-XOTKtsd** **S-XOTKtsdD** **S-XzOTKts** **S-XzOTKtsD**	ZN-TF-016 ZN-EK-105	4-144	Self-supporting 8-shaped cables, suitable for suspending on poles and supports in open space, if the dielectric messenger is used, a cable may be suspended on poles of power lines and railway track. Range of temperature: Operating from -40°C for +70°C Storage and transport from -40°C for +70°C Laying and installation from -5°C to +50°C Permissible bending radius for cable >30 x outer diameter
OPTICAL FIBRE INDOOR CABLES OF LOOSE TUBE CONSTRUCTION				
All indoor cables manufactured acc to a standard **and tested acc to a standard**		ZN-TF-11:2001 ZN-EK-103:2001 IEC 60793-1 IEC 60794-1-1		Permissible pulling force during installation for: non-armoured cables is equal to the 2 km cable weight but not more than 2500 N reinforced cable is equal to the 2 km cable weight but not less 3000 N Range of temperature: Operating from -20°C to +60°C Storage and transport from -20°C to +60°C Laying and installation from -5°C to +60°C
	**W-YOTKtsd**	ZN-EK-103:2001	4-288	Indoor flame retardant cables suitable for laying in railway and road channels and mines. Permissible bending radius for cable >20 x outer diameter
	**W-YOTKtsdD** **W-YYOTKtsdD** **J-D(ZN)Y**	ZN-EK-103:2001 DIN VDE 0888	4-288	Indoor reinforced flame retardant cables suitable for laying indoors, in railway and road channels, in mines and vertical or horizontal suspension. Permissible bending radius for cable >20 x outer diameter
	**W-(YV)OTKtsd** **W(YV)OTKtsdD**	ZN-EK-103:2001	4-288	Cables with polyamid anti-rodent protection, reinforced (D) and non-reinforced suitable for indoor installation, in railway and road channels or outside buildings on walls. Permissible bending radius for cable >20 x outer diameter.
OPTICAL FIBRE INDOOR-OUTDOOR CABLES OF LOOSE TUBE CONSTRUCTION				
All indoor - outdoor cables manufactured acc to a standard **and tested acc to a standard**		ZN-TF-11:2001 ZN-EK-103:2001 ZN-EK-108:2001 IEC 60793-1 IEC 60794-1-1		Permissible pulling force during installation for: non-armoured cables is equal to the 2 km cable weight but not more than 2500 N reinforced cable is equal to the 2 km cable weight but not less than 3000N Range of temperature. Operating from -20°C to +60°C Storage and transport from -30°C to +60°C Laying and installation from -15°C to +60°C

	Symbol	Standard	Number of fibres	Application
OPTICAL FIBRE INDOOR-OUTDOOR CABLES OF LOOSE TUBE CONSTRUCTION				
	ZW-NOTKtsd	ZN-TF-11:2001	4-288	Indoor/outdoor flame retardant cables suitable for laying in railway and road channels and In mines. Permissible bending radius for cable >20 x outer diameter
	ZW-NOTKtsdD ZW-NXOTKtsdD ZW-NNOTKtsdD A/I-DQ(ZN)H	ZN-TF-11:2001 DIN VDE 0888		Indoor/outdoor reinforced, flame retardant cables suitable for laying out door in railway and road channels, in mines and vertical or horizontal suspension. Permissible bending radius far cable >20 x outer diameter
	ZW-(NV)OTKtsd ZW-(NV)OTKtsdD A/I-DQ(ZN)4YH	ZN-EK-103:2001 DIN VDE 0888		Cables with polyamid anti-rodent protection reinforced (D) and non-reinforced suitable for indoor installation, in railway and road channels or outside buildings on walls. Permissible bending radius for cable >20 x outer diameter
	ZW-NOTKtsdp	ZN-EK-108:2001	2-24	Flat cable of the loose tube construction. can be laid into primary or secondary duct systems-particularly when space limitations occurs.
OPTICAL FIBRE INDOOR ASSEMBLE CABLES				
	W-NOTKSd W-YOTKSd I-V(ZN)H I-V(ZN)Y	ZN-TF-012:2001 DIN VDE 0888	1-24	Designed for connection between optoelectronic system devices, for indoor installation. Cables of tight tube, 0.9 µm, buffer. Permissible pulling force for simplex cable 400 N duplex cable 800 N multi fibre 1200 N Range of temperature: Operating from -20°C to +60O C Installation from -5°C to +60°C Storage and transport from -30°C to +60°C Permissible bending radius for cable >20 x outer diameter
OPTICAL FIBRE INDOOR BREAKOUT CABLES				
	W-NNOTKSd W-YYOTKSd I-V(ZN)HH I-V(ZN)YY	ZN-TF-012:2001 DIN VDE 0888	4-96	Designed for connection between optoelectronic system devices, for indoor installation. Cables of tight tube, 0.9 µm, consisting of terminating modules. Permissible pulling force: for cables without strength member (F*n)N for cables with strength member (F*n)+600N where: F- single module force; n-number of modules in a cable Range of temperature: Operating from -20°C to +60O C Installation from -5°C to +60°C Storage and transport from -30°C to +60°C Permissible bending radius for cable >20 x outer diameter
OPTICAL FIBRE CABLES FOR MILITARY APPLICATIONS				
	PSKD A- V(ZN)11Y(ZN)11Y	ZN-TF-017	2-18	Optical fibre cables for military tactical field communications systems, field communications systems on areas of mining, geological explorations, underground, temporary field communication and video signals transfer systems.

	Symbol	Standard	Number of fibres	Application
OPTICAL FIBRE CABLES				
	**A-DQ(ZN)2Y**	VDE 0888-3 DIN EN 187000 DIN EN 188000	4-144	Cables reinforced with aramid yarn, available with a central bundle core and stranded version (at fibre number greater than 12) suitable for laying in ducts or for direct burial and may be suspended on supports, on poles of power lines and railway tracks. Permissible bending radius for cable >20 x outer diameter.
	**J-D(ZN)H** **J-D(ZN)Y**	VDE 0888-6 DIN EN 187000 DIN EN 188000	4-144	Indoor reinforced, flame retardant cables suitable for laying out door in railway and road channels, in mines and vertical or horizontal suspension. The halogen-fee version is especially suitable for the application in skyscrapers, hospitals and stores. Permissible bending radius for cable >20 x outer diameter
	**J-V(ZN)H**	VDE 0888-6 DIN EN 187000 DIN EN 188000	2-24	Indoor fibre optic cable used for the data network cabling at the indoor environment.
	**J-V(ZN)H simplex**	VDE 0888-4 DIN EN 187000 DIN EN 188000	1	Cables of tight tube, 0.9 µm, buffer. Range of temperature: operating from -20°C to +60° C
OPTICAL FIBRE CABLES CERTIFICATED – UKRSEPRO (Ukraine)				
	**Z-XOTKt(s)d**	IEC 60793-1 IEC 60794-1-1 GOST 18690-82	4-288	Optical fibre cables for primary and secondary cable ducts. Permissible bending radius for cable >20 x outer diameter
	**Z-XOTKt(s)dD**	IEC 60793-1 IEC 60794-1-1 GOST 18690-82	4-288	Cables reinforced with aramid yarn, suitable for laying in ducts or for direct burial and may be suspended on supports, on poles of power lines and railway tracks. Permissible bending radius for cable >20 x outer diameter.
	**Z-XXOTKt(s)dD**	IEC 60793-1 IEC 60794-1-1 GOST 18690-82	4-288	
	**ZKS-XXOTKtsFf**	IEC 60793-1 IEC 60794-1-1 GOST 18690-82	4-144	Cables armoured by steel corrugated tape suitable for direct burial in areas of high risk damages or attacks made by rodents Permissible bending radius for cable >30 x outer diameter
	**W-YOTKSd** **W-YnOTKSd** **W-NOTKSd**	IEC 60793-1 IEC 60794-1-1 GOST 18690-82	1-24	Designed for connection between optoelectronic system devices, for indoor installation. Cables of tight tube, 0.9 µm, buffer.