

光缆主导产品

- ◆ 2-144芯钢（铝）带纵包松套层绞式光缆
- ◆ 2-12芯中心管式光缆
- ◆ 夹带平行钢丝中心管式光缆
- ◆ 聚乙烯内护套钢带铠装聚乙烯外护套层绞式光缆
- ◆ 铝-聚乙烯内护套钢带铠装聚乙烯外护套层绞式光缆
- ◆ 非金属（阻燃）层绞式光缆
- ◆ 8字型自承式光缆
- ◆ 带状光缆
- ◆ 软光缆
- ◆ 全介质自承式光缆
- ◆ 光纤复合架空地线
- ◆ 海底光缆
- ◆ 水线光缆

Main Cable Optical Products

- ◆ 2-144 Steel Tape or Aluminum Tape Longitudinal strand Fiber
- ◆ Optic Cables with Loose Tube
2-12 Central Pipe-type Fiber Optic Cables
- ◆ Central Pipe-type Fiber Optic Cables Armored with steel Tape in Parallel
- ◆ Strand Optical Cable, Outer and Inner Sheathed with PE, Armored with Steel Tape
- ◆ Strand fiber optic cables armored with steel tape, inner sheathed with AL-polythene and outer sheathed with polythene
- ◆ Strand Fiber Optic Cables With Non-metal Fire-resistance
- ◆ Self-support Fiber Optic Cable in 8-shape
- ◆ Optical Fiber Ribbon Cable
- ◆ Flexible Optical Cable
- ◆ Self-supporting Fiber Optic Cables(ADSS)
- ◆ Optical Fiber Composite Overhead Ground Wire
- ◆ Submarine Cable
- ◆ Waterline Optical Cable

2-144芯钢（铝）带纵包松套层绞式光缆

2-144 steel tape or aluminum tape longitudinal strand fiber optic cables with loose tube

产品型号: GYTS GYTA

Product type: GYTS GYTA

产品结构: PBT光纤松套管 铜丝中心加强 缆芯内填充油膏 钢带或铝塑粘结护套
Product structure: PBT fiber loose tube, reinforced steel wire center, filling compound for cable, laminated al-plastic or steel-plastic sheath

敷设方式: 管道、架空
Installation method: tube, aerial

适用温度范围: -40℃ ~ +60℃
Apply temperature range: -40℃~+60℃

产品特点:
Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables of tension and temperature under the condition of tension and extreme temperature.
- 缆芯内充满油膏, 确保了纵向阻水效果。
Cable core filled ointment to ensure the effect of vertical water blocking.
- 松套管(填充绳)围绕中心加强件SZ层绞。
Loose-tube (filled with rope) strand around the central reinforced SZ member
- 双面涂塑钢(铝)带挡潮, 并具有抗侧压作用。
Double coated steel or aluminum tape to block moisture, effect on the resistance to side pressure at the same time

主要机械性能:
Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许拉伸力(N) Permissible tensile force(N)	短期 Shout-term 1500
		长期 Long-term 600
2	允许压扁力(N/100mm) Permissible flatten force(N/100mm)	短期 Shout-term 1000
		长期 Long-term 300
3	最小弯曲半径(D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static 10D
		动态 Dynamic 20D

钢(铝)塑复合带	Steel-plastic or aluminum-plastic composite tape
填充膏	filling rope
PBT松套管	PBT loose tube
中心加强件	Central reinforced member
光纤	UV fiber
纤膏	filling compound
包带	covering tape
PE护套	PE-sheath



2-12芯中心管式光缆

2-12 GYXTS/GYXTA

产品型号: GYXTS GYXTA

Product type: GYXTS GYXTA

产品结构: 中心PBT松套管 12根高强度钢丝均匀绞合于松套管周围 钢(铝)一聚乙烯粘结护套
Product structure: PBT fiber loose tube, 12 reinforced steel wires strand around the loose tube evenly, laminated al-plastic or steel-plastic sheath

敷设方式: 管道、架空、直埋
Installation method: tube, aerial, direct burial

适用温度范围: -40℃ ~ +60℃
Temperature range of application: -40℃~+60℃

产品特点:
Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉性能和温度性能。
The rational design and precise control over the fiber remainder length in the loose tube, make the fiber optic cable possess excellent performance of tension and temperature.
- 光缆外径小, 重量轻, 易于敷设。
Short outer diameter and light weight make the fiber optic cable easier to install.
- 钢丝铠装抗侧压性能优良, 并具有防弹能力。
Armored with steel wire, the fiber optical cables possesses excellent performance in resistance to side pressure and elasticity.
- 双面涂塑钢(铝)带挡潮。
Double coated steel or aluminum tape to block moisture.

主要机械性能:
Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许拉伸力(N) Permissible tensile force(N)	短期 Shout-term 3000
		长期 Long-term 1000
2	允许压扁力(N/100mm) Permissible flatten force(N/100mm)	短期 Shout-term 3000
		长期 Long-term 1000
3	最小弯曲半径(D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static 10D
		动态 Dynamic 20D

PE护套	PE-sheath
钢(铝)塑复合带	Steel-plastic or aluminum-plastic composite tape
PBT松套管	PBT loose tube
纤膏	filling compound
光纤	UV fiber
钢丝	steel wire
包带	covering tape
填充膏	filling rope



夹带平行钢丝中心管式光缆 Strand fiber optic cables armored with steel tape in parallel and sheathed with polythene

产品型号: GYXTW
Product type: GYXTW

产品结构: 中心PBT松套管 二根平行钢丝加强 钢-聚乙烯粘结护套
Product structure: PBT fiber loose tube, reinforced steel wire center, filling compound for cable, laminated al-plastic or steel-plastic sheath

敷设方式: 管道、架空
Installation method: tube, aerial

适用温度范围: $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Apply temperature range: $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$

产品特点:
Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables; of tension and temperature under the condition of tension and extreme temperature.
- 光缆外径小、重量轻、易于敷设。
Short outer diameter and light weight make the fiber optical cables easier to install.
- 两根平行钢丝保证光缆的抗拉强度。
Two reinforced steel wires in parallel ensure the resistance to tensile force.
- 双面涂塑钢带挡潮, 并具有抗侧压作用。
Double coated steel tape to block moisture and to effect on the side pressure resistance.

主要机械性能:
Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许拉伸力 (N) Permissible tensile force (N)	短期 Shout-term 3000 长期 Long-term 1000
	2	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)
3		最小弯曲半径 (D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)

钢塑复合带 Steel-plastic composite tape

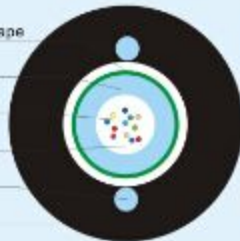
PBT松套管 PE-sheath

光纤 UC fiber

纤膏 filling compound

加强钢丝 reinforced steel wire

PE护套 PBT loose tube



聚乙烯内护套钢带铠装聚乙烯外护套层绞式光缆 Strand fiber optic cables armored with steel tape, inner sheathed with outer sheathed with polythene

产品型号: GYTY53
Product type: GYTY53

产品结构: PBT光纤松套管 钢丝中心加强 缆芯内填充油膏 PE内护套 纵包皱纹钢带铠装 聚乙烯外护套

Product structure: PBT fiber loose tube, reinforced steel wire center, filling compound for cable, PE-sheath, longitudinally covered armored with wrinkling steel tape and PE outer sheath

敷设方式: 直埋、架空
Installation method: tube, aerial

适用温度范围: $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Temperature range of application: $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$

产品特点:
Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables; of tension and temperature under the condition of tension and extreme temperature.
- 缆芯内充满油膏, 确保了纵向阻水效果。
Cable core filled ointment to ensure the effect of vertical water blocking.
- 松套管围绕中心加强件SZ层绞。
Loose-tube (filled with rope) strand around the central reinforced SZ member
- 双护套结构挡潮, 提高了光缆抗侧压、抗冲击性能。
Double coated steel or aluminum tape to block moisture, effect on the resistance to side pressure and impact strength.

主要机械性能:
Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许拉伸力 (N) Permissible tensile force (N)	短期 Shout-term 3000 长期 Long-term 1000
	2	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)
3		最小弯曲半径 (D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)

钢塑复合带 Steel-plastic composite tape

阻水层 water-proof tape

填充绳 Filling-rope

中心加强件 Central reinforced member,

光纤 UC fiber

纤膏 filling compound

PBT松套管 PBT loose tube

包带 covering tape

PE内护套 PE inner sheath

PE外护套 PE outer sheath



铝-聚乙烯内护套钢带铠装聚乙烯外护套层绞式光缆 Strand fiber optic cables armored with steel tape, inner sheathed with AL-polythene and outer sheathed with polythene

产品型号: GYTA53

Product type: GYTA53

产品结构: PBT松套管 钢丝中心加强 缆芯内填充油膏 铝-聚乙烯粘结内护套 纵包皱纹钢带铠装聚乙烯外护套

Product structure: PBT fiber loose tube, reinforced steel wire center, filling compound for cable, laminated al-polythene inner sheath, longitudinally covered armored with wrinkling steel tape and PE outer sheath

敷设方式: 直埋、架空

Installation method: direct burial, tube

适用温度范围: -40℃~+60℃

Temperature range of application: -40℃~+60℃

产品特点:

Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optic cables; of tension and temperature under the condition of tension and extreme temperature.
- 缆芯内充满油膏, 确保了纵向阻水效果。
Cable core filled ointment to ensure the effect of vertical water blocking.
- 松套管围绕中心加强件SZ层绞。
Loose-tube (filled with rope) strand around the central reinforced SZ member
- 双面涂塑铝带挡潮。
Double coated steel or aluminum tape to block moisture.
- 双层粘结护套, 进一步提高了光缆的抗透潮、抗侧压、抗冲击性能。
Double laminated sheathed improves the effects on the resistance to moisture, side pressure and impact strength.

主要机械性能:

Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand	
1	允许拉伸力 (N) Permissible tensile force (N)	短期 Short-term	3000
		长期 Long-term	1000
2	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)	短期 Short-term	3000
		长期 Long-term	1000
3	最小弯曲半径 (D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static	12.5D
		动态 Dynamic	25D

钢塑复合带 Steel-plastic composite tape
PE内护套 PE inner sheath
护套 covering tape
缆膏 filling compound for cable
填充绳 filling-rope
PBT松套管 PBT loose tube
光纤 UC fiber
纤膏 filling compound
中心加强件 Central reinforced member
铝塑复合带 AL-plastic composite tape,
隔水层 water-proof tape
PE外护套 PE outer sheath



非金属(阻燃)层绞式光缆

Strand fiber optic cables with non-metal fire-resistance

产品型号: GYFTY (GYFTZY)

Product type: GYFTY (GYFTZY)

产品结构: PBT松套管 非金属中心加强件FRP 缆芯内填充油膏 PE护套或低烟无卤阻燃护套
Product structure: PBT fiber loose tube, reinforced central non-metal FRP member, filling compound for cable, PE sheath or low smoke zero halogen sheath for fire-resistance

敷设方式: 管道(进局)、架空

Installation method: duct(entrance), aerial

适用温度范围: -40℃~+60℃

Temperature range of application: -40℃~+60℃

产品特点:

Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优良的抗拉伸性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optic cables; of tension and temperature under the condition of tension and extreme temperature.
- 缆芯内填充油膏, 确保了纵向阻水效果。
Cable core filled ointment to ensure the effect of vertical water blocking.
- 整根缆为非金属, 不受电磁干扰。
Non-metal materials make the cable immune to electromagnetism
- 护套选用低烟无卤阻燃聚乙烯, 可适用于进局、隧道。
Sheathed with low smoke zero halogen PE is appropriate for using in the entrance and tube.

主要机械性能:

Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand	
1	允许拉伸力 (N) Permissible tensile force (N)	短期 Short-term	1500
		长期 Long-term	600
2	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)	短期 Short-term	1000
		长期 Long-term	300
3	最小弯曲半径 (D: 光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static	10D
		动态 Dynamic	20D

填充绳 filling-rope

PBT松套管 PBT loose tube

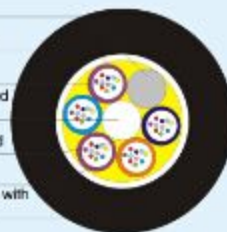
光纤 UC fiber

中心加强件FRP Central reinforced FRP member

纤膏 filling compound

包带 covering tape

PE外护套(阻燃护套) fire-resistance



8字型自承式光缆

Self-support fiber optic cable in 8-shape

产品型号: GYTCS

Product type: GYTCS

产品结构: PBT光纤松套管 金属中心加强 缆芯内填充油膏 钢-聚乙烯粘结护套 吊线-镀锌钢绞线
Product structure: PBT fiber loose tube, reinforced central non-metal member, filling compound for cable, laminated steel-PE inner sheath

敷设方式: 自承式架空

Installation method: self-supporting aerial

适用温度范围: -40℃~60℃

Temperature range of application: -40℃~+60℃

产品特点:

Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长,使光缆具有优良的抗拉伸性能和环境性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables; of tension and temperature under the condition of tension and extreme conditions
- 双面涂塑钢带防潮,并具有抗侧压作用。
Double coated aluminum tape to block moisture, effect on resistance to side pressure.
- 镀锌钢绞线保证了光缆自承式所需要的抗拉强度。
Galvanized steel strand wire ensures the necessary tensile force in self-supporting way.
- 适合跨距100m及以下自承式架空敷设,施工速度快,节省吊线及光缆挂钩。
It is appropriated for self-supporting installation with the distance not exceeding 100m, for the advantages of high construction speed and saving in the use of hanging wires and cable suspension hook.

主要机械性能:

Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)	短期 Short-term 1000 长期 Long-term 300
	最小弯曲半径(D:光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static 10D 动态 Dynamic 20D

抗拉强度可根据用户要求专门设计,钢绞线直径选用4.8mm、5.4mm、6mm等不同尺寸。
The resistance of tensile force can be designed peculiarly according to the requirement of users. The diameter of steel strand wire can choose 4.8mm, 5.4mm, 6mm and so on.

吊线 Hanging line,
PE护套 PE sheath,
光纤 UC fiber,
纤膏 filling compound,
PBT松套管 PBT loose tube,
中心加强件 central reinforced member,
填充绳 filling-rope,
包带 covering tape,
钢塑复合带 steel-plastic composite tape.



带状光缆

Optical Fiber Ribbon Cable

产品型号: GYDXTW GYDTS

Product Type: GYDXTW GYDTS

产品结构: 光纤带 PBT大套管平行钢丝加强或钢丝中心加强 钢-聚乙烯粘结护套
Product Type: Ribbon, PBT big grommet, Reinforced steel wire in parallel or reinforced steel wire center, laminated steel-polythene sheath

敷设方式: 管道、架空

Installation method: dtube, aerial

适用温度范围: -40℃~+60℃

Temperature range of application: -40℃~+60℃

产品特点:

Product characteristics:

- 合理的设计及精确的控制松套管中光纤的余长,使光缆具有优良的抗拉伸性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables; of tension and temperature under the condition of tension and extreme temperature.
- 采用中心管式或层绞式结构。
Central tube design or stranded design is adopted.
- 光纤集装密度高,接头省时,适用于接入网。
High density of optical fiber containers, so as to save the time of jointing, is appropriate to be used for Access Net.



主要机械性能:

Main mechanical characteristics

序号 Item number	项目 Item	特性要求 Performance demand
1	允许拉伸力 (N) Permissible tensile force (N)	短期 Short-term 1500 长期 Long-term 600
		允许压扁力 (N/100mm) Permissible flatten force (N/100mm)
最小弯曲半径(D:光缆外径mm) Minimum bending radius (D: the out diameter of cablemm)	静态 Static 10D 动态 Dynamic 20D	

GYDXTW剖面图

GYDXTW cross-section drawn



光纤带 Ribbon,
加强钢丝 Reinforced steel wire,
纤膏 Filling compound,
PBT大套管 PBT big grommet,
PE护套 PE sheath
钢塑复合带 Steel-plastic composite tape

GYDTS剖面图

GYDTS cross-section drawn



光纤带 Ribbon,
纤膏 Filling compound,
PBT大套管 PBT big grommet,
中心加强件 Central reinforced member,
包带 Covering tape,
钢塑复合带 Steel-plastic composite tape,
PE护套 PE sheath

软 光 缆 Flexible Optical Cable

产品型号: GJFJV
Product type: GJFJV

产品结构: 紧包光纤 芳纶加强件 阻燃聚氯乙烯护套或聚氨酯护套
Product structure: Tightly-wrapped fiber, Aramid reinforcement, PVC sheath with fire resistance or Polyurethane sheath

敷设方式: 室内或野外
Installation method: Indoor or outdoor

适用范围 -20℃~+60℃ -40℃~+70℃
Temperature range of application: -40℃~+60℃

产品特点:
Product characteristics:

1. 采用紧包光纤, 单芯、双芯或多芯。
Tightly-wrapped fiber (single core, double core, multi-core)
2. 芳纶纱加强, 柔软, 弯曲半径小。
Aramid reinforcement is very soft, so as to shorten the bending radius.
3. 可选用阻燃聚氯乙烯护套或野外用聚氨酯护套。
PVC, polyolefin hydrogen, or Polyurethane sheath used in field fight
4. 端头可直接制作活动连接头。
The ends can be used as flexible joints.
5. 用于综合布线、传输设备中光连接野战光缆等。
It is appropriate to be used in generic cabling, optical cables used as connection line in field fight in transmission



光纤芯数 Fiber count	最小弯曲半径 (D: 光缆外径mm) Minimum bending radio (D: outer diameter)		允许拉伸力 (N) Permissible tension		
	静态 Static	动态 Dynamic	室内 Indoor	长期 Long-term	野战 (短期) Field with (short-term)
1	10D	20D	150	80	1000N
2	10D	20D	300	160	1500N
2-12	10D	20D	600	200	1500N
			1500	600	



紧包光纤
The layer of aramid
芳纶加强层 reinforcement
护套 Sheath



全介质自承式光缆 Self-supporting fiber optic cables(ADSS)

产品型号: ADSS (GYFTCY)
Product type: ADSS (GYFTCY)
产品结构:

Product structure:



光纤	UC fiber
纤膏	filling compound
PBT松套管	PBT loose tube
填充绳	filling compound for cable
中心加强件FRP	Central reinforced FRP member
填充绳	filling-rope
PE内护套	PE inner sheath
芳纶加强层	Fanglun reinforced member,
外护套	outer sheath with fire-resistance

Product structure: UC fiber, filling compound, PBT fiber loose tube, reinforced central FRP member, filling rope, PE inner sheath, Aramid reinforced layer, outer sheath

敷设方式: 自承式架空
Installation method: self-supporting aerial
适用温度范围: -40℃ ~ +65℃
Temperature range of application: -40℃~+60℃

产品特点:
Product characteristics:

1. 合理的设计及精确的控制松套管中光纤的余长, 使光缆具有优异的抗拉性能和温度性能。
The rational design and precise control over the fiber surplus length in the loose tube, make the fiber optical cables; of tension and temperature under the condition of tension and extreme temperature.
2. 精确控制芳纶纱绞合工艺提高光缆的抗拉能力。
The precise control of aramid strand skill improves the resistance to tensile force of the fiber optical cables.
3. 光缆敷设区空间电位不大于12kV, 采用普通PE外护套; 光缆敷设区空间电位大于12kV, 采用耐电痕黑色聚烯烃外护套AT。
The electric potential in the cable installation area not exceeding 12kv adopts ordinary PE-sheath; the electric potential in the cable installation area not exceeding 12kv adopts sheathed with black PO for resistance to track.
4. 重量轻、缆径小, 减小了冰凌、风力的影响和对塔架、支撑物的负荷。
Light weight and short diameter decrease the influence of sleet and wind load of tower upholder.



5. 跨距大，最大跨距超过1000米，可不断电架设。
Long span for the max. exceeding 1000; installation without power suspend is available.
6. 工程辅助设计（弧垂张力表、场强计算、挂点选择、金具配置）
The project assist design(tensile arc table, field strength computation, choice of hook position, Hardware configuration)

主要机械性能:
main mechanical:

序号 Item number	项 目 Item	性能要求 Performance demand	
1	额定抗拉强度 (RTS)	≥95RTS	
2	最大允许使用张力 (MAT)	40%RTS	
3	年平均运行应力 (EDS)	25%RTS	
4	极限运行张力 (UOS)	60%RTS	
5	最小弯曲半径 (D: 光缆外径mm) Minimum bending radius { D: the out diameter of cablemm }	静态 Static	15D
		动态 Dynamic	25D
6	允许压扁力 (N/100mm) Permissible flatten force (N/100mm)	2200	

光纤复合架空地线

Optical Fiber Composite Overhead Ground Wire

产品型号: OPGW

Product type: OPGW

产品结构:

不锈钢光纤松套管
铝包钢线(ACS)、不锈钢管及外层铝合金线绞合而成，可以是单层、双层、三层铠装结构
绞线层间涂覆防腐油膏

Product Structure:

Stainless steel fiber loose tube
Aluminum-clad steel wire(ACS); stainless steel tube and stranded aluminum-alloy wire on outer layer; the structures of single layer, double layers and triple layers are all available; coating corrosion copy between winding layer

产品特点:

Product characteristics:

1. 采用不锈钢光纤松套管结构，提高可靠性和耐温性能。
Stainless steel fiber loose tube improves the reliability and heat resistance
2. 满足大芯数线路应用。
It applies to the line of multiple fiber counts.
3. 与传统的地线基本一致，光缆架设方便。
It is basically the same with traditional ground wire
4. 特别适用于与电力传输线路同步建设的光纤通信系统。
It is specially used for optical communication system, which involves building with power transmission lines synchronously.
5. 工程辅助设计（张力弧垂计算、短路电流、金具配置）。
Accessorial engineering design (sag and tension calculation, short-circuit current, fitting configuration)



层绞式结构 Stranded design:



中心管式结构 Central tube design:



主要技术参数

Main technique references

直径 (mm) Diameter (mm)	额定拉断力RTS (kN) Rated pull-off force RTS (kN)
重量 (kg/km) Weight (kg/km)	最大允许张力MAT (kN) The max. permissible tensile MAT(kN)
承载截面积 (mm ²) Bearing cross-sectional area	年平均运行应力EDS (kN) Average annual stress EDS(kN)
弹性模量(MPa) Flexible mold (MPa)	应变限值 (%) Strain limit (%)
线膨胀系数 (1/°C) Coefficient of linear expansion (1/°C)	直流电阻 (Ω/km) DC resistance
短路电流容量 (kA/S) The capacity of short-circuit current	最大允许温度范围 (°C) Max. permissible temperature range

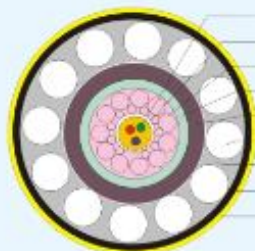
注：可根据用户要求专门设计

Note: It is available to design according to customers' requirements.

海底光缆

Submarine Cable

产品结构:
Product structure:



光纤	Optical fiber
不锈钢管	Stainless steel tube
内加强钢丝	Reinforces steel wires inside
PE内护套	PE inner sheath
PE外护套	PE outer sheath
铠装钢丝	Armored steel wires
改性沥青	Modified asphalt
PP绳	PP line
PVC包带	PVC tape

应用范围: 大陆与岛屿之间, 岛屿与岛屿之间, 沿海城市之间的海底通信。

Application area: submarine communication the areas between land and island, between islands, and between coastal cities.

产品特点:

Product characteristics:

1. 光纤置于激光焊接不锈钢管中, 管内填充改性沥青。有效的保护光纤免受机械外力的影响和水分侵入, 并防止氢损。
Put optical fiber in the stainless steel tube, which is filled with modified asphalt, so as to protect the optical fiber from the influence of mechanical force, the invasion of water, and oxygen loss.
2. 内增强层采用两层高强度钢丝。
Inner reinforced layer adopts two highly strengthened steel wire.
3. 可以施加铜导体, 用于故障定位或中继供电。
Copper-conductor can be used for fault location and relay power supply.
4. 锌铝镁合金镀层钢丝可以单铠或双铠, 使光缆具有优异的机械性能和耐海水腐蚀性能。
Zinc-aluminum-magnesium-alloy steel wire can be single or double armored, which make the optical cable possess of excellent mechanical function and resistance to seawater corrosion.
5. 改性沥青用于铠装钢丝的防腐。
Modified asphalt is used for the corrosion of armored steel wire.
6. 单根制造段长不小于25km。
Single manufactured segment length should exceed 25km.



主要技术参数
Main technique references

项目 Item	类型 Type	A	B	C	D
断裂拉伸 负荷UTS (kN) Tensile load UTS (kN)		400	160	100	50
短暂拉伸负荷NTTS (kN1) Instantaneous Tensile load NTTS (kN1)		240	110	70	30
工作拉伸负荷NOTS (kN) Tensile load of work NOTS (kN)		120	60	40	20
最小弯曲半径与海底光缆外径之比 The ratio of Minimum bending radio and the outer diameter of submarine cable		≥25	≥25	≥35	≥30
冲击(重量锤kg × 150ram) Shock (Weight hammer kg × 150ram)		260	160	130	65
抗压kn/100mm Compression kn/100mm		40	20	15	10
外径mm Outer diameter mm		36	33	23	19
重量kg / m Weight kg/m	空气中 In air	3.5	3.9	1.3	0.6
	海水中 In seawater	2.7	3.1	1.0	0.3
渗水 Waterproof	浅海光缆 Shallow submarine cable	5Mpa水压, 14天单向渗水长度不大于200mm。 50Mpa water pressure, the length of single waterproof in single direction should not be excess 200mm in 14 days.			
	深海光缆 Deep-sea cable	5Mpa水压, 14天单向渗水长度不大于1000mm。 50Mpa water pressure, the length of single waterproof in single direction should not be excess 1000mm in 14 days.			
使用和敷设温度范围℃ Installation and working temperature		-10-40			
储存温度范围℃ Storage temperature		-20-50			

注Note: 1. 上述表格未列出全部产品类型, 不同型号适用于不同的使用深度、海底环境。

Not all the product types are listed above. Different product types are used in different using depth and sea environment.

2. 可以根据用户的指标要求和实际线路情况专门设计。

It can designed according to customers' requirements and practical line situation.

水线光缆

Waterline Optical Cable

产品型号 GHTLY₄₁-96B₄
Product Type: GHTLY₄₁-96B₄
产品结构:

光纤松套管 SZ绞层结构 缆芯内充满油膏密封焊接铝管 聚乙烯内护套合金镀层钢丝铠装
沥青涂覆 聚丙烯绳外被

Product Structure:

Optical loose tube, SZ stranded structure, Sealing the welding al-tube completely by the filling ointment in the cable core, PVC inner sheath, Alloy coating, Steel wire armored, Asphalt coating, Polypropylene rope outside

敷设范围: 江河、湖泊、浅海

Application Area: River, lake, neritic region

适用温度范围: -30℃~+60℃

Apply Temperature Range: -30℃~+60℃

产品特点:

Product characteristics:

- 合理的设计及精确控制松套管中光纤余长, 使光缆具有优良的抗拉性能和环境性能。
The rational design and precise control over the fiber surplus length in the fiber tube make the fiber optical cables; of tension and temperature under the condition of tension and extreme conditions
- 缆芯内填充阻水油膏, 确保纵向水密。
Cable core filled ointment to ensure the effect of vertical water blocking.
- 缆芯连接焊接冷拔铝管, 径向密封抗水压, 防止氢损。
Cable core is welded with cold drawn al-tube continuously, and radial in vertical for water pressure resistance, as well as the prevention of hydrogen loss.
- 双层合金钢丝铠装, 使光缆具有优异的机械强度和耐腐蚀性能。
Double armored with alloy steel wire, so as to make the optical cable with excellent mechanical strength and anti-corrosion function.
- 钢丝涂覆改性沥青, 提高使用寿命。
Steel wire coated with modified asphalt, so as to improve the using life of waterline optical cable.

主要机械性能

Main Mechanical Function

序号 Item No.	项目 Item	特性要求 Feature requests
1	短暂无伸负荷 Instantaneous Tensile load	140kN
2	工作拉伸负荷 Tensile load of work	70kN
3	抗压 Pressure resistance	10kN/100mm
4	冲击 Shock	100kg/150mm
5	最小弯曲半径 Minimum bending radio	1m
6	渗水 Waterproof	2MPa水压, 14天, 单向渗水长度不大于200mm 2MPa water pressure, the length of waterproof should not excess 200mm in 14days.



通信电缆产品介绍 INTRODUCTION OF THE COMMUNICATION CABLE

主要的电缆型号及名称

HYA-铜芯, 实心聚烯烃绝缘, 铝塑综合护套市内通信电缆。

HYAT-铜芯, 实心聚烯烃绝缘, 石油膏填充, 铝塑综合护套市内通信电缆。

HYAC-铜芯, 实心聚烯烃绝缘, 铝塑综合护套, 自承式市内通信电缆。

用途:

HYA型、HYAT型、HYAC型电缆是为电话交换区、中继干线而设计的电话电缆, HYA、HYAT主要用于管道敷设, 也可用于架空, 但需要用吊线; HYAC适用于架空, 无需用吊线和挂钩。

结构:

1、导线: 退火裸铜线, 铜线直径为: 0.4, 0.5, 0.6, 0.7, 0.8, 0.9mm。

2、绝缘材料: 高密度聚乙烯或聚丙烯, 绝缘线颜色均按照全色谱标准所标明。

3、绝缘线对: 把单根绝缘线按照不同的节距扭绞成对, 以最大限度地减少串音, 采用规定的色谱组合以识别线对。

4、缆芯结构: 以25对为基本单位, 超过25对的电缆按单位组合, 每个单位都用规定色谱扎带绕扎, 以便识别不同单位。100对及以上的电缆加有1%预备线对, 但最多不超过6对。HYAT缆芯内的空隙用石油膏填充。

5、缆芯包带: 用非吸湿性带绕包缆芯。

6、铝塑综合护套

①、屏蔽: 用0.3mm厚的双面涂塑铝带, 纵包于缆芯包带之外, 两边搭接粘在一起, 400对以上采用轧纹纵包。

②、护套: 黑色低密度聚乙烯。

7、识别和长度标记: 电缆表面印有永久性识别标记, 标记间隔1米, 标记内容有: 型号、规格、厂名、商标、制造年份及计米。

MAIN CABLE TYPES AND NAMES

HYA - copper conductor, solid polyolefin insulated, aluminium and plastic composite sheathed, local communication cable.

HYAT - copper conductor, solid polyolefin insulated, jelly filled, aluminium and plastic composite sheathed, local communication cable.

HYAC - copper conductor, solid polyolefin insulated, aluminium and plastic composite sheathed, self-supporting local communication cable.

APPLICATION

HYA, HYAT, HTAC cables are telephone cables designed for telephone exchange area and trunkline. HYA, HYAT can mainly be used in duct, sometimes overhead with messenger. HYAC can be used overhead with no messenger.

STRUCTURE

1. Conductor: Annealed bare copper wires, wire diameter: 0.4, 0.5, 0.6, 0.7, 0.8, 0.9mm.

2. Insulation material: High density polythene or polypropylene, insulated wires are marked with colors according to the full color code standard.

3. Insulated pairs: The insulated conductors are twisted to pairs with varying lay lengths so as to reduce crosstalk to the greatest degree, special chromatic combinations are applied for the identification of the pairs.

4. Core structure: 25 pairs form a unit. Cables having more than 25 pairs are assembled in units. Each unit is lapped up with bindings of specified colors for the convenience of identification an extra 1% of spare pairs, but not exceeding 6 pairs, are attached to the cable of 100 pairs for more. The interstices inside HYA and cable cores are lapped with jelly.

5. Core wrapping: Nonhygroscopic tapes are used to wrap up the core.

6. Al-plastic composite sheath

① shield: A plastic coated aluminium tape of 0.3mm thickness applied longitudinally over the core wrap with two edges overlapped and seam sealed. For the cable of more than 400 pairs, the longitudinal applied tape is corrugated.

② sheath: low density black polythene.

7. Identification and length mark; on the surface of the cable, at intervals of 1 metre, are printed with the perpetual marks such as type, specifications, manufacturer, trade mark, year of manufacturer and sequentially numbered length marks.

铜芯聚烯烃绝缘铝塑综合护套市内通信电缆

一、产品标准: YD/T322-1996

二、产品用途: 本产品主要用于传输音频150kHz及以下的模拟信号和2048kbit/s及以下的数字信号。在一定条件下,也可用于传输2048kbit/s以上的数字信号。

三、产品使用特性:

1. 电缆的工作环境温度为一30℃~+60℃;
2. 电缆敷设安装时的环境温度一般不低於-5℃;
3. 电缆的弯曲半径应不小于电缆外径的15倍;
4. 本产品只限室外使用,如需进入室内,应采取防火措施。

1. Standard: YD/T322-1996

2. Application: The product is mainly used to transmit analog signals of or less than 150kHz and numeral signal of or less than 2048kbit/s. Under given condition, it can be used to transmit numeral signal more than 2048kbit/s.

3. Using characteristics:

1. The environmental working temperature of the cable is from -30℃ to +60℃;
2. The environmental temperature of the cable during installation should not be lower than -5℃ generally;
3. The bent semidiameter of the cable should not be less than 15 times of the cable diameter;
4. The product can only be used outdoors, if used indoors, should be taken to prevent fire

四、电缆主要型号、规格 Main types and specifications

HYA实心绝缘填充型市内通信电缆典型参数

Model parameter of HYA solid insulated unfilled-type city proper telecommunication cable

导体直径 Conductor diameter(mm)	结构参数Structure parameter			导体直径 Conductor diameter(mm)	结构参数Structure parameter		
	标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)		标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 Cable weight (kg/km)
0.4	10	10	90	0.4	600	40	2134
	20	12	133		800	45	2794
	30	13	172		900	47	3105
	50	15	245		1000	50	3410
	100	18	430		1200	53	4066
	150	22	589		1400	58	4661
	200	24	779		1600	61	5340
	300	28	1122		1800	64	5976
	400	33	1472		2000	69	6587
	500	36	1793		2400	72	7800
0.5	10	11	113	0.5	10	12	140
	20	13	174		20	15	224
	30	15	231		30	18	303
	50	17	340		50	18	463
	100	23	608		100	26	853
	150	27	871		150	32	1223
	200	29	1137		200	35	1602
	300	35	1662		300	42	2341
	400	40	2172		400	47	3071
	500	45	2652		500	52	3782
0.7	600	49	3183	600	57	4493	
	800	56	4145	800	66	5916	
	900	58	4618	900	69	6600	
	1000	61	5082	1000	72	7274	
	1200	65	6087	10	13	174	
	1400	71	7020	20	16	279	
	1600	75	7949	30	18	385	
				50	23	610	

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导体直径 Conductor diameter(mm)	结构参数Structure parameter			导体直径 Conductor diameter(mm)	结构参数Structure parameter		
	标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)		标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)
0.7	100	31	1142	0.8	200	48	2724
	150	36	1631		300	59	4023
	200	41	2134		400	67	5282
	300	50	3123		500	73	6521
	400	57	4103		600	80	7754
	500	63	5032		10	15	271
0.8	600	68	6032	0.9	20	20	410
	10	14	208		30	23	579
	20	18	346		50	29	922
	30	21	490		100	39	1770
	50	26	763		150	47	2595
	100	35	1147		200	53	3450
150	42	2099	300	65	5102		

HYAT实心绝缘填充型市内通信电缆典型参数

Model parameter of HYAT solid insulate self-bear city proper telecommunication cable

导体直径 Conductor diameter(mm)	结构参数Structure parameter			导体直径 Conductor diameter(mm)	结构参数Structure parameter		
	标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)		标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)
0.4	10	11	111	0.4	600	46	2962
	20	13	169		800	53	3680
	30	15	224		900	56	4361
	50	17	325		1000	59	4793
	100	21	573		1200	64	5660
	150	25	807		1400	70	6598
	200	29	1081		1600	74	7464
	300	34	1573		1800	77	8355
	400	38	2027		2000	83	9301
	500	43	2519				
0.5	10	12	146	0.5	300	42	2403
	20	15	232		400	48	3145
	30	17	314		500	54	3844
	50	20	472		600	58	4575
	100	27	869		800	67	5992
	150	31	1254		900	70	6703
	200	35	1639		1000	74	7379

HYAC实心绝缘自承式市内通信电缆典型参数

Model parameter of HYAC solid insulate self-bear city proper telecommunication cable

导体直径 Conductor diameter(mm)	结构参数Structure parameter			导体直径 Conductor diameter(mm)	结构参数Structure parameter		
	标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)		标称对数 Nominal pairs	电缆外径 Cable diameter(mm)	电缆重量 cable weight (kg/km)
0.4	10	10	300	0.5	10	11	321
	20	12	341		20	13	379
	30	13	378		30	15	435
	50	15	447		50	17	545
	100	19	631		100	23	820
	150	22	810		150	27	1087
	200	24	970		200	29	1330
	300	28	1315		300	35	1846