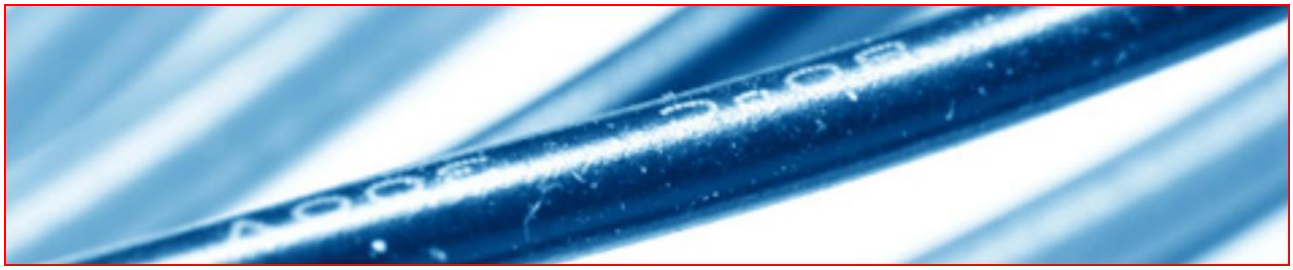
WARSZAWA 4 kwietnia 2017



OFERTA NR. 01042017/TCGvKFOKable

Temat: Oferta na kable światłowodowe TeleCompGROUP.

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Kabel światłowodowy - SINGIEL MODE

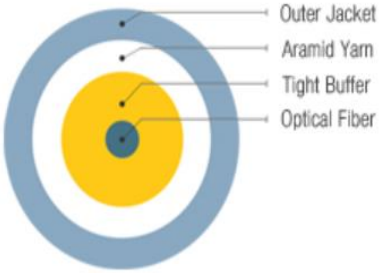
One coated fiber shall have a buffer layer of reinforcing aramid yarn followed by an extrude d outer jacket with the diameter from 2.0mm to 3.0mm.
The tight buffer designs add thermoplastic to the coating directly on the fiber with diameter up to 900 μm. Tight coating designs use longitudinal aramid yarn as the strength m ember.
The colored outer jacket shall be extruded over the aramid yarn.
Other designs are also available on request to meet specified requirements and conditions.

Application

Simplex is a flexible, flame-retardant, nonmetallic cable recommended for use in teleco mmunication station between the optical line system and the fiber frame distribution. It is also suitable for data networks.

- Fiber To The Desk
- Pigtails and Patch Cords
- Dropped Ceiling. Try and Conduit Application

Construction



Features

- Available in single mode and multi-mode fibers
- Highly flexible and light weight for easy handling
- Flame-retardant PVC, Nylon and LSZH buffer
- Flame-retardant PVC, FR-PE and LSZH outer jacket
- Aramid yarn strength member reinforcement
- Easy stripping for quick splicing

Cable Technical Data

Buffer Diameter (μm)	Diameter(um) Jacket Diameter (mm)	Cable Weight (kg/km)	Tensile Load(N)		Minimum Bending Radius(mm)		Temperature(℃)	
			Installing	Operating	Installing	Operating	Installing	Operating
900	2	3.6	180	90	50	30	-15~+50	-20~+70
900	2.4	5.3	220	100	50	30	-15~+50	-20~+70
900	2.8	6.9	220	100	50	30	-15~+50	-20~+70
900	3	8.6	320	160	50	30	-15~+50	-20~+70

Kabel światłowodowy - Duplex

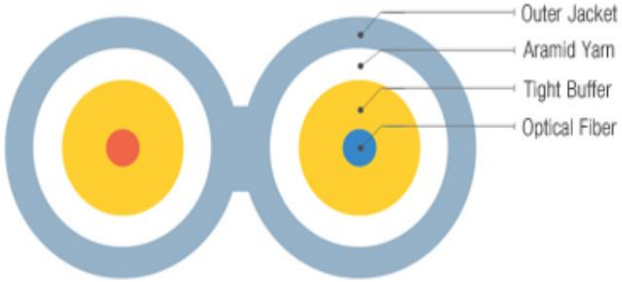
Each two coated and buffered fibers, Fibers surrounded with one layer of reinforcing arami d yarn followed by an extruded outer jacket of a round shape configuration ("O") with the d iameter of 3.0mm or 4.8mm.
The tight buffer designs add thermoplastic to the coating directly on the fiber with diameter up to 900㎛. Tight coating designs use longitudinal aramid yarn as the strength member. The colored outer jacket shall be extruded over the aramid yarn. Other designs are also available on request to meet specified requirements and conditions.

Application

Duplex round is a flexible, flame-retardant, non-metallic cable recommended for use in tele communication station between the optical line system and the fiber frame distribution.
It is also suitable for data networks.

- Fiber To The Desk
- Pigtails and Patch Cords
- Dropped Ceiling. Try and Conduit Application

Construction



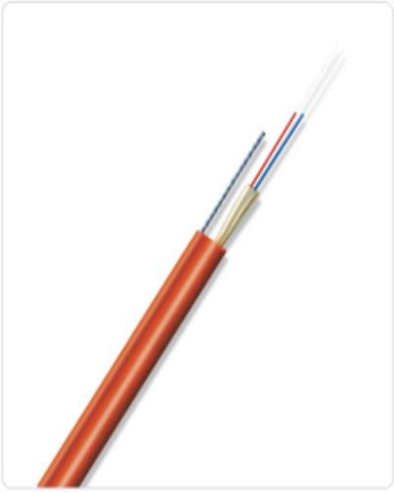
Features

- Available in single mode and multi-mode fibers
- Highly flexible and light weight for easy handling
- Flame-retardant PVC, Nylon and LSZH buffer
- Flame-retardant PVC, FR-PE and LSZH outer jacket
- Aramid yarn strength member reinforcement
- Easy stripping for quick splicing

Cable Technical Data

Buffer Diameter (㎛)	Jacket Diameter (mm)	Cable Weight (kg/km)	Tensile Load(N)		Minimum Bending Radius(mm)		Temperature(℃)	
			Installing	Operating	Installing	Operating	Installing	Operating
900	3	7.6	440	200	50	30	-15~+50	-20~+70
900	4.8	2.1	600	300	96	48	-15~+50	-20~+70

Kabel światłowodowy typu - Drop

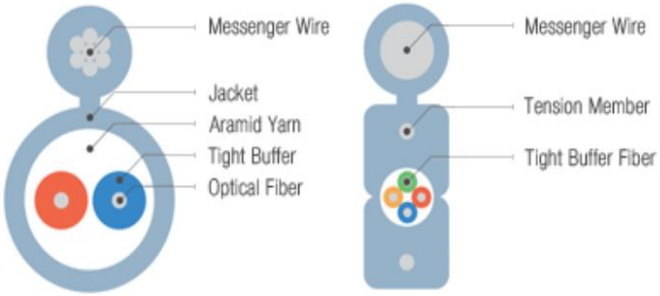


One coated fiber shall have a buffer layer of reinforcing aramid yarn followed by an extruded outer jacket.
The tight buffer designs add thermoplastic to the coating directly on the fiber with diameter up to 900㎛.
Tight coating designs use longitudinal aramid yarn as the strength member. The colored ou ter jacket shall be extruded over the aramid yarn.
Other designs are also available on request to meet specified requirements and conditions.

Application

- FTTH
- Cyber APT
- Office Building
- PC Room
- CATV

Construction



Features

- Available in single mode and multi-mode fibers.
- Highly flexible and light weight for easy handing
- Flame-retardant PVC, Nylon and LSZH buffer
- Flame-retardant PVC, FR-PE and LSZH outer Jacket
- Aramid yarn strength member reinforcement
- Double Jacket
- Easy stripping for quick splicing

Cable Technical Data

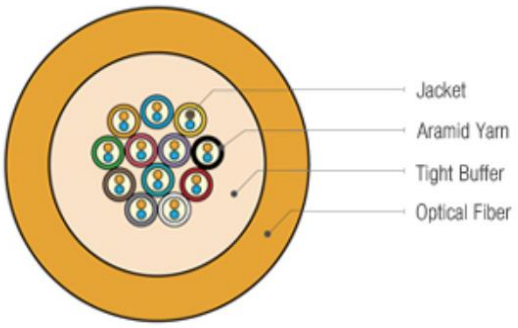
Fiber Count	Buffer Diameter (㎛)	Jacket Diameter (mm)	Cable Weight (kg/km)
1	900	3.5×6.5	22
2			23

Fiber Count	Buffer Diameter (㎛)	Jacket Diameter (mm)	Tension member Diameter (mm)	Messenger wire Diameter (mm)
4	650/900	3.8×10.2	1	1.2

Optyczne kable dystrybucyjne 1

900㎛ 2fiber buffered Aramid yarn strength member

Construction



Features

- Fiber to the desk cable for very high speed multimedia application
- Rugged construction
  - 2 fiber buffer structure with individually protected tubes
- Color coded tubes to identify transmitting and receiving fibers
- Small size and light weight
- Simplify pulling and installation work

Options

- Fiber - Single mode, 50㎛, 62.5㎛ multi mode available
- Outer Jacket color
  - Single Mode : Yellow
  - 62.5/125㎛ 1Gbe : Orange
  - 50/125㎛ 1Gbe : Orange
  - 50/125㎛ 10Gbe : Aqua
- Outer jacket : PVC or LSZH (Low Smoke Zero Halogen)

Specification

- ISO/IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Cable Technical Data

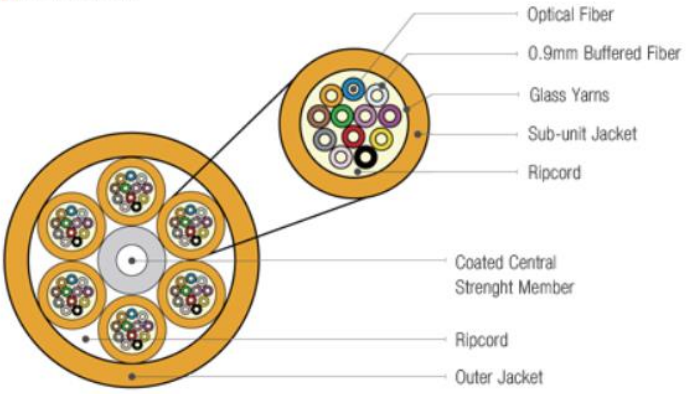
Storage Temperature : -10 to +70℃ / Operating Temperature : 0 to +60℃

Fiber Count	Nominal Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
					Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
	mm	inch	kg/km	lb/kft	N	N	N/cm	N/cm	mm	inch	mm	inch
2	2.9	0.11	10	0.02	300	150	35	13	58	2.28	29	1.15
4	4.5	0.18	20	0.04	660	300	35	13	90	3.54	45	1.79
6	5.2	0.20	23	0.05	660	300	35	13	104	4.09	52	2.07
8	5.3	0.21	25	0.06	660	300	35	13	106	4.17	53	2.11
12	5.7	0.22	30	0.07	660	300	35	13	114	4.49	57	2.27
16	6.0	0.24	35	0.08	660	300	35	13	120	4.72	60	2.39
24	6.7	0.26	40	0.09	660	300	35	13	134	5.28	67	2.67

Optyczne kable dystrybucyjne 2

900㎛ tight buffered Glass yarn strength member

Construction



Specification

- ISO/IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Application

- Distribution cables are rugged, high performance optical communication cables for inside plant installations
- Backbone & Computer Room Cabling
- Compact design for limited conduit space
- RoHS (Restriction of the use of Certain HazardousSubstances Directive) complied

Options

- Fiber - Single mode, 50㎛, 62.5㎛ multi mode available
- Sub-unit & Outer Jacket color
  - Single Mode : Yellow
  - 62.5/125㎛ 1Gbe : Orange
  - 50/125㎛ 1Gbe : Orange
  - 50/125㎛ 10Gbe : Aqua
- If the cable will be used indoor/outdoor applications, outer cable jacket shall be black
- Outer jacket : PVC or LSZH (Low Smoke Zero Halogen)

Cable Technical Data

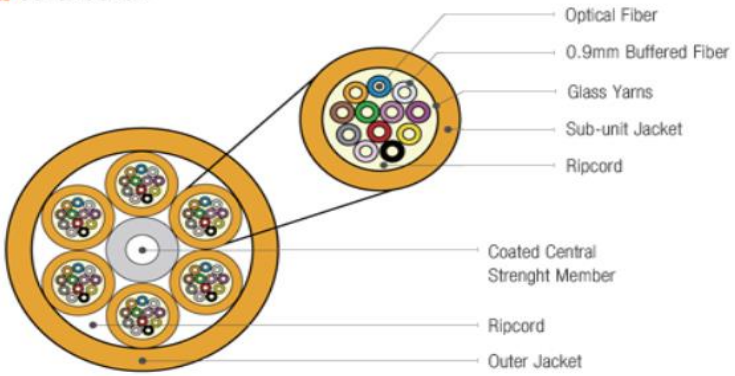
Storage Temperature : -20 to +70℃ / Operating Temperature : -10 to +60℃

Constuction	Fiber Count	Nominal Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
						Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
		mm	inch	kg/km	lb/kft	N	N	N/cm	N/cm	mm	inch	mm	inch
Single Unit	2	4.5	0.18	25	0.06	660	300	35	13	90	3.54	45	1.79
	4	5.3	0.21	30	0.07	660	300	35	13	106	4.17	53	2.11
	6	5.7	0.22	35	0.08	660	300	35	13	114	4.49	57	2.27
	8	6	0.24	40	0.09	660	300	35	13	120	4.72	60	2.39
	12	6.7	0.26	50	0.11	660	300	35	13	134	5.28	67	2.67
	16	8.5	0.33	80	0.18	1320	660	50	13	170	6.69	85	3.38
	18	8.9	0.35	82	0.18	1320	660	50	25	178	7.01	89	3.54
	24	9.8	0.39	95	0.21	1320	660	50	25	196	7.72	98	3.90
6 Fiber Subunits	24*	13.9	0.55	180	0.40	1320	660	50	25	278	10.94	139	5.53
12 Fiber Subunits	48	18.3	0.72	295	0.65	1320	660	50	25	366	14.41	183	7.28

Optyczne Kable dystrybucyjne 3

900㎛ tight buffered Aramid yarn strength member

Construction



Specification

- ISO/IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Application

- Distribution cables are rugged, high performance optical communication cables for inside plant installations
- Backbone & Computer Room Cabling
- Compact design for limited conduit space
- RoHS (Restriction of the use of Certain Hazardous Substances Directive) optional

Options

- Fiber - Single mode, 50㎛, 62.5㎛ multi mode available
- Sub-unit & Outer Jacket color
  - Single Mode : Yellow
  - 62.5/125㎛ 1Gbe : Orange
  - 50/125㎛ 1Gbe : Orange
  - 50/125㎛ 10Gbe : Aqua
- If the cable will be used indoor/outdoor applications, outer cable jacket shall be black
- Outer jacket : PVC or LSZH (Low Smoke Zero Halogen)

Cable Technical Data

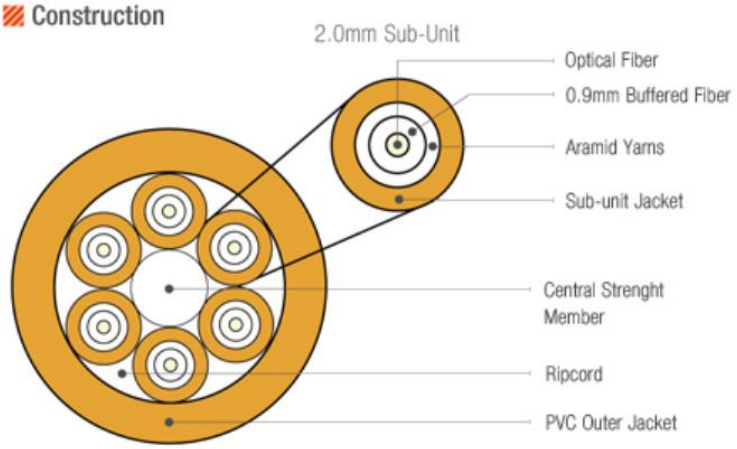
Storage Temperature : -20 to +70℃ / Operating Temperature : -10 to +60℃

Constuction	Fiber Count	Nominal Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
						Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
		mm	inch	kg/km	lb/kft	N	N	N/cm	N/cm	mm	inch	mm	inch
Single Unit	2	4.5	0.18	20	0.04	660	300	50	25	90	3.54	45	1.79
	4	5.3	0.21	25	0.06	660	300	50	25	106	4.17	53	2.11
	6	5.7	0.22	30	0.07	660	300	50	25	114	4.49	57	2.27
	8	6	0.24	35	0.08	660	300	50	25	120	4.72	60	2.39
	12	6.7	0.26	40	0.09	660	300	50	25	134	5.28	67	2.67
	16	8.5	0.33	70	0.15	1320	660	100	100	170	6.69	85	3.38
	18	8.9	0.35	75	0.17	1320	660	100	100	178	7.01	89	3.54
	24	9.8	0.39	90	0.20	1320	660	100	100	196	7.72	98	3.90
6 Fiber Subunits	24*	13.9	0.55	160	0.35	1320	660	100	100	278	10.94	139	5.53
12 Fiber Subunits	48	18.3	0.72	275	0.61	1320	660	100	100	366	14.41	183	7.28

Kable światłowodowe Typu Break out cable

ONFR(riser rated), OFNP(plenum rated) or LSZH rated

Construction



Specification

- ISO/IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Application

- Distribution cables are rugged, high performance optical communication cables for inside plant installations
- Backbone & Computer Room Cabling
- Compact design for limited conduit space
- RoHS (Restriction of the use of Certain Hazardous Substances Directive) optional

Options

- Fiber - Single mode, 50㎛, 62.5㎛ multi mode available
- Higher fiber counts available upon request
- Other Sub-Unit Diameters Available (1.8mm, 2.4 mm, 2.9mm etc.)
- Buffered fiber : Natural (white)
- Sub-unit & Outer Jacket color
  - Single Mode : Yellow
  - 62.5/125㎛ 1Gbe : Orange
  - 50/125㎛ 1Gbe : Orange
  - 50/125㎛ 10Gbe : Aqua

Cable Technical Data

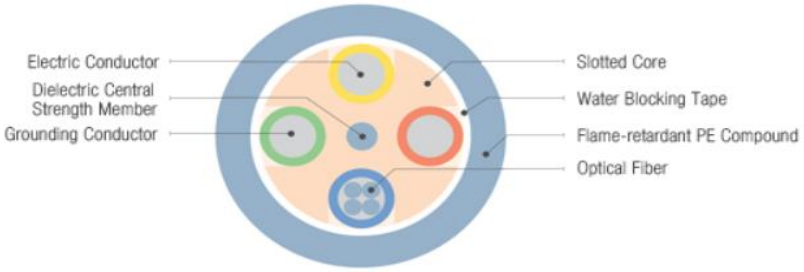
Storage Temperature : -20 to +70℃ / Operating Temperature : -10 to +60℃

Fiber Count	Nominal Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
					Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
	mm	inch	kg/km	lb/kft	N	N	N/cm	N/cm	mm	inch	mm	inch
2	7.5	0.30	50	0.11	660	300	35	13	150	5.91	75	2.98
4	7.7	0.30	55	0.12	660	300	35	13	154	6.06	77	3.06
6	8	0.31	65	0.14	660	300	35	13	160	6.30	80	3.18
8	9.5	0.37	85	0.19	660	300	35	13	190	7.48	95	3.78
12	10.5	0.41	95	0.21	1320	660	35	13	210	8.27	105	4.18

Kabel optyczno – elektryczny

Any composition cable can be manufactured to your specific requirements.
Saves installation cost. Saves interface space and time.

Construction



Features

- Optical & Electrical Composition Cable
- Optical & UTP Composition Cable
- UTP & Electrical Composition Cable

Application

A composite cable is a communications cable having various combinations of copper conductor suitable for a variety of uses including power, grounding, other electronic control and optical fibers in a single composite cable.
This cable offers solutions for Mobile phone, WIBRO(Wireless Broadband) and DMB(Digital Multimedia Broadcasting) at subways, tunnels and in-building antenna systems.

Cable Technical Data

Fiber Count	Fiber Counts (Core)	Electric Conductor					Grounding Conductor				Sheath Thickness (mm)	Overall Diameter (mm)
		Electric Conductor (mm²)	Number/ Diameter of Single Wire (ea/mm)	Number (ea)	Insulation Thickness (mm)	Insulation Outside Diameter (mm)	Fiber Counts (Core)	Electric Conductor (mm²)	Number (ea)	Insulation Thickness (mm)		
SM/2.5	4~24	2.5	7/0.67	2	0.7	3.41	2.5	7/0.67	1	0.7	2	14
SQMM	36	2.5	7/0.67	2	0.7	3.41	2.5	7/0.67	1	0.7	2	15
SM/4	4~24	4	7/0.85	2	0.7	3.95	2.5	7/0.67	1	0.7	2	16
SQMM	36	4	7/0.85	2	0.7	3.95	2.5	7/0.67	1	0.7	2	17
SM/6	4~24	6	7/0.85	2	0.7	4.52	2.5	7/0.67	1	0.7	2	17
SQMM	36	6	7/0.85	2	0.7	4.52	2.5	7/0.67	1	0.7	2	18
SM/10	4~24	10	7/1.35	2	0.7	5.45	2.5	7/0.67	1	0.7	2	18
SQMM	36	10	7/1.35	2	0.7	5.45	2.5	7/0.67	1	0.7	2	19
SM/16	4~24	16	Compact Circular	2	0.7	6.1	4	7/0.85	1	0.7	2	20
SQMM	36	16	Compact Circular	2	0.7	6.1	4	7/0.85	1	0.7	2	21
SM/25	4~24	25	Compact Circular	2	0.9	7.7	4	7/0.85	1	0.7	2	23
SQMM	36	25	Compact Circular	2	0.9	7.7	4	7/0.85	1	0.7	2	24

Kable MILITARNE

WD-1/TT, WD-1A/TT

Application

This is mainly employed as military guard telephone wires and other electrical applications and has the following features.

- WD-1/TT has two twisted, individually insulated conductors and the WD-1A/TT has two insulated conductors bonded together.
- High mechanical strength aids installation and withdrawal easily.
- Excellent in weatherproofness.
- Variety usage.

Construction

- Conductor
  - Composed of 4 strands of 0.28mm tinned copper wire and 3 stands of 0.28mm galvanized steel wire.
- Insulation
  - Black Polyethylene extrusion.
- Jacket
  - Natural colored nylon extrusion.
- Finished field wire
  - Two finished single conductors shall be twisted closely together.

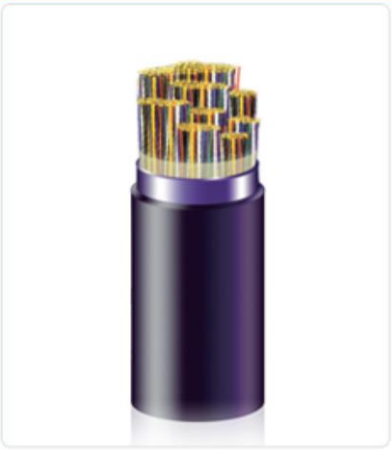
Electrical Requirements

- Conductor resistance
  - Not exceeding 151Ω/㎞ at 20℃.
- Dielectric strength
  - Shall be capable of withstanding A.C 1,000 volts for at least 1 minute
- Insulation resistance
  - Not less than 1000 ㏁/㎞

Cable Technical Data

Conductor		Approx. PE Sheath Thickness (mm)	Nylon Sheath		2 Stand		Max. Conductor Resistance (at 20℃)	Test Voltage (Ω/km)	Min. Insulation Resistance at 15.6· (mΩ-km)
Construction No. of Wire/Dia (No/mm)	Overalll Diameter (mm)		Thickness (Approx) (mm)	Max. Overall Diameter (mm)	Max. Pitch (mm)	Overall Diameter (mm)			
7/0.28	0.84	0.45	0.2	2.24	152.4	4.2	150.92	1,000	2,000

F/S Kable FSLAP



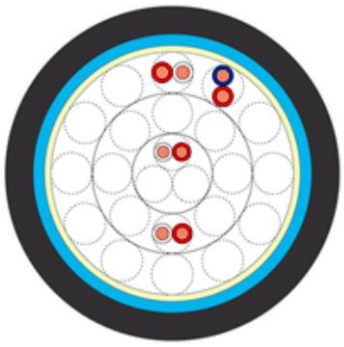
Application

This cable is for used distribution or junction network in exchange area and usually direct b urial or underground (duct) application. The cable is insulated with a dual extrusion of foam -skin insulting High-Density Polyethylene (HDPE) compound.
The cable structure is completed by the application of a suitable core wrapping material, pl astic coated aluminum tape shield and overall black polyethylene sheath on which sequenti ally length marking is printed. This specification is generally based on KT Specification T41 002-00-02.

Features

- Conductor
  - Solid annealed copper. The conductor sizes are 0.4, 0.5, 0.65, 0.9mm.
- Insulation
  - Dual insulation of foam polyethylene covered with a skin of HDPE.
- Color coding
  - Fully color coding
- Cable Formation
  - Two colored insulated conductors are uniformly twisted together to form a pair, the twisted length being specially designed to minimize the capacitance unbalance and the crosstalk.T wisted pairs are assembled to form a substantially cylindrical group of 25 pairs (called unit). When desired for lay-up reasons, the units are divided into two or more sub-unites which a re bound with durably colored polyethylene tapes and cabled to complete cable core. Sup er unit that is assembled with suitable number of units, subunits may be used for manufac turing reasons.
- Core wrapping
  - A non-hygroscopic and dielectric tape is applied longitudinally or helically having suitable o verlap.
- Shield
  - A single aluminum tape (0.2mm thick of aluminum) coated on both sides with plastic is ap plied longitudinally over the core covering with an overlap.
- Sheath
  - The cable core is enclosed by an extruded black low density polyethylene(LDPE).
- Identification
  - A plastic tape, durably marked with the manufacturer's name, year of manufacture and cab le size (if required), is placed under the core covering alternatively, these details may be pr inted on the outer wrappings or outside of the sheath.
- Length marking
  - Sequentially numbered length marking is printed on the outside of the sheath.

Construction

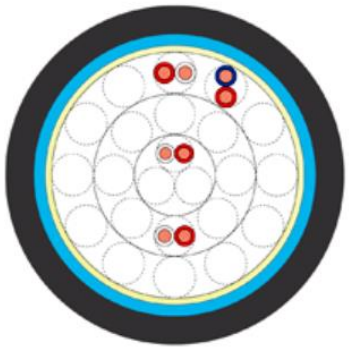


F/S Kable FSJFLAP

Application

This cable is for used distribution or junction network in exchange area and usually direct b urial or underground (duct) application. The cable is insulated with a dual extrusion of foam-skin insulting High-Density Polyethylene (HDPE) compound and filled with water resistant co mpound in the air space to prevent water ingress from faulty portion of sheath or closure. The cable structure is completed by the application of a suitable core wrapping material, fl ooding compound, plastic coated aluminum tape shield and overall black polyethylene she ath on which sequentially length marking is printed. This specification is generally based on KT Specification T41002-00-02.

Construction



Features

- Conductor
  - Solid annealed copper. The conductor sizes are 0.4, 0.5, 0.65, 0.9mm.
- Insulation
  - Dual insulation of foam polyethylene covered with a skin of HDPE.
- Color coding
  - Fully color coding
- Cable Formation
  - Two colored insulated conductors are uniformly twisted together to form a pair, the twisted length being specially designed to minimize the capacitance unbalance and the crosstalk. Twisted pairs are assembled to form a substantially cylindrical group of 25 pairs (called uni t). When desired for lay-up reasons, the units are divided into two or more sub-unites whic h are bound with durably colored polyethylene tapes and cabled to complete cable core. S uper unit that is assembled with suitable number of units, subunits may be used for manufa cturing reasons.
- Filling compound
  - The water resistant filling compound is applied to the air space within the cable core.
- Core wrapping
  - A non-hygroscopic and dielectric tape is applied longitudinally or helically having suitable o verlap.
- Shield
  - A single aluminum tape (0.2mm thick of aluminum) coated on both sides with plastic is ap plied longitudinally over the core covering with an overlap.
- Flooding compound
  - Sufficient flooding compound shall be applied between the core wrap and shield. If inner ja cket is applied under the corrugated shield, flooding compound is not applied.
- Sheath
  - The cable core is enclosed by an extruded black low density polyethylene(LDPE).
- Identification
  - A plastic tape, durably marked with the manufacturer's name, year of manufacture and cab le size (if required), is placed under the core covering alternatively, these details may be pr inted on the outer wrappings or outside of the sheath.
- Length marking
  - Sequentially numbered length marking is printed on the outside of the sheath.

F/S Kable FSLAP –SS

Application

This cable is for used distribution or junction network in exchange area and usually direct b urial or underground (duct) application. The cable is insulated with a dual extrusion of foam-skin insulting High-Density Polyethylene (HDPE) compound and filled with water resistant co mpound in the air space to prevent water ingress from faulty portion of sheath or closure. The cable structure is completed by the application of a suitable core wrapping material, fl ooding compound, plastic coated aluminum tape shield and overall black polyethylene she ath on which sequentially length marking is printed. This specification is generally based on KT Specification T41002-00-02.

Features

- Conductor
  - Solid annealed copper. The conductor sizes are 0.4, 0.5, 0.65, 0.9mm.
- Insulation
  - Dual insulation of foam polyethylene covered with a skin of HDPE.
- Color coding
  - Fully color coding
- Cable Formation
  - Two colored insulated conductors are uniformly twisted together to form a pair, the twisted length being specially designed to minimize the capacitance unbalance and the crosstalk. Twisted pairs are assembled to form a substantially cylindrical group of 25 pairs (called uni t). When desired for lay-up reasons, the units are divided into two or more sub-unites whic h are bound with durably colored polyethylene tapes and cabled to complete cable core. S uper unit that is assembled with suitable number of units, subunits may be used for manufa cturing reasons.
- Slack-containing core construction
  - In "figure 8" type self-supporting cable, some extra conductor length over the cable core le ngth is required to allow easy operation of service connection after the cable is installed on poles. All self-supporting CCP cables are manufactured to give above extra length by S-Z st randing machine.
- Core wrapping
  - A non-hygroscopic and dielectric tape is applied longitudinally or helically having suitable ov erlap.
- Shield
  - A single aluminum tape (0.2mm thick of aluminum) coated on both sides with plastic is app lied longitudinally over the core covering with an overlap.
- Sheath
  - The cable core is enclosed by an extruded black low density polyethylene(LDPE).
- Self-supporting structure
  - "Figure 8" type construction is applied to the self-supporting cable.
- Identification
  - A plastic tape, durably marked with the manufacturer's name, year of manufacture and cab le size (if required), is placed under the core covering alternatively, these details may be pr inted on the outer wrappings or outside of the sheath.
- Length marking
  - Sequentially numbered length marking is printed on the outside of the sheath.

Construction