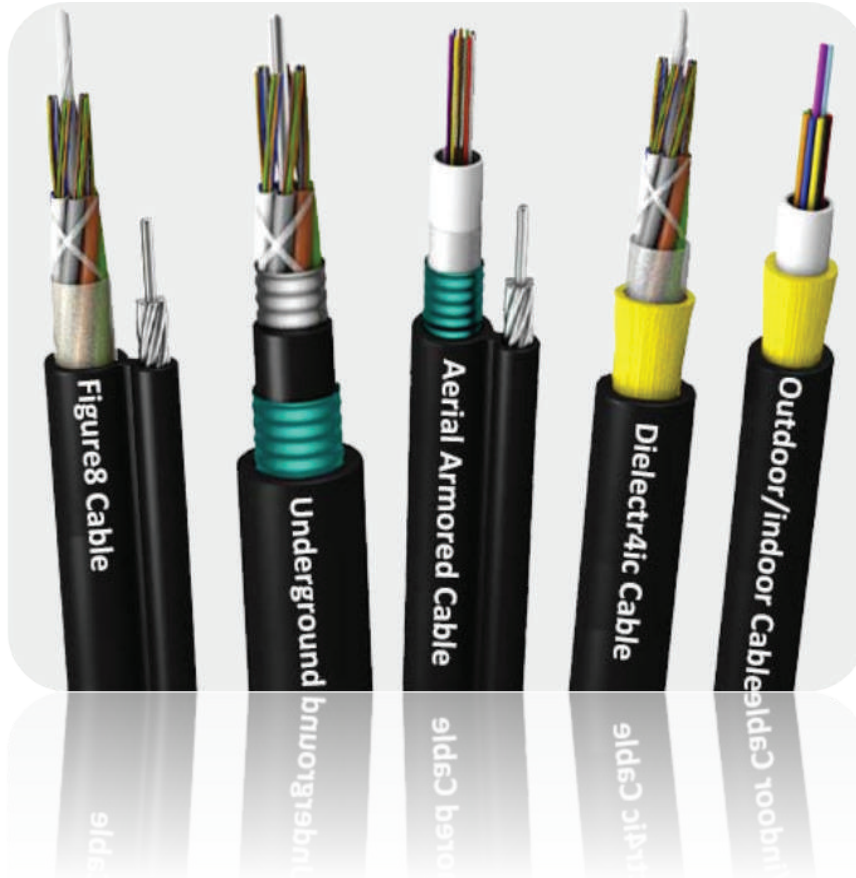




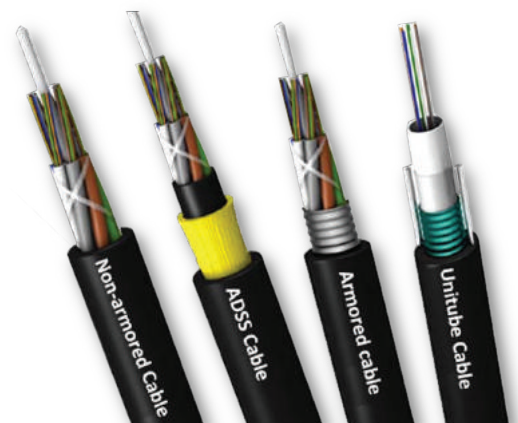
Setting the Standards

OXIN



Fiber Optic Cable

Catalogue



About Oxin Group

Oxin is a leading provider of fiber optic connectivity products used in data communications and Telecommunication networks.

The Company designs, develops, manufactures and sells fiber optic cabling, connectivity, management and systems solutions. It offers a broad range of products directly and through distributors, installers and OEM partners.

Oxin's growth has been founded on quality products, rapid response and excellent customer service. The Company is ISO9001:2000 approved and provides products conformant to international standards. Oxin is dedicated to value and continuous improvement of all its products and services. With headquarters in Paris, Oxin has manufacturing activities in the France, China and US operations. The Company has both volume and quick response manufacturing capabilities and is able to support the global logistics requirements of its customers. Oxin provides customised and customer branded products for OEM customers.

Oxin products are available directly from Oxin or from our worldwide distribution partners.



Setting the Standards

The Oxin fiber optic cable range includes simplex, duplex and flat ribbon patchcords, tight buffered, single loose tube and multi-loose tube distribution cables for internal and external applications as well as many variations of armoured, aerial, rodent resistant and water blocked cables.

The Oxin range has the solution for almost any application and can offer a cut to length service for specific fiber optic cables.

Please call the sales team for more information.



France Warehouse Facility



Cut to Length



Wide Range Available



OXIN USA ●

OXIN France ●

● OXIN China

Technical References

Cable Jacket Classification

Poly Vinyl Chloride (PVC) Cable

Cables with Poly Vinyl Chloride (PVC) jacket are the most commonly used and are often referred to as general purpose cables. These types of cables are intended for installations with no particular fire safety code requirements. In a fire, PVC-coated wires can form HCL fumes; the chlorine serves to scavenge free radicals and is the source of the material's fire retardance. While HCL fumes can also pose a health hazard in their own right, HCL breaks down on surfaces. Particularly in areas where the air is cool enough to breathe, and is not available for inhalation.

High Density Polyethylene (HDPE) Cable

HDPE is the high density version of PE plastic. It is harder, stronger and a little heavier than LDPE, but less ductile. The use of UV-stabiliser (carbon black) improves its weather resistance but turns it black. HDPE is also more opaque and it can withstand rather higher temperatures (120°C for short periods, 110°C continuously). HDPE has many advantages: chemical and corrosion-resistant, light-weight, low moisture absorption, non-staining, thermoforming performance, non-toxic and high tensile strength.

Fire Retardant Polyvinylchloride (FR-PVC) Cable

FR-PVC insulation has better fire retardant properties than normal PVC. It has significant advantages in terms of lower acid emissions and smoke generation. The amount of chlorine in the flame-retardant PVC (FRPVC) jacket cable is significantly higher (5%) than the conventional PVC jacket cable. FRPVC has good electrical insulation properties below 100°C.

Low Smoke ZeroHalogen (LSZH) Cable

Cables with LSZH jacket are intended for applications where both low smoke and low corrosive gases are needed. Used in shipboard applications and computer networking rooms where toxic or acidic smoke and fumes can injure people and/or equipment. Examples of Halogens include Fluorine, Chlorine, Bromine, and Iodine. These materials when burned produce acidic smoke that can harm people and computer equipment. These cables will self extinguish but cannot pass UL-910 or UL-1666 for a plenum or riser rating. However, LSZH cables have not been specified by NEC for use in installations in the US, these cables are used primarily in Europe.

General Purpose (CM, CMG, CMX) Cable

Communications cable used for general purpose. Intended for general use within buildings in accordance with the NEC Article 800.53(E)(1). These cables do not spread flame to the top of a tray in the Vertical-Tray Flame Test. As a general rule, CM and CMG cables are suitable for installation in cable trays and other non-plenum, non-riser areas. These cables will burn and partially self extinguish. Often these cables are used for workstation cables and patch cords. These cables comply with UL-1581 testing.

Riser (CMR) Cable

Cable that is suitable for use in a riser application. In commercial buildings, a riser is space used by telecommunications infrastructure, connecting from one floor to another. Defined for usage in vertical tray applications such as cable runs between floors through cable risers or in elevator shafts in accordance with Section 800.53(B) of NEC. These cables must pass the cable in a vertical burn test. These cables comply with UL-1666.

Plenum (CMR) Cable

Cables with plenum rated jackets are intended for installations where cables are routed through an air handling conduit, often called a plenum. Plenum cables must self extinguish and not reignite. They also produce less smoke than traditional PVC cables. The smoke and fumes are toxic.

This requirement is usually imposed by fire safety codes and is related to the stringent burn test that this type of cable must meet. These cables comply with NFPA-262 and UL-910.

Polyethylene (PE) Cable

PE is a semi-crystal thermoplastic material and one of the most commonly used plastics. It is generally ductile, flexible and has low strength. There are two basic families: LDPE (Low Density Polyethylene), and HDPE (High Density Polyethylene).

Technical References

Cable Armour

Metallic Armour

Metallic armour provides a tough protective covering for wires and cables. The type, thickness, and kind of metal used to make the armour depend on three factors:

1. The use of the conductors
2. the environment where the conductors are to be used
3. the amount of rough treatment that is expected

Steel Tape Armour

Steel tape covering is wrapped around the cable and then covered with a serving of jute. There are two types of steel tape armour: interlocking armour and flat-band armour.

Interlocked Armour

Interlocking Armour is applied by wrapping the tape around the cable so that each turn is overlapped by the next and is locked in place. Galvanized steel or aluminium are the typical materials used for interlocking armour. However, other metals are sometimes used for specialized applications. The metals are sometimes used for specialized applications. The interlocking construction protects the cable from damage during and after installation. The armour may be applied directly over the insulation for over an inner jacket. Materials and construction generally comply with the requirements of UL, CSA and/or ICEA.

Flat-Band Armour

Flat-Band armour consists of two layers of steel tape. The first layer is wrapped around the cable but is not overlapped. The second layer is then wrapped around the cable covering the area that was not covered by the first layer.

Continuously Corrugated and Welded (CCW)

CCW armour is made by forming an aluminium strip into a circle along its length and then welding it at the seam. This smooth tube is then rolled or crimped to form ridges to prevent kinking while bending. This type of sheath provides an impervious seal against moisture and other chemicals as well as physical protection.

Wire Armour

Wire armour is a layer of wound metal wire wrapped around the cable. Wire armour is usually made of galvanized steel and can be used with the sheath as a buried cable where moisture is a concern or without the sheath

Wire Braid Armour

Wire-braid armour also known as basketweave armour, is used when light and flexible protection is needed. Wire braid is constructed much like fibrous braid. The metal is woven directly over the cable as the outer covering. The metal used in this braid is galvanized steel, bronze, copper or aluminium. Wire-braid armour is mainly used for shipboards, because it provides the mechanical protection of an armoured cable, yet is much lighter in weight than other types of armoured coverings. Materials and construction generally comply with the requirements of IEEE Standard 45 and various military specifications.

Lead Sheath

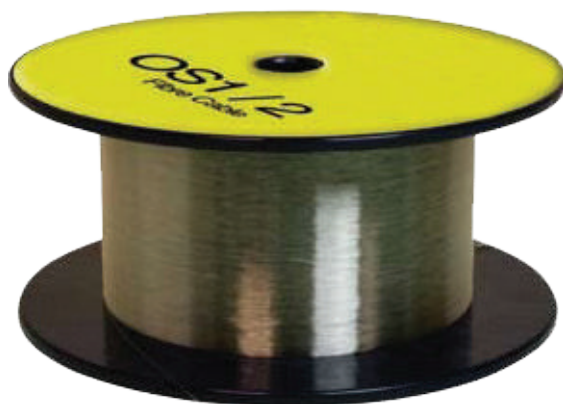
For underground installations in conduits, ducts and raceways, a lead sheath may be used to protect insulated cables from moisture. In locations where corrosive conditions may be encountered, a jacket over the lead is recommended. Commercially pure lead is used on some lead-covered cables, which conforms to the requirements of ASTM B29 and ICEA S-19-81. Lead alloy sheaths, containing added tin or antimony are used where a harder sheath is desired or where vibration may be encountered.

Wire Serve

Wire serve armour is most commonly found on submarine cable because it provides excellent physical protection from boat anchors, sharp rocks, sharks, etc. this type of armour normally consists of 1/8 to 1/4 inch diameter solid steel wires which are laid helically around the circumference of the cable. Tar or asphalt (bitumen) is placed over and around the steel wires to reduce the effects of corrosion.

OS1 ITU-T G.652B 9/125

Singlemode Optical Fiber



Description

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Features and Benefits

1. WP Single mode optical fiber with doped silica core and silica cladding. Dual layer UV cured acrylic resin primary coatings
2. Dry water blocking technology within the tubes and under the cables' jacket
3. Full dielectric construction, no grounding required
4. Fiber and sub-units are color coded for easy identification
5. Length markings in meters for easy determination of cable length
6. Small diameter and bend radius facilitate installation in tight spaces
7. Fibers grouped into sets of 12 for maximum density
8. Available in fiber counts up to 144 fibers
9. Available in colored jackets for indoor only installations
10. Available in tight buffered, loose tube and ribbon cable
11. Operational in the entire 1260nm to 1625nm wavelength range
12. Operational in the 1360nm to 1460nm wavelength extended band
13. Low chromatic dispersion in the 1310nm operating window
14. Low attenuation at the 1383nm water peak region

Applications

- Supports 1Gb/s up to an indicative 5km in data networks
- Supports high speed multi-channel video, data and voice services in metropolitan and access networks ATM, SONET and WDM

Certification and Compliance

ISO/IEC 11801 OS-1	Information technology - Generic cabling for customer premises
IEC 60793-2-50 type B1.1	Sectional specification for category B1 single mode fibers
Telcordia GR-20-CORE	Generic Requirements for Optical Fiber and Optical Fiber Cable
ITU-T G.652B	Characteristics of a single-mode optical fiber and cable
ANSI/TIA/EIA-492CAAA	Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers

OS1 ITU-T G.652B 9/125

Singlemode Optical Fiber

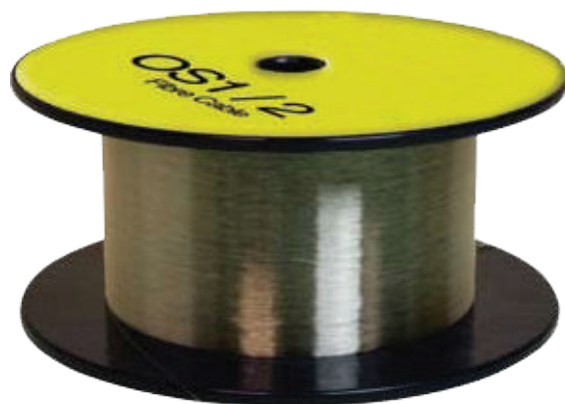
	Parameter		Value
Geometrical Characteristics	Mode field diameter	@ 1310 nm	9.2 ± 0.4 μm
		@ 1550 nm	10.4 ± 0.8 μm
	Cladding diameter		125 ± 1.0 μm
	Cladding non circularity		≤ 0.7 %
	Coating non circularity		≤ 6.0 %
	Core/cladding concentricity error		≤ 0.5 μm
	Coating/cladding concentricity error		≤ 12 μm
	External diameter (uncoloured)		242 ± 8 μm
	Fiber curl radius		≥ 4 m
	Parameter		Value
Transmission Characteristics	Maximum attenuation fiber	@ 1310 nm	≤ 0.35 dB/km
		@ 1550 nm	≤ 0.21 dB/km
		@ 1625 nm	≤ 0.24 dB/km
	Maximum attenuation cabled	@ 1310 nm#	≤ 0.38 dB/km
		@ 1550 nm#	≤ 0.25 dB/km
		@ 1625 nm [□]	≤ 0.28 dB/km
	Typical attenuation cabled	@ 1310 nm#	≤ 0.34 dB/km
		@ 1550 nm#	≤ 0.19 dB/km
		@ 1625 nm [□]	≤ 0.25 dB/km
	Chromatic dispersion	@ 1310 nm	≤ 3.00 ps/(nm·km)
		@ 1550 nm	≤ 18.00 ps/(nm·km)
		@ 1625 nm	≤ 22.00 ps/(nm·km)
	Cabled cut off wavelength λ _{ccf}		≤ 1260 nm
	Zero dispersion wavelength λ _o		≥ 1300 nm
			≤ 1322 nm
Zero dispersion slope S _o		≤ 0.090 ps/(nm ² ·km)	
Numerical aperture (NA)		0.14 ± 0.015	
Polarization mode dispersion (PMD)		≤ 0.2 ps/√km	
Group refractive index	@ 1310 nm	1.4660-1.4677	
	@ 1550 nm	1.4670-1.4682	
	@ 1625 nm	1.4670-1.4682	
Fiber irregularities point and whole length	@ 1310 nm	≤ 0.05 dB	
	@ 1550 nm		
	Parameter		Value
Environmental Characteristics	Fiber temperature dependence -60°C to		≤ 0.1 dB/km
	Fiber temperature and humidity cycling -10°C to +85°C, 98% R.H.		≤ 0.1 dB/km
	Fiber water soak dependence 23°C for 30		≤ 0.2 dB/km
	Parameter		Value
Mechanical Characteristics	Proof test fiber strain for 1 second equivalent		1 %
	Bending dependence 100 turns 75 mm diameter 850 nm & 1300 nm		≤ 0.5 dB
	Typical mean coating strip force		1.0 to 3.0 N

Standard OTDR testing wavelengths

□ Testing at 1625nm on request

OS2 ITU-T G.652D 9/125

Singlemode Optical Fiber



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- Supports 1Gb/s up to an indicative 5km in data networks
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Certification and Compliance

ISO/IEC 11801 OS-2	Information technology - Generic cabling for customer premises
IEC 60793-2-50 type B1.3	Sectional specification for category B1 single mode fibers
Telcordia GR-20-CORE	Generic Requirements for Optical Fiber and Optical Fiber Cable
ITU-T G.652D	Characteristics of Low Water Peak (LWP) Single Mode Optical Fiber
ANSI/TIA/EIA-492CAAB	Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak

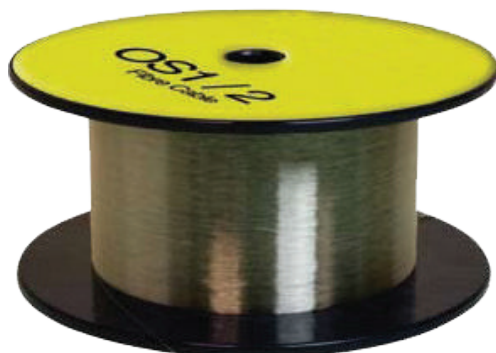
OS2 ITU-T G.652D 9/125

Singlemode Optical Fiber

	Parameter		Value
Geometrical Characteristics	Mode field diameter	@2 1310 nm	9.2 ± 0.6 μm
		@ 1550 nm	10.1 ± 0.8 μm
	Cladding diameter		125 ± 0.9 μm
	Cladding non circularity		≤ 0.7 %
	Coating non circularity		≤ 6.0 %
	Core/cladding concentricity error		≤ 0.5 μm
	Coating/cladding concentricity error		≤ 12 μm
	External diameter (uncoloured)		242 ± 8 μm
	Fiber curl radius		≥ 4 m
	Parameter		Value
Transmission Characteristics	Maximum attenuation fiber	@ 1310 nm	≤ 0.35 dB/km
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		@ 1625 nm	≤ 22.00 ps/(nm·km)
	Cabled cut off wavelength λ_{ccf}		≤ 1260 nm
	Zero dispersion wavelength λ_0		≥ 1300 nm
			≤ 1322 nm
Zero dispersion slope S_0		≤ 0.090 ps/(nm ² ·km)	
Numerical aperture (NA)		0.14 ± 0.015	
Polarization mode dispersion (PMD)		≤ 0.2 ps/√km	
Group refractive index	@ 1310 nm	1.4660-1.4677	
	@ 1550 nm	1.4670-1.4682	
	@ 1625 nm	1.4670-1.4682	
Fiber irregularities point and whole length	@ 1310 nm	≤ 0.05 dB	
	@ 1550 nm		
	Parameter		Value
Environmental Characteristics	Fiber temperature dependence -60°C to		≤ 0.1 dB/km
	Fiber temperature and humidity cycling -10°C to +85°C, 98% R.H.		≤ 0.1 dB/km
	Fiber water soak dependence 23°C for 30		≤ 0.2 dB/km
	Parameter		Value
Mechanical Characteristics	Proof test fiber strain for 1 second equivalent		1 %
	Bending dependence 100 turns 75 mm diameter 850 nm & 1300 nm		≤ 0.5 dB
	Typical mean coating strip force		1.0 to 3.0 N

Standard OTDR testing wavelengths
[□] Testing at 1625nm on request

OS2 ITU-T G.655 NZDSF Singlemode Optical Fiber



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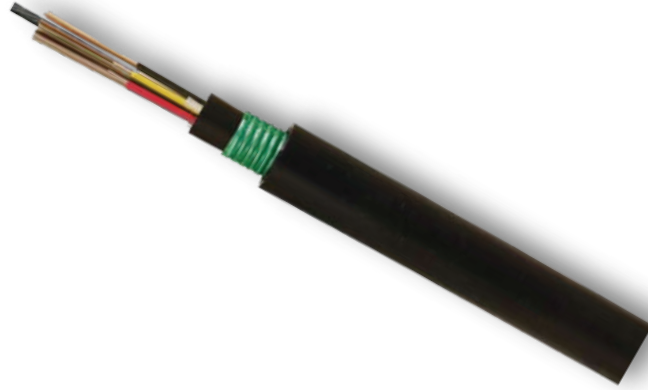
Certification and Compliance

ISO/IEC 11801 OS-2	Information technology - Generic cabling for customer
IEC 60793-2-50 type B4	Sectional specification for category B4 single mode fibers
Telcordia GR-20-CORE	Generic Requirements for Optical Fiber and Optical Fiber
ITU-T G.655	Characteristics of a non-zero dispersion-shifted single-mode optical fiber and cable
TIA-492E000 / TIA-492EA00	Blank Detail Specification for Class IVd Nonzero-Dispersion Single-Mode Optical Fiber for the 1550 nm Window

OS2 ITU-T G.655 NZDSF Singlemode Optical Fiber

	Parameter		Value
Geometrical Characteristics	Mode field diameter	@ 1310 nm	8.6 ± 0.6 μm
		@ 1550 nm	9.5 ± 0.8 μm
	Cladding diameter		125 ± 0.7 μm
	Cladding non circularity		≤ 1 %
	Coating diameter		245 ± 7 μm
	Coating non circularity		≤ 6.0 %
	Core/cladding concentricity error		≤ 0.6 μm
	Coating/cladding concentricity error		≤ 12.0 μm
	Fiber curl radius		≥ 4 m
	Parameter		Value
Transmission Characteristics	Attenuation	@ 1550 nm	≤ 0.22 dB/km
		@ 1625 nm	≤ 0.24 dB/km
	Attenuation vs. wavelength Max. α difference		≤ 0.02 dB/km
	Zero dispersion wavelength λ ₀		≤ 1520 nm
	Dispersion slope @ 1550 nm		≤ 0.084 ps/(nm ² ·km)
	Typical dispersion slope @ 1550 nm		0.75 ps/(nm ² ·km)
	PMD		
	Maximum Individual Fiber		≤ 0.2 ps/√km
	Link Design Value (M=20, Q=%0.01)		≤ 0.08 ps/√km
	Typical Value		0.04 ps/√km
	Cabled cut off wavelength λ _{ccf}		≤ 1450 nm
	Mode field diameter (MFD) @ 1550 nm		9.1 ~ 10.1 μm
	Effective group index of refraction (N _{eff})		1.469
	Point discontinuities @ 1550 nm		≤ 0.05 dB
	Parameter		Value
Environmental Characteristics	Fiber temperature dependence -60°C to +85°C		≤ 0.1 dB/km
	Fiber temperature and humidity cycling -10°C to +85°C, 90% R.H.		≤ 0.1 dB/km
	Fiber water soak dependence 23°C for 30 days		≤ 0.2 dB/km
	Damp heat dependence +85°C, %85 R.H. for 30 days		≤ 0.05 dB/km
	Dry heat dependence +85°C		≤ 0.05 dB/km
		Parameter	
Mechanical Characteristics	Proof test		1 %
	Bending dependence 100turns 60mm diameter @1625nm		≤ 0.05 dB
	Bending dependence 100turns 50mm diameter @1310nm & 1550nm		≤ 0.05 dB
	Bending dependence 1turn 32mm diameter @1550nm		≤ 0.5 dB

Multi Loose Tube Double Jacket Fiber Optic Cable



Description

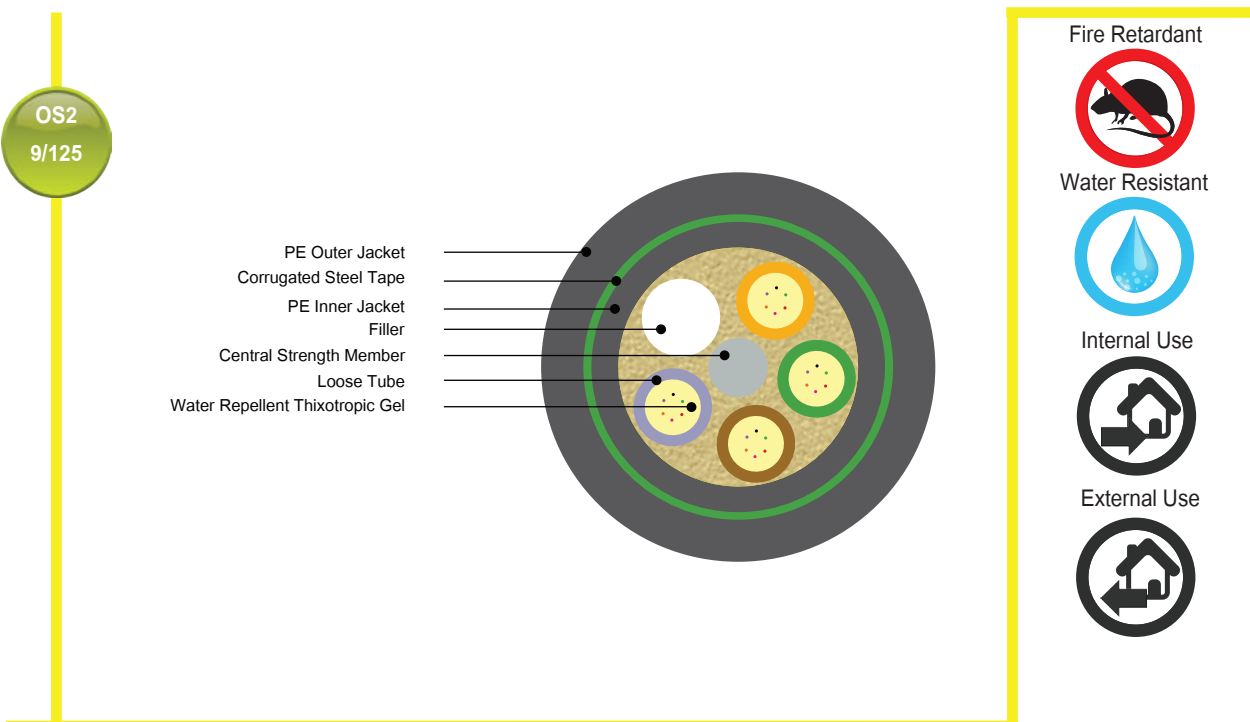
The multi loose tube cable construction consists of up to 12 elements and a maximum of 144 , 250µm optical fibers in 12 fiber gel filled loose tubes with fillers where appropriate, SZ stranded around a fiber reinforced plastic (FRP) central strength member with waterswellable threads and waterswellable tape. Helically applied water blocking e-glass non-metallic strength members with ripcord and PE inner jacket, corrugated steel tape (CST) armoring and black high density polyethylene (HDPE) final jacket with ripcord.

Features and Benefits

1. Choice of fiber type
2. Colour coded fibers
3. High water resistance
4. Two PE jackets

Applications

- Suitable for external applications in ducts or for direct burial



Multi Loose Tube Double Jacket Fiber Optic Cable

OXIN - AA B C

Cable type	Core count		Tube count	
	1	2	1	2
22	1	2	1	2
SM	4core	6core	One	Two
	3	4	4	6
	8core	12core	Four	Six
	5	6	8	0
	16core	24core	Eight	Twelve
	7	8		
	32core	48core		
	9	0		
	72core	144core		

Oxin Fiber Optic Cable
Part Number Builder

Most Commonly Used Cables

Multi Loose Tube D. Jacket Cable Part Number	Core	SM
		12 core 2x6
	24 core 2x12	OXIN-2262
	24 core 4x6	OXIN-2264
	48 core 4x12	OXIN-2284
	48 core 8x6	OXIN-2288

Technical Characteristics	Parameter	unit	24-48 core	72 core	144 core
	Outer Diameter	mm		14.0 ± 0.5	14.6 ± 0.5
Weight	kg/km		210	219	343
Max. Load (installation)	N		1500	1500	1500
Max. Load (installed)	N		600	600	600
Min. Bend Radius	mm		280	290	380
Min. Bend Radius (installed)	mm		140	145	190
Operating Temp.	°C		-40 ~ +70	-40 ~ +70	-40 ~ +70
Storage Temp.	°C		-20 ~ +60	-20 ~ +60	-20 ~ +60
Installation Temp.	°C		-20 ~ +60	-20 ~ +60	-20 ~ +60
Crush Resistance	N/(100mm)		4000	4000	4000



Setting the Standards

Oxin Group S.A.

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