

FIBER OPTIC CABLE PRODUCT

SINGLE TUBE, OUTDOOR DROP WIRE ARMORED SM SERIES



PRODUCT DESCRIPTION

- Low attenuation, dispersion and special control of excess fiber length ensure excellent mechanical and envelopment properties.
- Filling compound and water block material validly prevent water penetration.
- Color code fiber and Loose tube in standard

CHARACTERISTIC

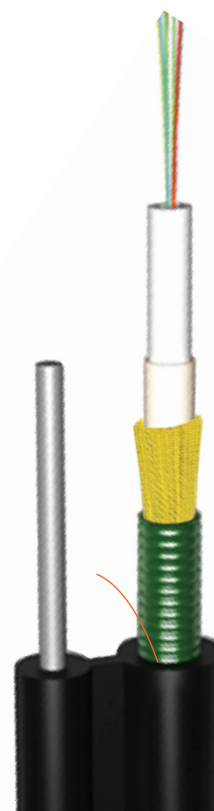
- Messenger steel wire
- Filling compound
- Optical fibers
- Water Blocking Tape
- Aramid yarns/E-Glass yarn
- Corrugated steel tape
- Outer jacket HDPE (LSZH) with rodent protection
- Rip cord

APPLICATION

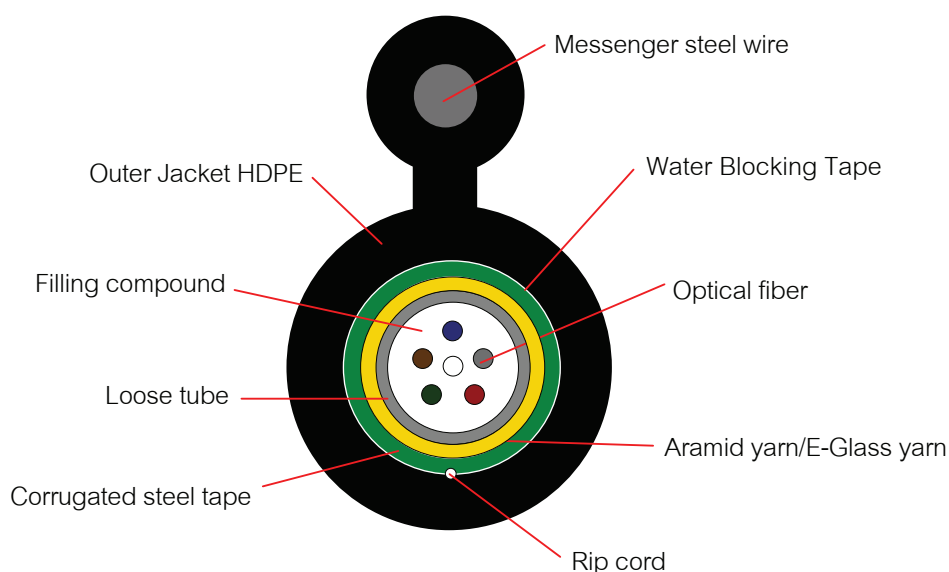
- Special design for used together with outdoor and indoor
- All dielectric construction
- Multi-mode or single-mode fiber optic
- IEEE802.3, 10G Ethernet, Gigabit Ethernet, ATM, FDDI, Fiber Channel.

STANDARD

ISO/IEC 11801:2002, ISO/IEC 11801:2011(Ed.2.2), ANSI/TIA-568-C.3,
ANSI/TIA/EIA-568-B.3, ANSI/ICEA 696, TIA/EIA-598-A, Telcordia GR-409-CORE,
Telcordia GR-20-CORE, IEC 60793, IEC 60793-2, IEC 60794-1-2, IEC 61034-2,
IEC 60754-2, IEC 60332-3, IEC 60332-1, ANSI/ICEA 640, ITU-T G.652D (Single mode),
ITU-T G.651 (Multimode), ITU-TG 657A2, EN 50173-1, RoHS Compliant 2002/95/EC



F-SL-DWA9-XX



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CONSTRUCTION

Structure		Parameter
Fiber count	Fibers	4/6/12/24
Loose tube	Material	PBT
	No. fiber per tube	4/6/12/24
	Diameter	Approx. 2.5
	Filling compound material	Thixotropic jelly
	Water Blocking Tape	0.3 mm
Support wire	Material	Galvanized steel wire
	Diameter	Φ1.6 mm
Armored	Material	Corrugated steel tape
Strength member	Material	Aramid yarn /E-Glass yarn
Cable diameter	Material	HDPE with Rodent Repellent (LS2)
	Thickness	1.5 mm
Overall		Approx. 4.5
Poly Ethylene		Approx.9.6 ±1.0
Cable sheath		HDPE
Max. tensile load	Installing	1500N
	Long term	800N

FIBER COLOR

Category	Description	Specifications
		G.652 , 9/125μm(OS2)
Optical Specifications	Attenuation	@1310nm ≤0.35dB/km
		@1383nm ≤0.35db/km
		@1550nm ≤0.21db/km
		@1625nm ≤0.23db/km
	Attenuation discontinuity	≤0.05dB
	Attenuation vs. Wavelength	@1285 -1330 nm ≤0.05dB/km
		@1525 -1575nm ≤0.05dB/km
	Zero dispersion wavelength	1300-1324nm
	Zero dispersion slope	≤0.092ps/(nm².km)
	Dispersion	@1310nm ≤3.5ps/nm.km
		@1550nm ≤18ps/nm.km
	Polarization mode dispersion	≤0.5ps/km½
	Cable cutoff wavelength (λ _{cc})	≤1260nm
	Effective group index of refraction	@1310nm 1.4675
		@1510nm 1.4681
Geometric Specifications	Mode field diameter	@1310nm 9.2±0.6μm
		@1550nm 10.4±0.8μm
	Cladding diameter	125±1μm
	Cladding non-circularity	≤1.0%
	Coating diameter	250±5μm
	Coating/Cladding concentricity error	≤12μm
	Core/Cladding concentricity error	≤0.5μm
	Core non -circularity	≤5%

Mechanical Specifications	Proof test level	$\geq 1.0\%$
	Fiber curl radius	$\geq 4.0\text{m}$
	Peak coating strip force	1.3-8.9N
Max. tensile load	Installation	1800N
	Operation	1000N
	Pressure	4400N/10CM
Bending radius	Dynamic	20H
	Static	10H
Max Span Length		60m
Operating temperature	Storage	-40~+75°C
	Operation	-40~+80°C
Pole mount		50 m and wind force 100 Km/hr

TEST REQUIREMENTS

Item	Test standard	Method	Acceptance criteria
Tensile test	IEC 60794-1-2-E1A	- Max. tensile strength:1200N	Fiber strain at maximum
	TIA/EIA-455-33A	- Sample length:50 meters	Load: max. 0.33%
		- Time: 1 minutes;	-Attenuation increase $\leq 0.50\text{dB}$
Crush test	IEC 60794-1-2-E3	- Load:500N	No splits or cracks in the outer jacket;
	TIA/EIA-455-41A	- Time: 1 minutes	-No fiber break
		- Length: 100mm	
Impact test	IEC 60794-1-2-E4	- Impact energy: 150g	-No splits or cracks in the outer jacket
	TIA/EIA-455-25B	- Height:1 meter	-Attenuation increase $\leq 0.50\text{dB}$
		- Impact points: min.1	
		- Number of impacts: 5	
Bending test	IEC 60794-1-2-E6,	- Diameter of mandrel: 20×D	- No splits or cracks in the outer jacket
	TIA/EIA-455-104A	- Number of turns/helix:10	- No fiber break
	IEC 60794-1-2-E11B	- Number of cycles: 5	
Temperature cycling test	IEC 60794-1-2-F1	- Temperature step: +20 °C -40 °C+60 °C	- Attenuation variation for reference value
	TIA/EIA-455-3A	-40 °C+60 °C+20 °C	(The attenuation to be measured before test at
		- Time per each step: 12 hrs.	+20±3 C) $\leq 0.50\text{dB/km}$
		- Number of cycles: 2 cycles	
Water penetration test	IEC 60794-1-2-E5	- Water height: 1m	-No water leakage at the end of the sample
	TIA/EIA-455-82B	- Sample length:3m	
		- Duration of test: 24hrs.	
Drip test	IEC 60794-1-2-E14	- Five 0.3m samples suspended vertically in a climate chamber, raised temperature to +70°C	-No filling compound shall drip from tubes after 24 hrs.
Torsion test	IEC 60794-1-2-E7,	- 1m cable length with 150N weight	- No splits or cracks in the outer jacket
	TIA/EIA-455-85A	- ±90 degrees, 10 cycles	-Attenuation increase $\leq 0.10\text{B}$ (After the test)

PACKING AND DRUM

The cable is rounded on a non-returnable wooden drum. Both ends of cable are securely fastened to drum and sealed with a shrinkable cap to prevent ingress of moisture. The following information shall be marked on the outer sheath of the cable at an interval of about 1 meter.

- Cable type and number of optical fiber
- Manufacturer name
- Month and Year of Manufacture
- Cable length

The sequential number of the cable length shall be marked on the outer sheath of the cable at an interval of 1meter ± 1%

ORDER INFOMATION

PRODUCT	PART NUMBER
Outdoor Cable, Drop Wire, with Armored, SM 9/125um 4 Core	F-SL-DWA9-04
Outdoor Cable, Drop Wire, with Armored, SM 9/125um 6 Core	F-SL-DWA9-06
Outdoor Cable, Drop Wire, with Armored, SM 9/125um 12 Core	F-SL-DWA9-12