



Biological Protection Optical Fiber Cable

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- + OEM customized production according to your requirements.
- + Standardized products and services according to our own brand.



Biological Protection (Anti-Rodent, Anti-Termite, Anti-Birds) Optical Fiber Cable

Introduction:

ZION provides optical cables that resistant to biological hazards caused by rodents,termites and birds,etc. after installation.Optical cables are often damaged by rodents.Termites not only bite,but also release formic acid to the cables.We design methods include physical(include metallic and glass fiber armor and nylon sheath) and chemical methods(Spicy additives) agsinst biological hazards

Features:

- Accurate process control ensuring good mechanical and temperature performances
- All-dielectric design,applicable to lightning-prone areas
- Small size and light weight
- Glass fibre yarns providing certain anti-rodent performance
- Nylon outer sheath with high hardness providing certain anti-termite performance

Main Methods:

Physical methods	Metallic armors	Stainless steel tape	Rodent and Birds
		Steel wires	
	Non-Metallic armors	FRP	Rodent and Birds
		Glass Yarn	Rodent
	Nylon sheath	Nylon outer sheath	Termite
Chemical methods	Chemical additives	Spicy additives	Rodent and Termite

Product Series:

Uni-Tube	GYGZY04	Glass fibre tape+Nylon sheath	Rodent,Termite,Lightning
	GYTY53	Stainless steel tape+wire	Rodent,Birds
	GYXTS	Stainless steel tape+wire	Rodent,Birds
	GYXTY	Stainless steel wire	Rodent,Birds
	GYFXY	FRP Armor	Rodent,Birds,Lightning
Stranded loose tube	GYFTA53	Aluminum tape+steel tape	Rodent
	GYFTA54	steel tape+nylon sheath	Rodent,Termite
	GYFTY83(FS)	Flat FRP tape	Rodent
	GYFTY73	FRP tape armor	Rodent,Birds,Lightning
	GYFTS	Stainless steel tape	Rodent,Birds
Special	GJFKH	Stainless Steel Flexible Hose	Indoor protection from Rodent



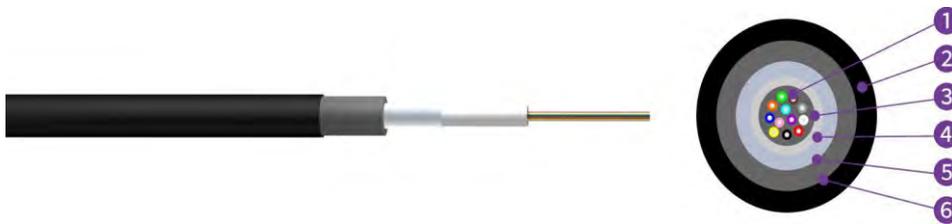
GYGXZY04

Anti-Rodent Anti-Termite Glass Fibre Tape Nylon Sheath Uni-tube Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- All-dielectric design, applicable to lightning-prone areas
- Small size and light weight
- Glass fibre yarns providing certain anti-rodent performance
- Nylon outer sheath with high hardness providing certain anti-termite performance

Cross Section:



1, Fibers 2, PA Outer Sheath 3, Tube Filling Compound 4, Loose Tube 5, Glass fiber Yarn 6, LSZH Inner sheath

Technical Characteristics:

Type	Diameter of Uni-tube	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYGXZY04 -02-12Xn	2.8	7.5±0.1	50	600/1500	300/1000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -20°C ~70°C

Delivery Length:

Standard length: 2000m; Other length available



GYXTY53 Anti-Rodent Anti-Birds Steel Tape Uni-tube Double Sheath Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance and flexibility
- Steel wire and steel tape armors providing excellent anti-rodent performance

Cross Section:



1, Fibers 2, Tube Filling Compound 3, Loose Tube 4, PE Inner sheath 5, Steel wire 6, PSP 7, Cabling compound 8, PE Sheath

Technical Characteristics:

Type	Diameter of Uni-tube	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYXTY53 -02-12Xn	2.5	10.9±0.1(2.0Thickness)	144	600/1500	1000/3000
GYXTY53 -14-18Xn	2.8	11.2±0.1(2.0Thickness)	155	1000/3000	1000/3000
GYXTY53 -20-24Xn	3.2	11.6±0.1(2.0Thickness)	167	1000/3000	1000/3000
GYXTY53 -26-30Xn	3.5	11.9±0.1(2.0Thickness)	178	1000/3000	1000/3000
GYXTY53 -32-36Xn	3.8	12.2±0.1(2.0Thickness)	186	1000/3000	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length:2000m;Other length available



GYXTS

Anti-Rodent Anti-Birds Steel Tape Uni-tube Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance and flexibility
- Steel wire and steel tape armors providing excellent anti-rodent performance

Cross Section:



1, Fibers 2, Tube Filling Compound 3, Loose Tube 4, Steel wire 5, PSP 6, Cabling compound 7, PE Sheath

Technical Characteristics:

Type	Diameter of Uni-tube	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYXTS -02-12Xn	2.5	8.8±0.1(2.0Thickness)	108	600/1500	1000/3000
GYXTS -14-18Xn	2.8	9.2±0.1(2.0Thickness)	116	1000/3000	1000/3000
GYXTS -20-24Xn	3.2	9.6±0.1(2.0Thickness)	126	1000/3000	1000/3000
GYXTS -26-30Xn	3.5	9.8±0.1(2.0Thickness)	137	1000/3000	1000/3000
GYXTS -32-36Xn	3.8	10.1±0.1(2.0Thickness)	142	1000/3000	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length:2000m;Other length available



GYXTY

Anti-Rodent Anti-Birds Steel Wires Uni-tube Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance and flexibility
- Stainless Steel wire armors providing excellent anti-rodent performance

Cross Section:



1, Fibers 2, Tube Filling Compound 3, Loose Tube 4, Steel wire 5, Cabling compound 6, PE Sheath

Technical Characteristics:

Type	Diameter of Uni-tube	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYXTY -02-12Xn	2.5	7.7±0.1(2.0Thickness)	76	600/1500	1000/3000
GYXTY -14-18Xn	2.8	8.0±0.1(2.0Thickness)	84	1000/3000	1000/3000
GYXTY -20-24Xn	3.2	8.4±0.1(2.0Thickness)	93	1000/3000	1000/3000
GYXTY -26-30Xn	3.5	8.7±0.1(2.0Thickness)	101	1000/3000	1000/3000
GYXTY -32-36Xn	3.8	9.0±0.1(2.0Thickness)	107	1000/3000	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length: 2000m; Other length available



GYFXTY

Anti-Rodent Anti-Birds FRP Wires Uni-tube Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance and flexibility
- Non-Metallic FRP wires armors providing excellent anti-rodent performance

Cross Section:



1, Fibers 2, Tube Filling Compound 3, Loose Tube 4, FRP wire 5, Water Blocking Yarn 6, PE Sheath

Technical Characteristics:

Type	Diameter of Uni-tube	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYFXTY -02-12Xn	2.4	7.6±0.1(2.0Thickness)	49	600/1500	1000/2000
GYFXTY -14-24Xn	3	8.2±0.1(2.0Thickness)	64	600/1500	1000/2000
GYFXTY -36-26Xn	3.6	8.8±0.1(2.0Thickness)	75	600/1500	1000/2000
GYFXTY -38-48Xn	4	9.2±0.1(2.0Thickness)	81	600/1500	1000/2000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length: 2000m; Other length available

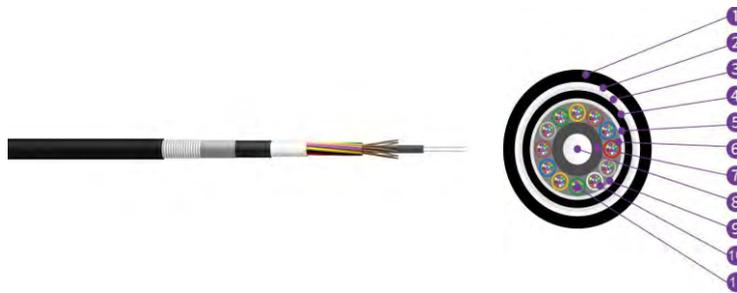


GYFTA53 Anti-Rodent APL Tape Double Sheath Stranded Loose tube Fiber Optic Cable

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance and flexibility
- Metallic armors providing excellent anti-rodent performance

Cross Section:



1, PE Sheath 2, Steel tape 3, Tube Filling Compound 4, PE Inner Sheath 5, APL 6, Loose Tube 7, PE Layer
8, Strength Member 9, Cable Compound 10, Fibers 11, Loose Tube

Technical Characteristics:

Type	Units	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYFTA53 -02-36Xn	6	13.0±0.1	199	1500/3000	1000/3000
GYFTA53 -38-72Xn	6	15.0±0.1	244	1500/3000	1000/3000
GYFTA53 -74-96Xn	8	16.8±0.1	290	1500/3000	1000/3000
GYFTA53 -98-120Xn	10	17.8±0.1	333	1500/3000	1000/3000
GYFTA53 -122-144Xn	12	20.0±0.1	389	1500/3000	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length:2000m;Other length available



GYFTA54

Anti-Rodent APL Tape Double Nylon Sheath Stranded Loose tube Fiber Optic Cable

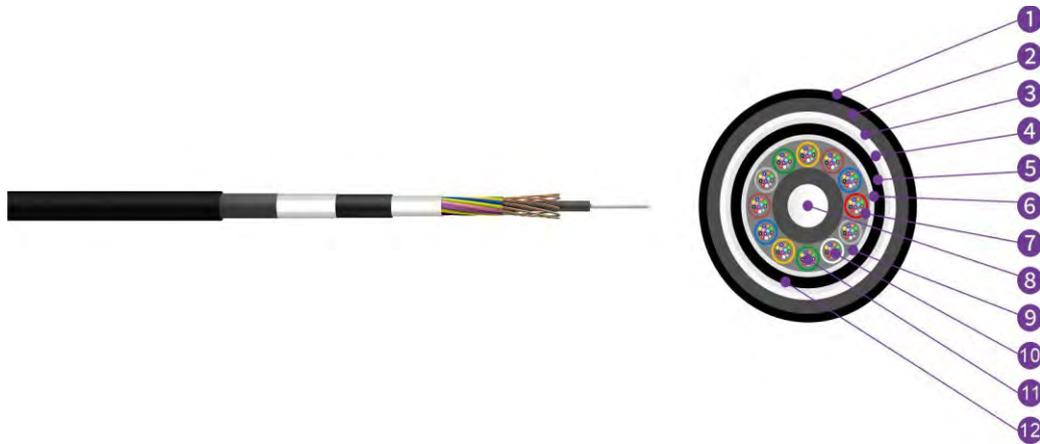
Introduction:

GYFTA54 is a kind of outdoor communication optical cable, which consists of a non-metallic central strength member, stranded loose tubes, a laminated aluminum tape armor, a PE inner sheath, a stainless steel tape armor, a PE middle sheath and a nylon outer sheath. Single-mode fibres are housed in loose tubes that are made of high-modulus plastic and filled with tube filling compound. The tubes are stranded around the central member to form a cable core. The core is filled with cable filling compound and armored with laminated aluminum tape. Then a PE inner sheath is extruded and armored with stainless steel tape. Finally, a middle PE sheath and a nylon outer sheath is extruded.

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and relatively high strength
- Tube filling compound providing key protection for fibres
- Excellent crush resistance
- Metallic armors providing good anti-rodent performance
- Nylon outer sheath with high hardness providing certain anti-termite performance
- Applicable to duct and buried installations

Cross Section:



- 1, PA Outer Sheath 2, PE Middle Sheath 3, Stainless Steel Tape 4, Cable Filling Compound 5, PE Inner Sheath
6, APL 7, Loose Tube 8, Strength Member 9, Cable Filling Compound 10, Fibre 11, Tube Filling Compound
12, PE Layer



Technical Characteristics:

Type	Units	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYFTA54 -24Xn	6	14.4	225	900/2700	1000/3000
GYFTA54 -48Xn	6	15.0±0.1	250	900/2700	1000/3000
GYFTA54 -72Xn	6	15.0±0.1	250	900/2700	1000/3000
GYFTA54 -96Xn	8	16.8±0.1	300	900/2700	1000/3000
GYFTA54 -144Xn	12	20.0±0.1	370	900/2700	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget. Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C~70°C

Delivery Length:

Standard length:2000m;Other length available



GYFTY83(FS)

Anti-Rodent Flat FRP Tape Stranded Loose tube Fiber Optic Cable

Introduction:

ZION provides optical cables that resistant to biological hazards caused by rodents,termites and birds,etc. after installation.Optical cables are often damaged by rodents.Termites not only bite,but also release formic acid to the cables.We design methods include physical(include metallic and glass fiber armor and nylon sheath) and chemical methods(Spicy additives) agsinst biological hazards GYFTY83(FS) is designed with physical and chemical anti-rodent methods. Single-mode/multimode fibres are housed in loose tubes that are made of high-modulus plastic. The tubes are stranded around a central strength member to form a cable core. The core is filled with cable filling compound. Then an inner PE sheath is extruded and armored with flat FRP.Finally,an anti-rodent PE middle sheath and a PE outer sheath is extruded.

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and relatively high strength
- Tube illing compound providing key protection for fibres
- Combination of physical and chemical anti-rodent methods
- Flat FRP armor providing the physical anti-rodent performance
- Anti-rodent sheath providing the chemical anti-rodent performance,which effectively delays the diffusion of anti-rodent additives to protect working environment and construction safety
- All-dielectric design, applicable to lightning-prone areas
- Applicable to aerial and duct installations with anti-rodent and anti-lightning requirements

Cross Section:



1,PE Outer Sheath 2,Flat FRP 3,PE Inner Sheath 4,Loose Tube 5,Strength Member
6,Cable Filling Compound 7,Fibre 8,Tube Filling Compound 9,Anti-rodent Middle Sheath

Technical Characteristics:

Type	Units	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYFTY83 -02-72Xn	6	14.0±0.1	190	1500/4500	1000/3000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget.Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length:2000m;Other length availabe



GYFTY73

Anti-Rodent Anti Bird FRP Tape Double Sheath Stranded Loose tube Fiber Optic Cable

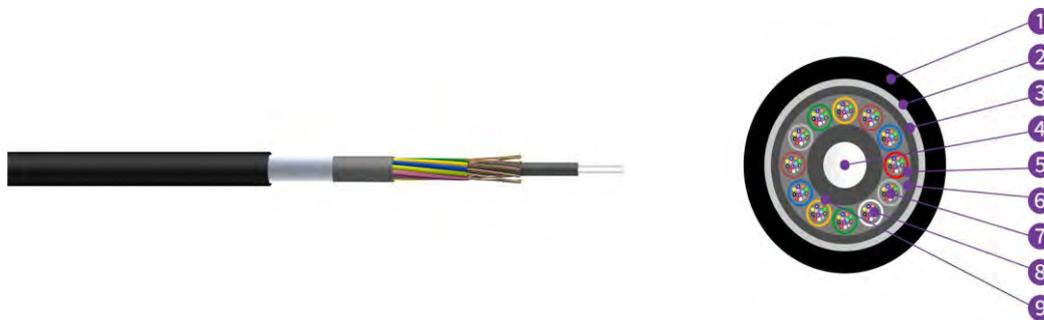
Introduction:

ZION provides optical cables that resistant to biological hazards caused by rodents,termites and birds,etc. after installation.Optical cables are often damaged by rodents.Termites not only bite,but also release formic acid to the cables.We design methods include physical(include metallic and glass fiber armor and nylon sheath) and chemical methods(Spicy additives) agsinst biological hazards. GYFTY73 is designed with physical anti-rodent measure. Single-mode/multimode fibres are housed in loose tubes that are made of high-modulus plastic. The tubes are stranded around a central strength member to form a cable core. The core is filled with cable filling compound. Then an inner PE sheath is extruded and armored with FRP tape. Finally, a PE outer sheath is extruded.

Features:

- Physical anti-rodent method,green and environment-friendly
- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and relatively high strength
- Tube filling compound providing key protection for fibres
- FRP tape armor providing good anti-rodent performance All-dielectric design, applicable to lightning-prone areas
- Applicable to aerial and duct installations with anti-rodent and anti-lightningrequirements

Cross Section:



1,PE Outer Sheath 2,FRP Tape 3,PE Inner Sheath 4,Strength Member 5,Loose Tube
6,Cable Filling Compound 7,Fibre 8,Tube Filling Compound 9,PE Layer

Technical Characteristics:

Type	Units	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYFTY73 -02-72Xn	6	13.2±0.1	132	1000/3000	300/1000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget.Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C ~70°C

Delivery Length:

Standard length:2000m;Other length available



GYFTS

Anti-Rodent Anti Bird Steel Tape Stranded Loose tube Fiber Optic Cable

Introduction:

ZION provides optical cables that resistant to biological hazards caused by rodents,termites and birds,etc. after installation.Optical cables are often damaged by rodents.Termites not only bite,but also release formic acid to the cables.We design methods include physical(include metallic and glass fiber armor and nylon sheath) and chemical methods(Spicy additives) agsinst biological hazards GYKTSis a kind of outdoor communication optical cable, which consists of a central metallic strength member, stranded loose tubes,a stainless steel tape armor and a PE outer sheath.Single-mode fibres are housed in loose tubes that are made of high-modulus plastic and filled with tube filling compound. The tubes are stranded around the central strength member to form a cable core. The core is filled with cable filling compound and armored with stainless steel tape. Then a PE outer sheath is extruded.

Features:

- Accurate process control ensuring good mechanical and temperature performances
- The material of loose tubes with good hydrolysis resistance and high strength
- Tube filling compound providing the key protection for fibres
- Excellent crush resistance
- Metallic armors providing excellent anti-rodent performance

Cross Section:



1,PE Sheath 2,Stainless Steel Tape 3,Cable Filling Compound 4,Fibre 5,Loose Tube 6,Tube Filling Compound
7,Central Strength Member



Technical Characteristics:

Type	Units	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GYKTS -02-30Xn	5	9.8±0.1	108	600/1500	1000/2000
GYKTS -32-36Xn	6	10.4±0.1	129	600/1500	1000/2000
GYKTS -38-60Xn	5	10.6±0.1	132	600/1500	1000/2000
GYKTS -62-72Xn	6	12.1±0.1	161	600/1500	1000/2000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget.Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C~70°C

Delivery Length:

Standard length:2000m;Other length availabe



GJFKH Indoor Anti-Rodent Steel Flexible Hose Fiber Optic Cable

Introduction:

ZION provides optical cables that resistant to biological hazards caused by rodents,termites and birds,etc. after installation.Optical cables are often damaged by rodents.Termites not only bite,but also release formic acid to the cables.We design methods include physical(include metallic and glass fiber armor and nylon sheath) and chemical methods(Spicy additives) agsinst biological hazards Tight buffered fibres are housed in a metallic hose made of stainless steel tape. The hose is wrapped with aramid yarns,then a LSZHouter sheath is extruded.The tight buffered fibres are made by extruding a buffer layer on the surface of optical fibres.

Features:

- All-dry design,green and environment-friendly
- Aramid yarns ensuring tensile strength and providing good protection fortight buffered fibres
- Metallic hose with good flexibility providing certain anti-rodent performance
- Outer sheath with flame-retardant performance, applicable to indoor installation
- Small size and light weight, easy for installation
- Applicable to indoor anti-rodent use

Cross Section:



1,LSZH Sheath 2,Aramid Yarn 3,Tight Buffered Fibre 4,Helical Steel Hose

Technical Characteristics:

Type	Fiber Diameter mm	Diameter mm	Weight (kg/km)	Tension(N) Long/short	Crush Resistance Long/short (N/100mm)
GJFKH -1Xn	0.9	3.0±0.1	18	100/200	3000/5000
GJFKH -2Xn	0.9	4.8±0.1	38	200/400	3000/5000
GJFKH -2Xn	0.6	3.0±0.1	24	100/200	3000/5000

Note: This specification provides a normative reference. Adjustable outer diameter to suit your budget.Contact us ASAP.

Environmental Characteristics:

Transport/storage temperature: -40°C~70°C

Delivery Length:

Standard length:2000m;Other length availabe

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