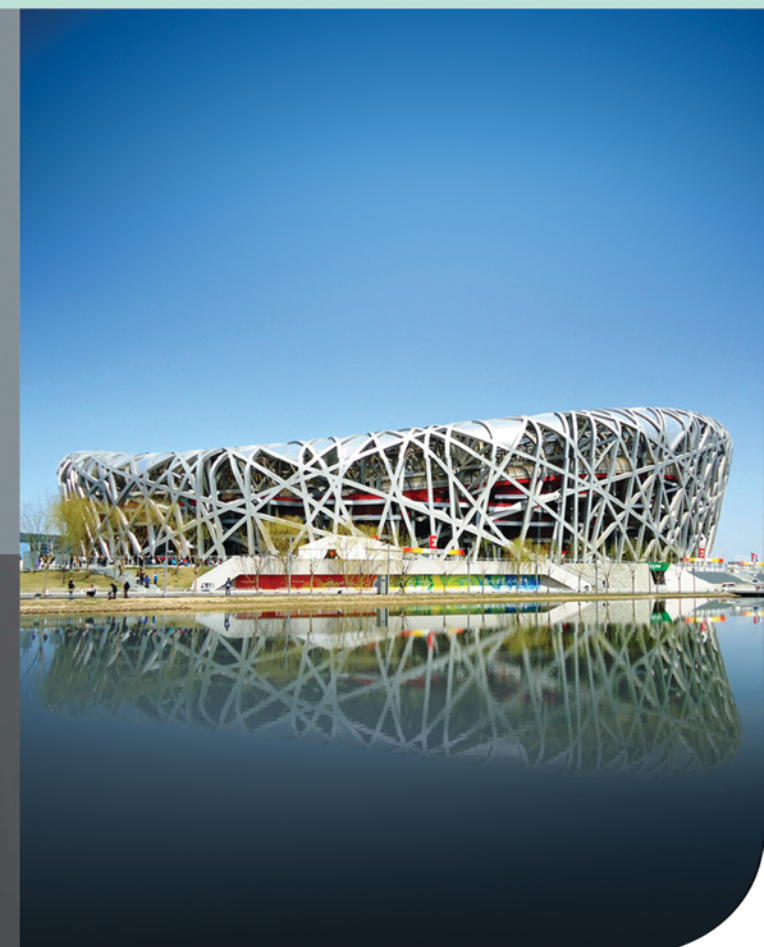


## ZTT GROUP

Established in 1992, ZTT started from optical fiber communications and was listed on Shanghai Stock Exchange (SSE) in 2002 (Stock Code in SSE: 600522). ZTT has pictured a diversified industrial portfolio for marine equipment, renewable energy, new materials, smart grid, optical communications and other diversified industrial products. ZTT Group is now hosting 80 subsidiary companies and over 16,000 employees, operating 5 overseas plants located in India, Brazil, Indonesia, Morocco and Turkey. ZTT owns more than 2500 patents with independent intellectual property rights, presided over or participated in more than 500 international and national industry standards. The products of ZTT are exported to 160 countries and regions. The company has ranked among the top 500 Chinese enterprises for consecutive years and broke through \$12.5 billion in sales revenue in 2021. ZTT follows the new economic model of fostering cleaner production and accelerating green and low-carbon development, works hard to serve as the pioneer of persistent endeavor to achieve national goal involving carbon dioxide emissions peaking by 2030 and carbon neutrality by 2060, emerging as a green manufacturing technology group assuming regional economy.



## Optic Fiber Cables





## Company Profile



***Your Partner in Cable***

ZTT Cable was established in 1992 and issued stock in 2002. As the backbone of this public company, optical cable factory manufactures ZTT's all kinds of optical cables.

With the development of enterprise scale and the expansion of market scale, the cable factory consists of five domestic major production bases and six oversea factories. Five production bases are respectively in Nantong city, Yancheng city, Henan province, Guangdong province, and Sichuan province. The oversea production bases are in India, Brazil, Indonesia, Turkey and Morocco. As the major cable production base, Nantong base consists of four factories for three production parts: conventional, special and FTTX cables. The annual capacity can reach 3.5million kilometers total from 14 subsidiary factories of 11 production bases.

ZTT's optical cables have been sold all over the world, more than 138 countries, more than 12,000,000 km.

ZTT cables have been widely used by Telecommunication and Power Operators all over the world, such as Vodafone, Deutsche Telekom, Telefonica, Elisa, Bouygues, NOS, NetLink Trust, Etisalat, TOT, TRUE, CAT, ICE, Egypt Telecom, Qatar Telecom, Electricity of Vietnam (PC1, PC2 and PC3), HK PCCW and so on.

ZTT cables have been widely used in various fields, mainly including Railways, Mobile and Communication Operators, Internet Providers, Subways, Mines, Signal Acquisitions and so on.



## Type of Fiber Optic Cables

- Duct Cable
- Buried Cable
- Figure-8 Self-supporting Aerial Cable
- ADSS
- Micro Fiber and Cable
- Underwater Cable
- Ribbon Cable
- All Dry Cable
- Color Stripe Cable
- 3-Strand Light Short Span Aerial Cable
- Easy Branch Figure-8 Self-supporting Aerial Cable
- Lightning Protective Light Cable
- Flexible Loose Tube Cable
- FTTx Cable
- Flame-retardant Cable and Fire-resistance Cable
- Micro Bundle Cable
- Low Friction Drop Cable
- Invisible Drop Cable
- Anti-rodent or Anti-termite Cable
- Sewer Cable
- Pavement Cable
- Detection Cable
- Photoelectric Composite Cable



## Typical Experiences



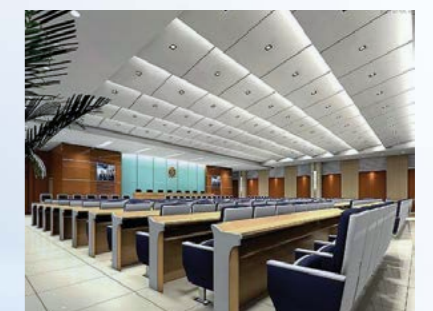
■ National Stadium (Bird's Nest)—Flame-resistance Cable



■ ICE-Figure-8 Self-supporting Cable



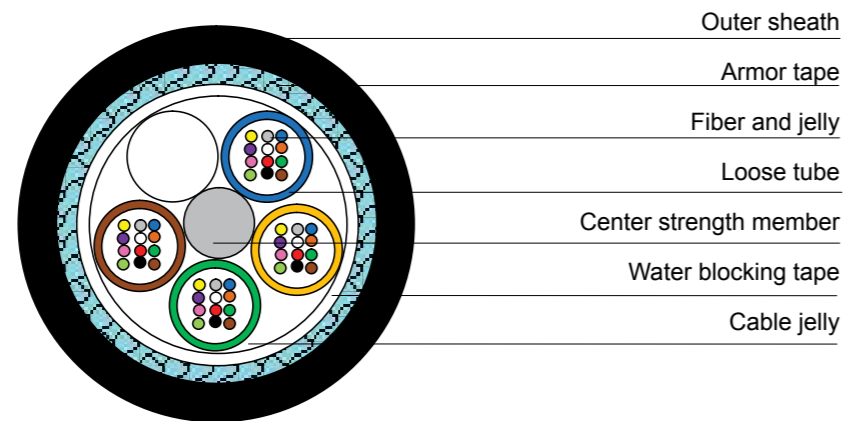
■ Congo River—Underwater Cable



■ HK PCCW —FTTx Cable

# Duct Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 624 fibers) or central tube structure (up to 144 fibers)
- Metallic, non-metallic armored or unarmored
- Steel wire or FRP for center strength member
- Good water penetration, mechanical and environmental performance
- With simple structure easy to install
- PE or LSZH sheath materials
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

### Unarmored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S1	24	9.5	75	1000	1000
OFC-24-SD-S1	24	8.7	70	1500	1000

### Metallic armored, loose tube stranded cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-24-FStD-S1	24	10.7	115	1000	2000
OFC-24-SStD-S1	24	9.9	110	1500	2000
OFC-24-FAID-S1	24	10.5	95	1000	1500
OFC-24-SAID-S1	24	9.7	90	1500	1500

### Non-metallic armored, loose tube stranded cable

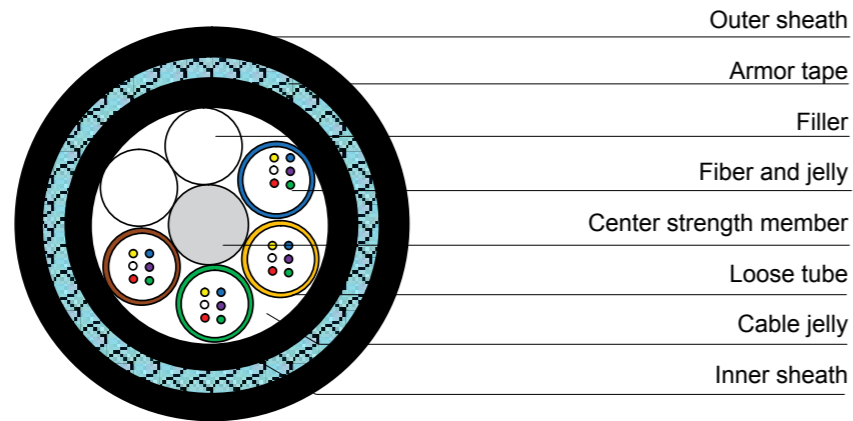
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-24-FAD-S1	24	9.7	78	1500	1500
OFC-24-SAD-S1	24	8.9	72	2000	1500
OFC-24-FGD-S1	24	9.8	80	1500	1500
OFC-24-SGD-S1	24	9.0	73	2000	1500

### Central tube structure cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-24-CAD-S1	24	7.0	48	1000	1500
OFC-24-CGD-S1	24	7.0	50	1000	1500

# Buried Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 624 fibers) or central tube structure (up to 144 fibers)
- Metallic or non-metallic armor providing good crush resistance
- Steel wire or FRP for center strength member
- Good water penetration, mechanical and environmental performance
- PE or LSZH sheath materials
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

### Metallic armored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FStDB-S1	24	12.5	145	2000	3000
OFC-24-SStDB-S1	24	11.1	148	2000	3000
OFC-24-FAStDB-S1	24	13.5	175	2000	3000
OFC-24-SAStDB-S1	24	12.1	180	2000	3000

### Non-metallic armored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FADB-S1	24	11.5	105	2000	3000
OFC-24-SADB-S1	24	10.1	90	2000	3000
OFC-24-FGDB-S1	24	11.6	106	2000	3000
OFC-24-SGDB-S1	24	10.2	92	2000	3000

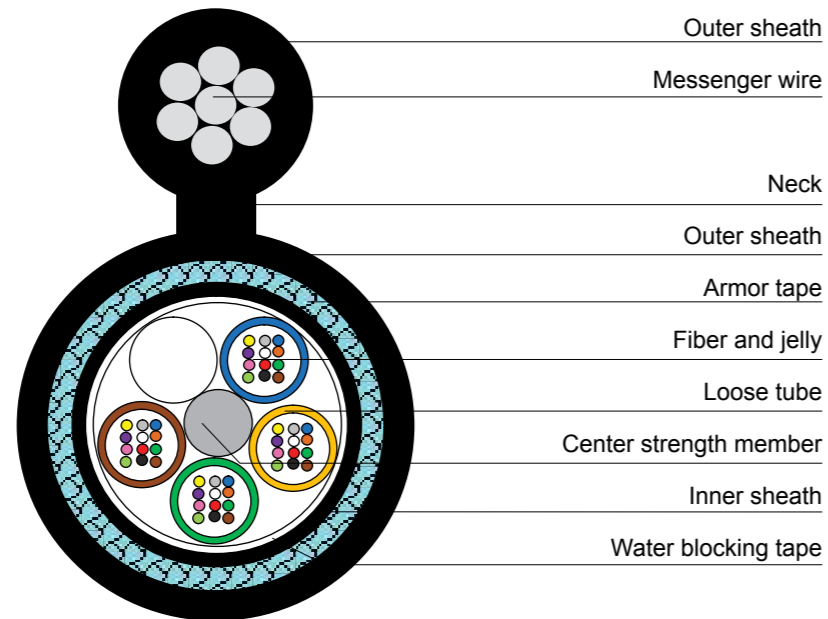
### Central tube structure

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-CStSwDB-S1	24	10.2	120	1500	3000
OFC-24-CGDB-S1	24	8.4	65	1500	3000
OFC-24-CADB-S1	24	8.5	65	1500	3000



# Figure-8 Self-supporting Aerial Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 312 fibers) or central tube structure (up to 144 fibers)
- Metallic, all-dielectric armored or unarmored
- Steel wire or FRP for center strength member
- The messenger wire can be steel wire or FRP
- Good water penetration, mechanical and environmental performance
- PE or LSZH sheath materials
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

### Unarmored, loose tube stranded

Cable type	Fiber count	Nominal diameter (W×H mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FSF-S1	24	9.1×16.6	135	3000	1500
OFC-24-SSF-S1	24	8.1×15.6	130	3000	1500

### Metallic armored, loose tube stranded

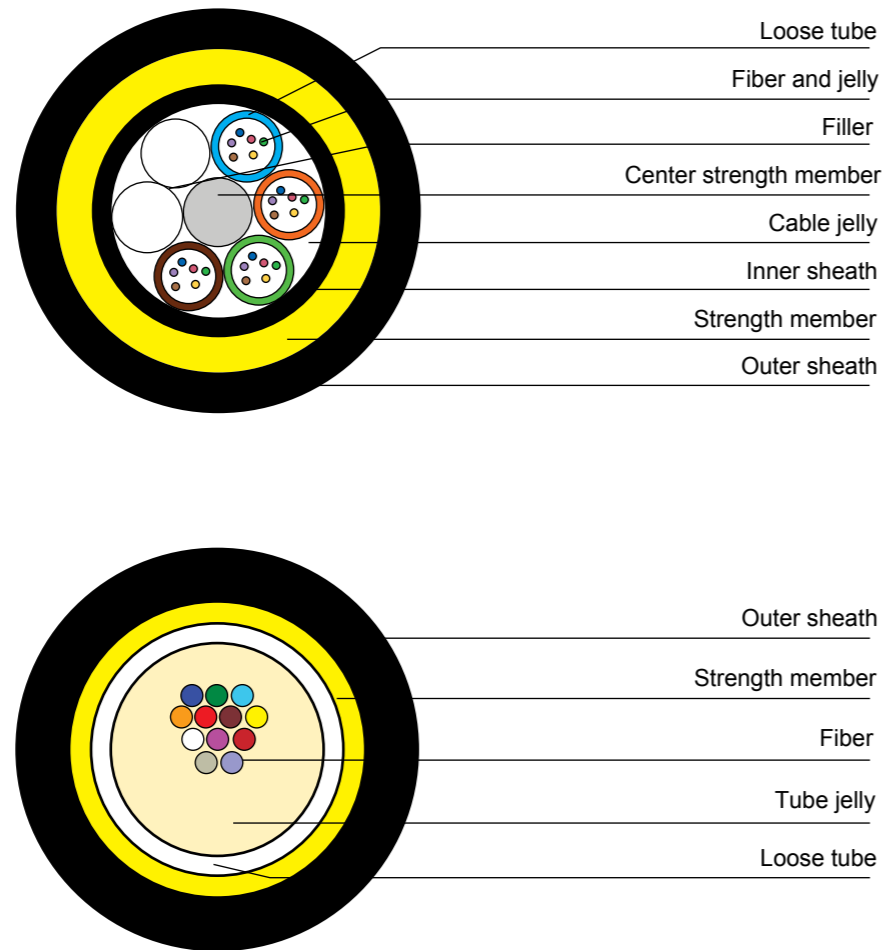
Cable type	Fiber count	Nominal diameter (W×H mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FStSF-S1	24	10.3×17.8	175	3000	2000
OFC-24-SStSF-S1	24	9.3×16.8	170	3000	2000
OFC-24-FAISF-S1	24	10.1×17.6	155	3000	2000
OFC-24-SAISF-S1	24	9.1×16.6	150	3000	2000

### Central tube structure

Cable type	Fiber count	Nominal diameter (W×H mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-CSF-S1	24	6.5×13.7	115	3000	1500
OFC-24-CStSF-S1	24	8.0×15.2	145	3000	2000
OFC-24-CAISF-S1	24	8.0×15.2	130	3000	1500

# ADSS

## Cross Section Drawing:



## Characteristic and Application:

- ADSS are mainly installed at existing 220kV or lower voltage power lines.
- Layer or central tube design.
- Aramid yarn is used as the strength member to assure the tensile and strain performance, and Du Pont is our only partner.
- Outer sheath can be classified into PE and Tracking resistance PE to correspond the space potential below and more than 12kV.
- ADSS(stranded layer type)maximum fiber count: 312.
- ADSS(stranded layer type)maximum span can be up to 1500m.

## Typical Parameters:

### Stranded Layer Type

ZTT Standard	Weather conditions	Max Span (m)	RTS (kN)	MAT (kN)	Crush (N/10cm)	Weight (kg/km)		Diameter (mm)
						PE	AT	
OFC-24-FASA-S1	Temperature range: -40~+70℃ Max.ice thickness: 5mm Max wind speed: 25m/s	100	8.5	3.4	2200	124	133	11.6
OFC-24-FASA-S1		200	15.3	6.1	2200	131	139	12.0
OFC-24-FASA-S1		300	20.4	8.2	2200	136	145	12.3
OFC-24-FASA-S1		400	25.5	10.2	2200	141	150	12.5
OFC-24-FASA-S1		500	30.6	12.2	2200	146	156	12.8
OFC-24-FASA-S1		600	39.1	15.6	2200	166	176	13.8
OFC-24-FASA-S1		700	45.9	18.4	2200	179	190	14.2
OFC-24-FASA-S1		800	52.7	21.1	2200	186	197	14.5
ADSS-24B1-900m		900	59.5	23.8	2200	192	204	14.8
OFC-24-FASA-S1		1000	66.3	26.5	2200	197	209	15.1
OFC-24-FASA-S1		1100	71.4	28.6	2200	202	214	15.3
OFC-24-FASA-S1		1200	76.5	30.6	2200	215	226	15.5
OFC-24-FASA-S1		1500	90.0	36.0	2200	230	245	16.1

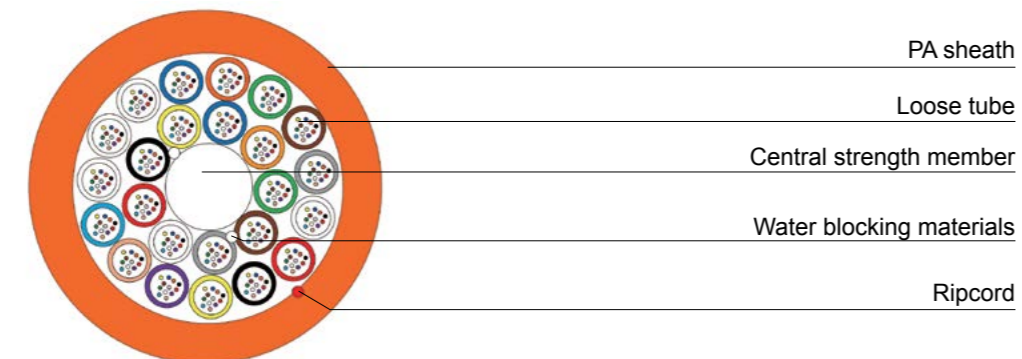
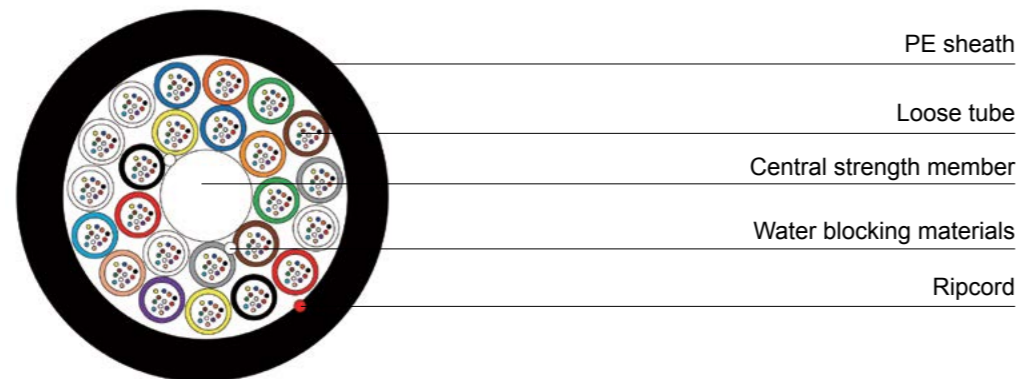
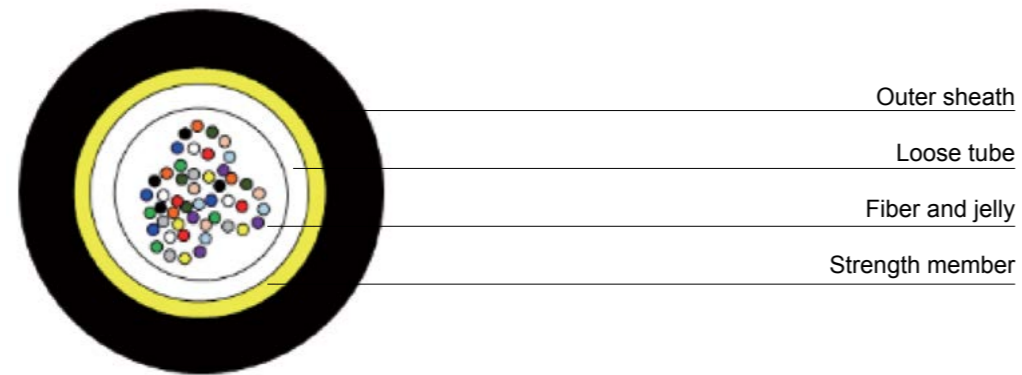
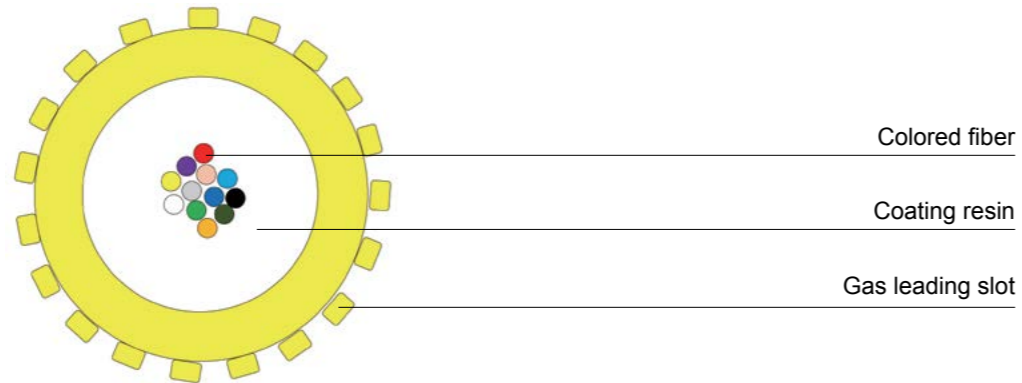
### Central Tube Type

ZTT Standard	Weather conditions	Max Span (m)	RTS (kN)	MAT (kN)	Crush (N/10cm)	Weight (kg/km)		Diameter (mm)
						PE	AT	
OFC-24-CASA-S1	Temperature range: -40~+70℃ Max.ice thickness: 5mm Max wind speed: 25m/s	50	5.0	2.0	2200	55	59	8.0
OFC-24-CASA-S1		100	7.5	3.0	2200	57	61	8.2
OFC-24-CASA-S1		200	12.5	5.0	2200	65	70	8.6

\* The above designs are ZTT's typical options,and ZTT can provide any specific cable according to your requirement.

# Micro Fiber and Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 288 fibers) or central tube structure (up to 96 fibers)
- Air blown fibers (2-12 fibers), outer surface promoting low-friction
- Aramid yarns, glass yarn or other reinforcement as strength member
- Light weight, small size, easy for blowing
- Saving the source of duct
- Good water penetration, mechanical and environmental performance
- PE, PA or LSZH sheath materials
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

### Blow fiber unit

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
EPFU	2-12	1.1~1.8	2~4	15	200

### Central tube structure

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-48 -CAMD-S1	48	4.1	15	100	300

### Loose tube stranded (PE sheath)

Cable type	Fiber count	Fiber type	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FMD-S1	24	250±10µm	5.0	25	150	500
OFC-288 -FMD-S1	288	200±10µm	8.0	62	800	500
OFC-288 -FMD-S1	288	250±10µm	10.0	98	1500	700

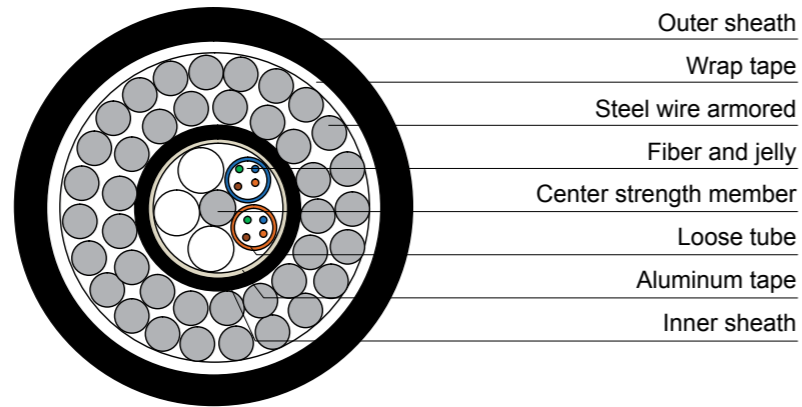
### Loose tube stranded (PA sheath)

Cable type	Fiber count	Fiber type	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-288-FMD-S6	288	200±10µm	8.0	66	800	500
OFC-288-FMD-S6	288	250±10µm	10.0	103	1500	700



# Underwater Installation Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 216 fibers)
- Steel wire or FRP for center strength member
- Could be installed in the island, river or lake
- Could also be used for directly buried installation
- Good water penetration, mechanical and environmental performance
- In accordance with IEC, ITU and EIA standards

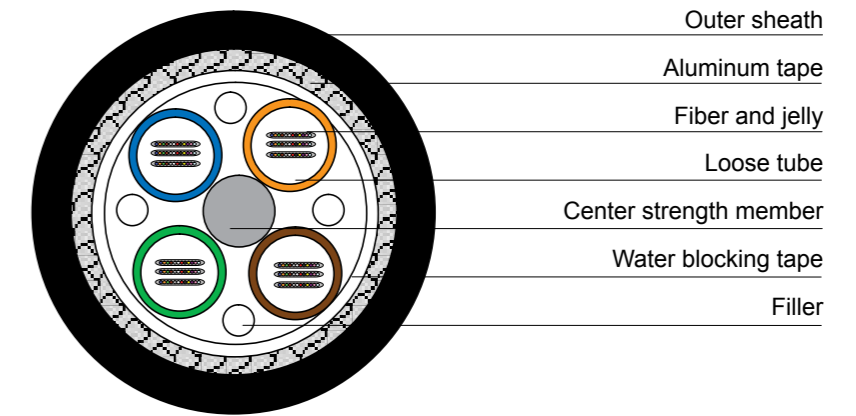
## Typical Parameters:

Metallic armored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FSwUW-S1	24	15.3	380	10000	5000
OFC-24-SSwUW-S1	24	15.7	410	10000	5000
OFC-24-FSw2UW-S1	24	18.9	800	20000	6000
OFC-24-SSw2UW-S1	24	19.3	860	20000	6000

# Ribbon Cable

## Cross Section Drawing:



## Characteristic and Application:

- S-Z stranded (up to 1152 fibers) or central tube structure (up to 576 fibers)
- Metallic, non-metallic armored or unarmored
- Steel wire or FRP for center strength member
- Good water penetration, mechanical and environmental performance
- PE or LSZH sheath materials
- In accordance with IEC, ITU and EIA standards

# All Dry Cable

## Typical Parameters:

### Unarmored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-144-R-FD-S1	144	15.5	175	1500	1500
OFC-144-R-SD-S1	144	15.5	200	1500	1500

### Metallic armored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-144-R-FAID-S1	144	16.5	205	1500	1500
OFC-144-R-FStD-S1	144	16.7	230	1500	2000
OFC-144-R-FStDB-S1	144	18.5	285	1500	3000
OFC-144-R-FAStD-S1	144	18.3	260	1500	3000

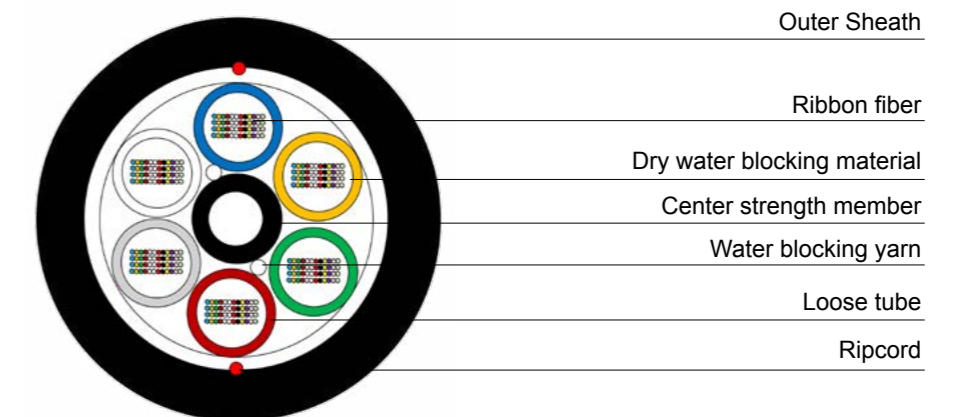
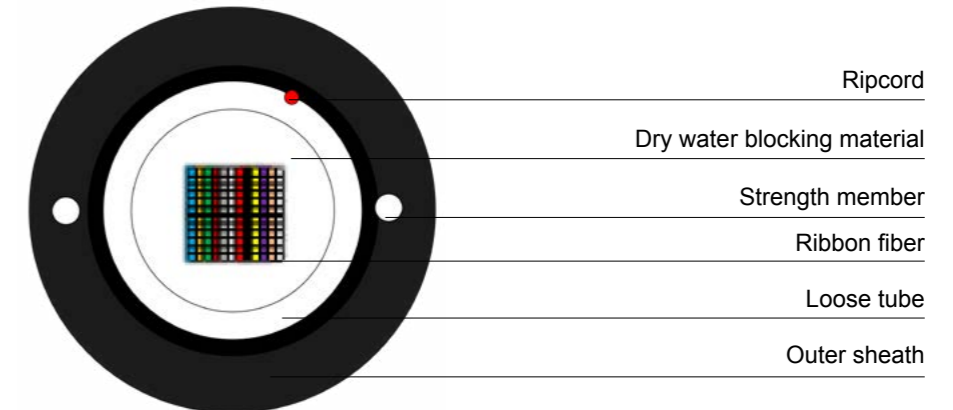
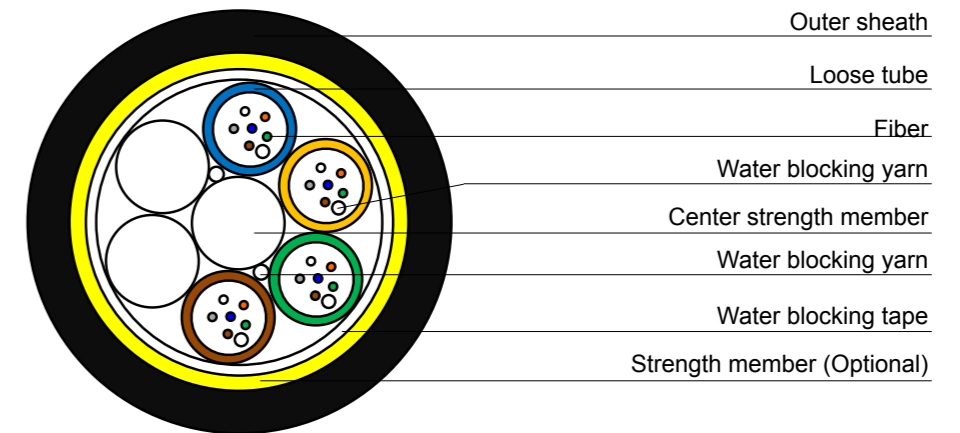
### Non-metallic armored, loose tube stranded

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-144-R-FAD-S1	144	15.7	180	2000	1500
OFC-144-R-FGD-S1	144	15.7	180	2000	1500

### Central tube structure

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-144-R-CStSwD-S1	144	15.0	280	1500	2000

## Cross Section Drawing:





### Characteristic and Application:

- Gel-free cable core, using dry water-blocking material to provide good water resistance performance
- Separate fibers and ribbon fibers as optical unit, and ribbon fiber design with easy and convenient splice operation
- Convenient for installation, reduce cable preparation and installation time
- Speed fiber access and clean up
- Reduce the number of tools required
- Metallic, non-metallic armored or unarmored
- Duct, directly bury or aerial installation

### Typical Parameters:

#### Duct

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S1	24	9.5	70	1000	1000
OFC-24-FStD-S1	24	10.7	110	1000	2000
OFC-24-FAD-S1	24	9.7	74	1000	1000

#### Directly bury

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FStDB-S1	24	13.5	155	2000	3000
OFC-24-FADB-S1	24	11.5	100	2000	3000

#### Aerial (According to different span and weather conditions)

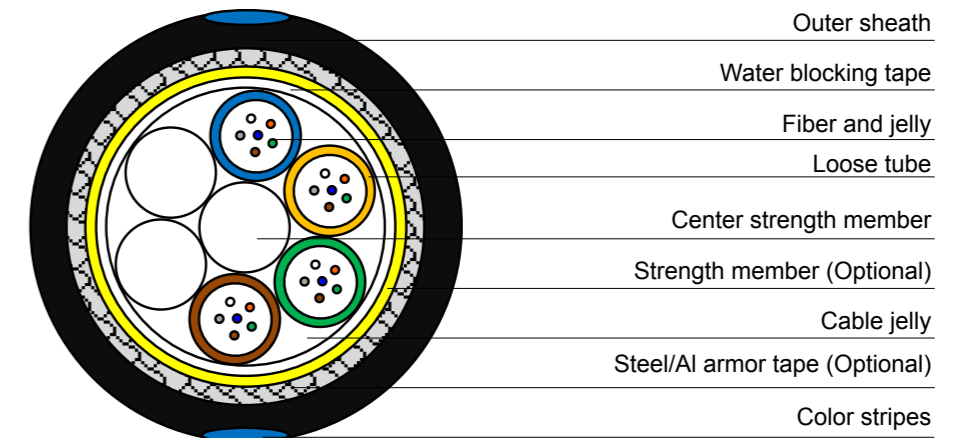
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FASA-S1 (100m)	24	10.9	93	3000	2200
OFC-24-FSF-S1 (100m)	24	9.5*17.0	130	3000	2200

#### All dry ribbon optical cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-144-R-CD-S1	144	13.9	171	2000	2200
OFC-288-R-FD-S1	288	22.0	275	2000	2200

## Color Stripe Cable

### Cross Section Drawing:



### Characteristic and Application:

- Easy to distinguish with color stripes along cable jacket
- Provide one or more stripes
- Provide color customized according to requirement
- Color stripe with ultraviolet resistant
- Metallic, non-metallic armored or unarmored
- Duct, directly bury or aerial installation

# 3-Strand Light Short Span Aerial Cable

## Typical Parameters:

### Duct

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S1	24	9.5	75	1000	1000
OFC-24-FStD-S1	24	10.7	115	1000	2000
OFC-24-FAD-S1	24	9.7	78	1000	1000

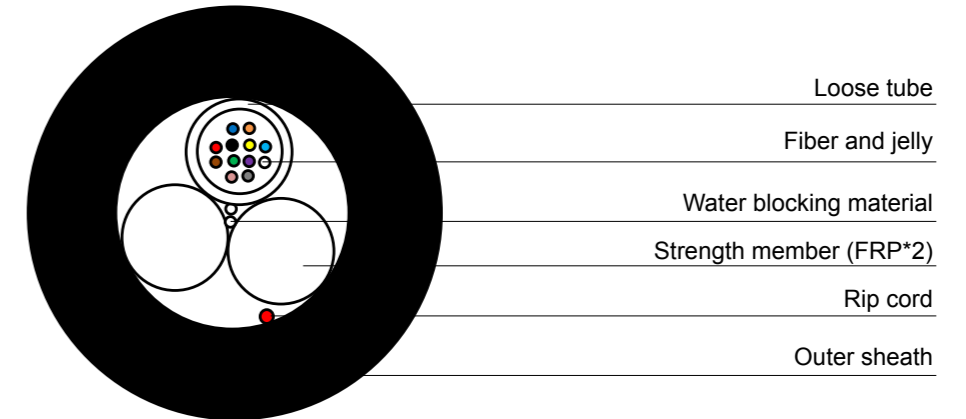
### Directly bury

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FStDB-S1	24	13.1	145	2000	3000
OFC-24-FADB-S1	24	11.5	105	2000	3000

### Aerial (According to different span and weather conditions)

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FASA-S1 (100m)	24	10.9	97	3000	2200
OFC-24-FSF-S1 (100m)	24	9.5*17.0	135	3000	2200

## Cross Section Drawing:



## Characteristic and Application:

- Small size and light weight
- Two FRP as strength member to provide good tensile performance
- Gel filled or gel free, good waterproof performance
- Low price, high fiber capacity;
- Supply to Brazil more than 5000km;
- Applicable for short span aerial and duct installation

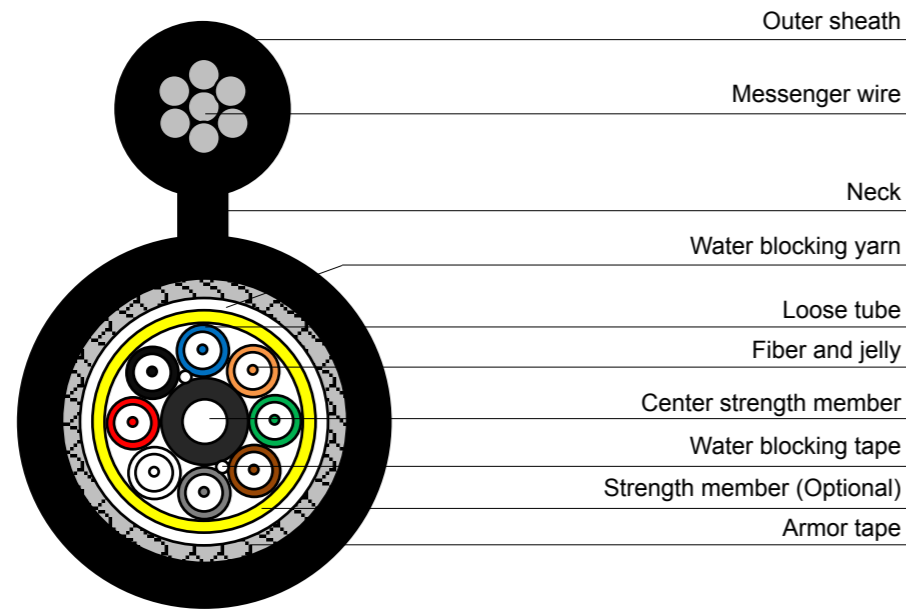
## Typical Parameters:

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-12-FSA-S1	12	7.2	47	1000	1000



# Easy Branch Figure-8 Self-supporting Aerial Cable

## Cross Section Drawing:



## Characteristic and Application:

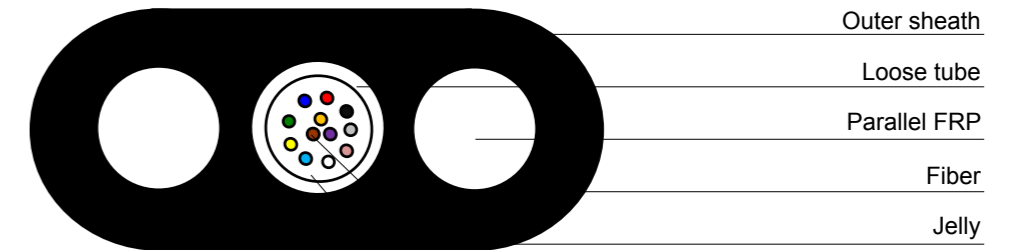
- One fiber per tube, easy to deploy
- S-Z stranded (up to 24 fibers)
- Optional notch opposite along sheath, convenience for cable stripe
- Supply to Indonesia more than 25000km;
- Applicable for self-supporting aerial installation

## Typical Parameters:

Cable type	Fiber count	Nominal diameter (W*H mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-8-FAAISA-S1	8	8.6*16.2	140	3000	2200
OFC-12-FAAISA-S1	12	10.2*17.8	160	3000	2200
OFC-24-FAAISA-S1	24	12.2*19.8	195	3000	2200

# Lightning Protective Light Cable

## Cross Section Drawing:



## Characteristic and Application:

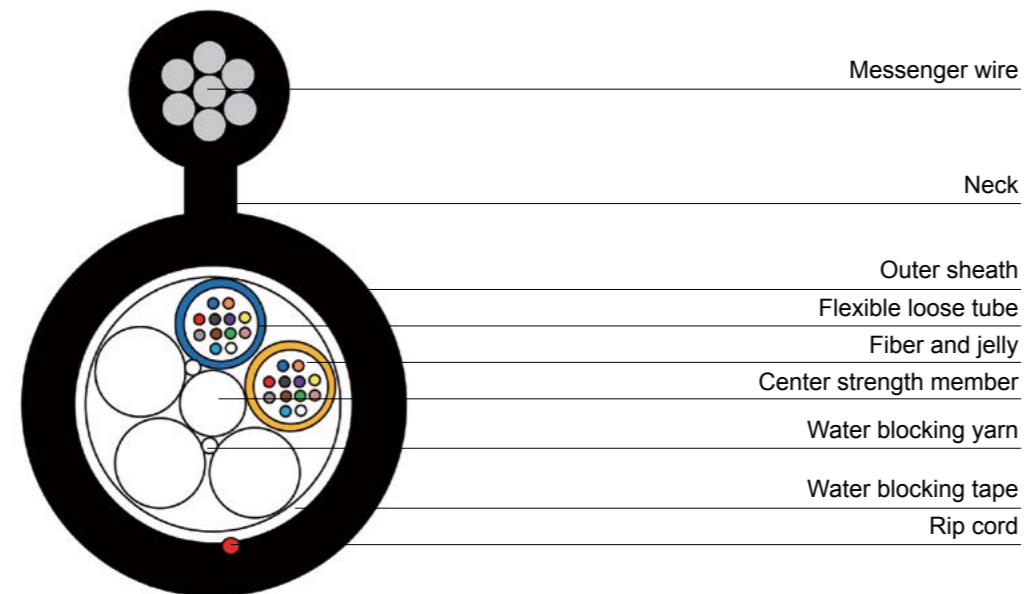
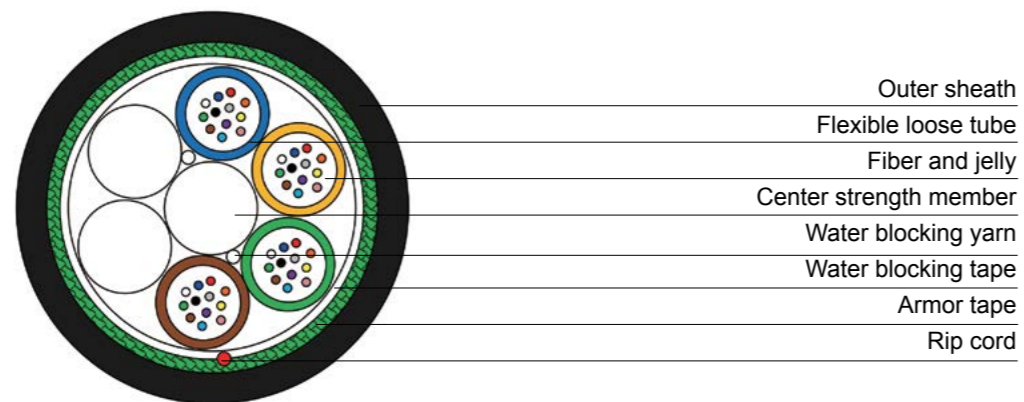
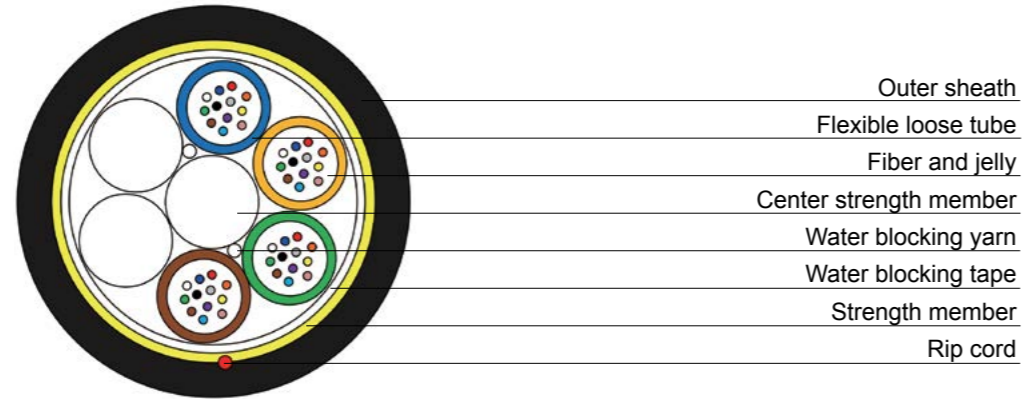
- Using nonmetal reinforcement, eliminate lightning hazards
- With light weight, suitable for laying different environment
- Prevent the birds peck, rodent resistance
- Production simplification, energy conservation and environment protection
- Applicable for short span aerial and duct installation

## Typical Parameters:

Cable type	Fiber count	Nominal diameter (W*H mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-12-CFSA-S1	12	4.1*8.1	36	1500	2000

# Flexible Loose Tube Cable

## Cross Section Drawing:



## Characteristic and Application:

- The flexible loose tube could be stored in the joint box instead of only fibers to reduce fiber splice and installation time, easy to future maintenance.
- The loose tube excellent bending performance with a minimum bending radius  $\leq 3 \times$  tube OD.
- Gel-filled or Gel-free for Flexible tube.
- S-Z stranded (up to 312 fibers) or central tube structure (up to 144 fibers)
- Good mechanical and environmental performance, consistent with common PBT loose tube structure.
- Applicable for duct, indoor and self-supporting installation

## Typical Parameters:

### ADSS Cable Type

Cable type	Typical span	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-48-FASA-S1	200	11.0	100	4500	1000

### Duct and Direct Buried Cable Type

Cable type	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance(N/10cm)
OFC-48-FStD-S1	12.1	135	2700	2200

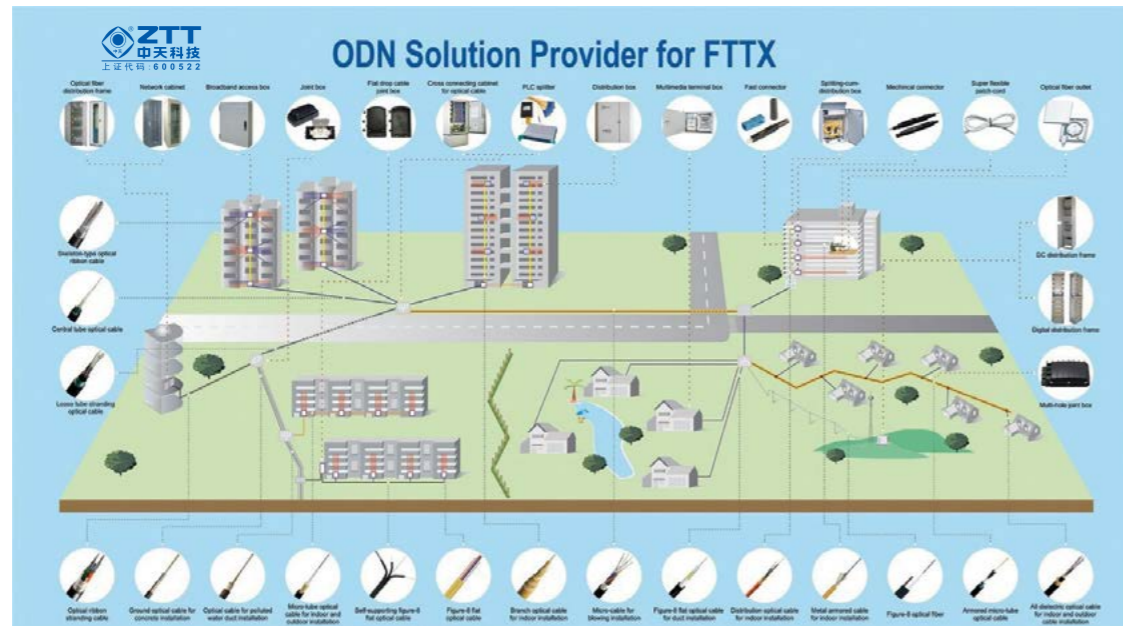
### Figure 8 Aerial Cable Type

Cable type	Nominal diameter (mm) (W*H)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-48-FSF-S1	9.1*16.1	128	2700	2000

\*The max. span length can be adjusted according to the different requirements. The max. span length can be 1600m



# FTTx Cable



## Characteristic and Application:

- Tight buffer fiber or colored fiber
- Aramid yarns, steel wire or FRP for strength member
- Easy for connection between equipments
- Bending-loss insensitive
- PVC, LSZH sheath materials
- Indoor or outdoor installation
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

### Round FTTx cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-2-DiC-S5	2	3.0	9	100	500
OFC-2-BC-S5	2	5.5	17	100	500

### Ribbon FTTx cable

Cable type	Fiber count	Nominal diameter (W×Hmm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-2-R-DiC-S5	12	5.0×2.9	10	200	500

### Spiral steel wire armored FTTx cable

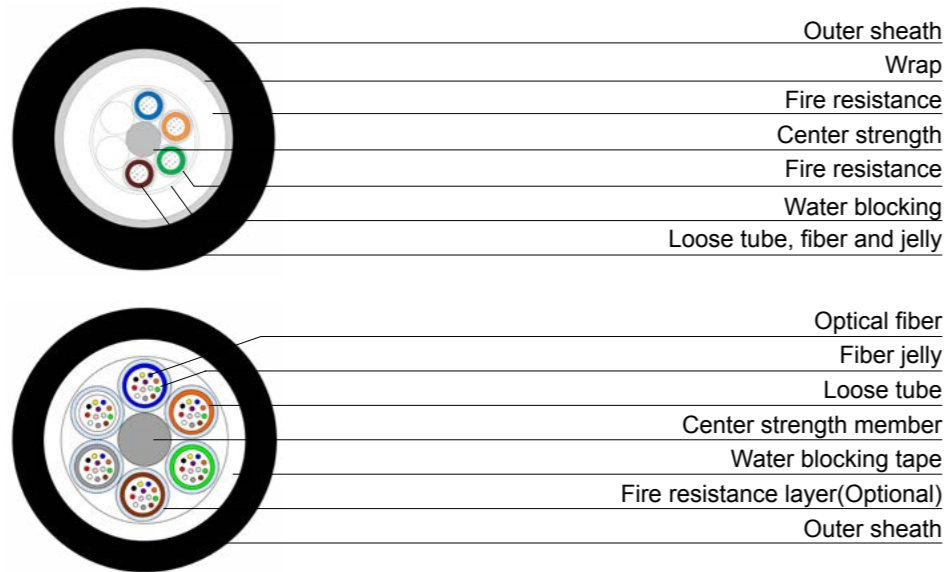
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-2-ADC-S5	2	4.0	22	200	3000

### Flat drop FTTx cable

Cable type	Fiber count	Nominal diameter (W×H mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-2-DC-S5	2	4.0×2.0	15	180	1000
OFC-2-FDC-S3	2	5.5×2.0	22	600	1000

# Flame-retardant Cable and Fire-resistance Cable

## Cross Section Drawing:



## Typical Parameters:

### Flame-retardant cable

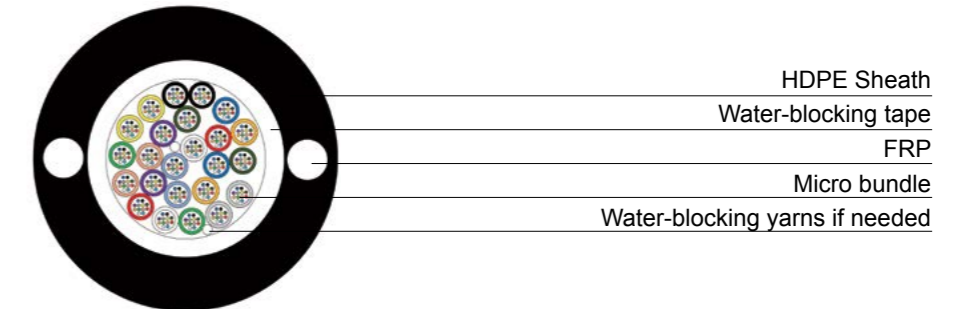
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S3 Single sheath	24	10.1	115	1000	1000
OFC-24-SD-S3 Single sheath	24	10.1	135	1500	1000
OFC-24-FD-S3 Double sheath	24	12.5	175	1000	2200
OFC-24-SD-S3 Double sheath	24	12.5	200	1500	2200

### Fire-resistance cable

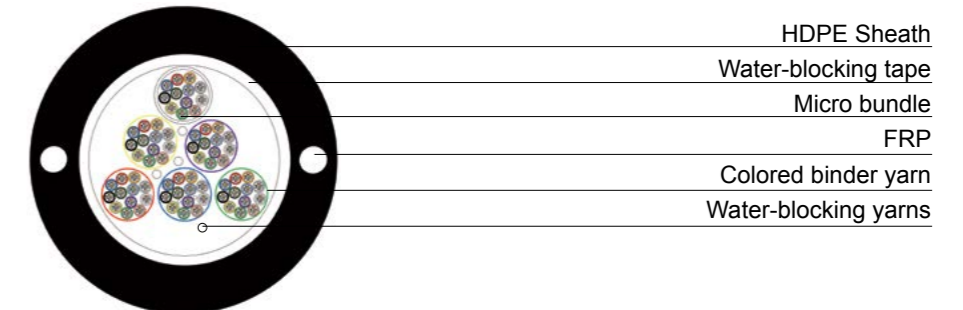
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-SD-S3 Single sheath	24	11.5	175	1500	1000
OFC-24-SD-S3 Double sheath	24	13.5	220	1500	2200

# Micro Bundle Cable-Duct(DiC)Type

## Cross Section Drawing:



Drawing of duct cable up to 288Fo (Modularity 12)



Drawing of duct cable 432 to 864Fo (Modularity 12)

## Characteristic and Application:

- Easy to access the fibers in micro bundles without any tools
- Gel-filled or Gel-free for micro tube with 12/6 fibers inside
- At least 2 parallel FRP as strength members (4 FRP also possible if needed)
- HDPE for outer sheath
- Good water penetration, mechanical and environmental performance
- In accordance with IEC,ITU and EIA standards

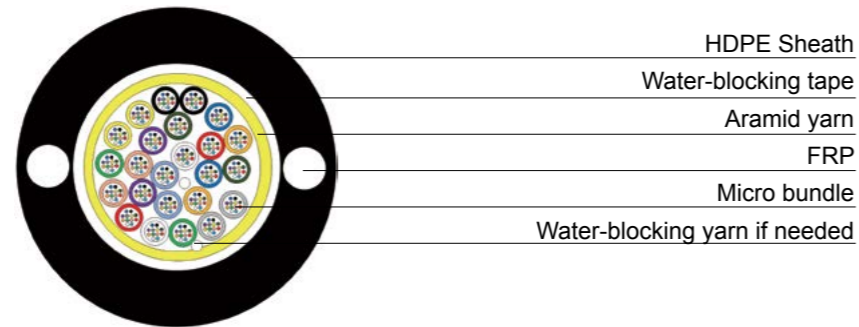
## Typical Parameters:

Cable type	Fiber counts	Nominal OD(mm)	Nominal Weight (kg/km)	Pulling force(N)	Crush resistance (N/10cm)
OFC-24DiC(W)-D-S1	24(M12)	8.0	40	1000	2000
OFC-432DiC(W)-D-S1	432(M12)	17.4	191	2700	2000



## Micro Bundle Cable-ADSS(FASA) Type

### Cross Section Drawing:



Drawing of aerial cable 12 to 288Fo (Modularity 12)

### Characteristic and Application:

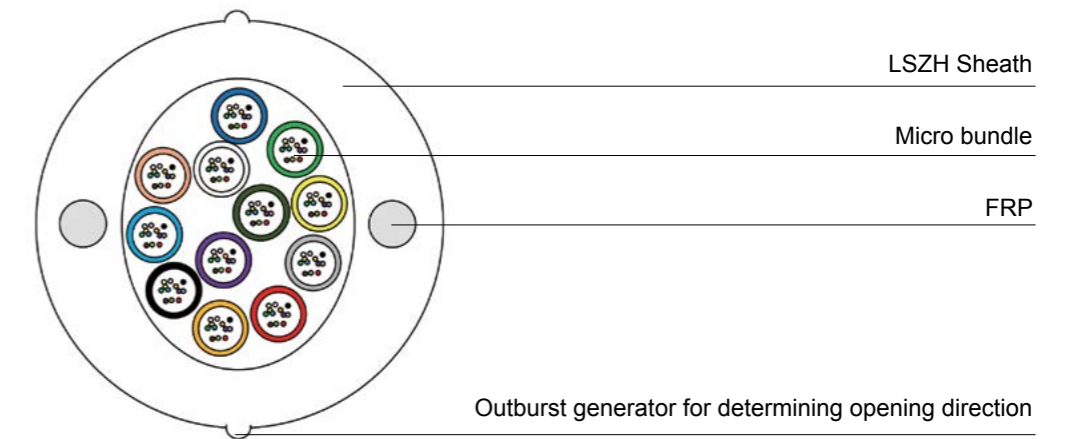
- Easy to access the fibers in micro bundles without any tools
- Gel-filled or Gel-free for micro tube with 12/6 fibers inside
- At least 2 parallel FRP as strength members (4 FRP also possible if needed)
- Aramid yarn
- HDPE for outer sheath
- Good water penetration, mechanical and environmental performance
- In accordance with IEC,ITU and EIA standards

### Typical Parameters:

Cable Type	Fiber counts	Nominal OD(mm)	Nominal Weight (kg/km)	Pulling force(N)	Crush resistance (N/10cm)
OFC-24-FASA(W)-D-S1	24(M12)	8.8	48	1400	2000
OFC-144-FASA(W)-D-S1	48(M12)	9.2	54	1400	2000

## Micro Bundle Cable-Indoor(Riser) Type

### Cross Section Drawing:



Drawing of riser cable 12 to 288Fo (Modularity 12)

### Characteristic and Application:

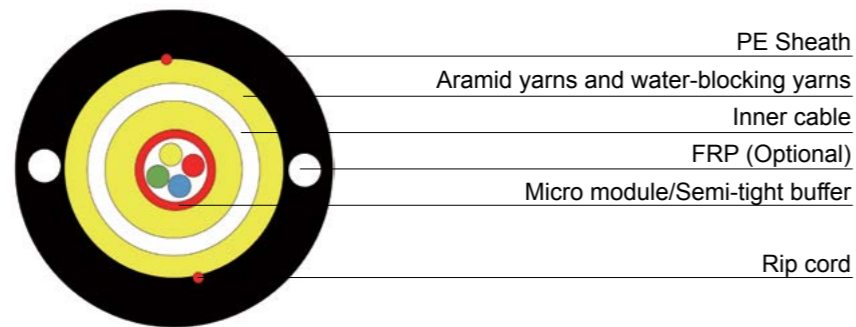
- Easy to access the fibers in micro bundles without any tools
- Micro tube with 12/6 fibers inside
- 2 parallel FRP as strength members
- LSZH for outer sheath
- Good mechanical and environmental performance
- In accordance with IEC,ITU and EIA standards

### Typical Parameters:

Cable Type	Fiber counts	Nominal OD(mm)	Nominal Weight (kg/km)	Pulling force(N)	Crush resistance (N/10cm)
OFC-24-FASA(W)-D-S3	24(M12)	8.7	63	500	1000
OFC-144-FASA(W)-D-S3	48(M12)	11.5	104	500	1000

# Micro Bundle Cable-Outdoor/Indoor Type

## Cross Section Drawing:



Drawing of outdoor and indoor drop cable 1 to 4Fo

## Characteristic and Application:

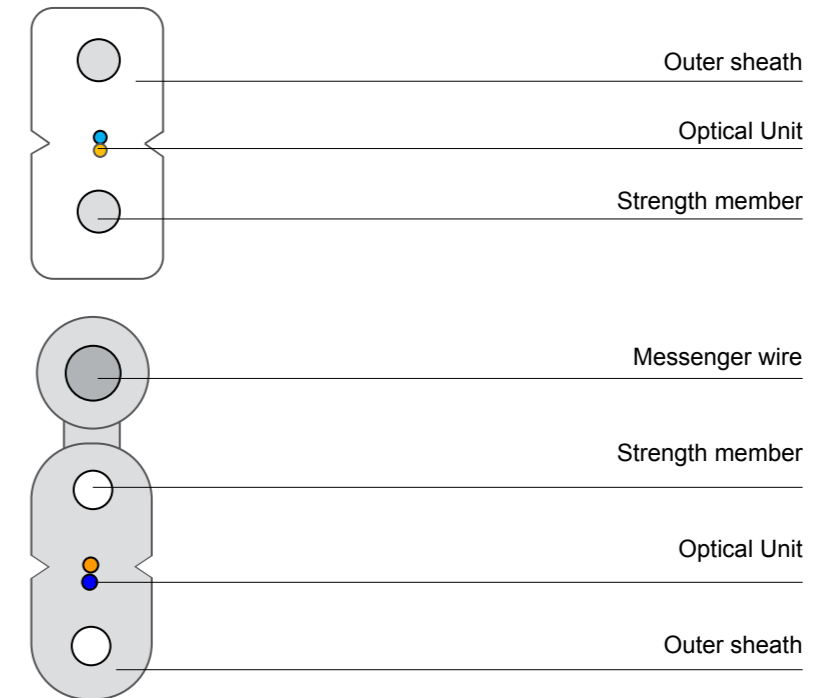
- Easy to access the fibers in semi-tight buffer(1FO) or micro module without any tools
- Micro module with 2/4 fibers, or semi-tight buffer with 1fiber inside
- 2 parallel FRP as strength members (Optional)
- LSZH for inner cable sheath, PE for outer sheath
- Good mechanical and environmental performance
- In accordance with IEC,ITU and EIA standards

## Typical Parameters:

Cable Type	Fiber counts	Nominal OD(mm)	Nominal Weight (kg/km)	Pulling force(N)	Crush resistance (N/10cm)
OFC-1/2/4G.657A2-DC-S1	1/2/4	5.2	22	800	2000

# Low Friction Drop Cable

## Cross Section Drawing:



## Characteristic and Application:

- Colored fiber used as optical unit
- Steel wire as strength member
- Low friction coefficient $\leq 0.25$  for figure-8 drop cable, and low friction coefficient $\leq 0.15$  for indoor drop cable
- Sheath color according to customer requirement
- Could be used for indoor/outdoor distribution
- Easy and convenience installation and connection
- Good flame retardant, mechanical and environmental performance
- In accordance with IEC,ITU and EIA standards

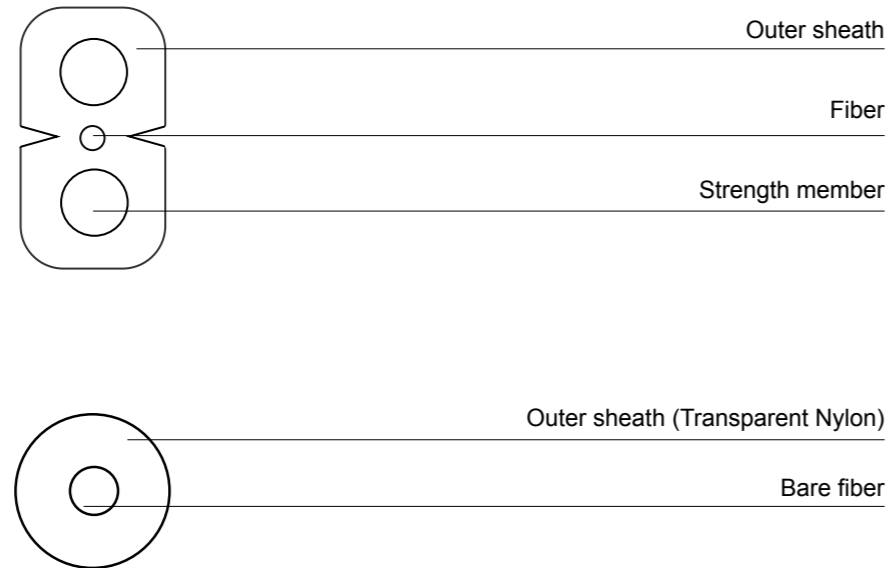
## Typical Parameters:

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-1-DC-S3	1	1.6*2.0	7	100	1000
OFC-1-FDC-S3	1	2.0*5.3	20	600	2200



# Invisible Drop Cable

## Cross Section Drawing:



## Characteristic and Application:

- Installed cable almost undetectable to the casual observer
- Fast installation
- Apply to all kinds of indoor environment
- Cable with adhesive glue is against the wall tightly after construction, but it can be taken with strong strength and it's not easy to damage the lager area walls

## Typical Parameters:

### Round type

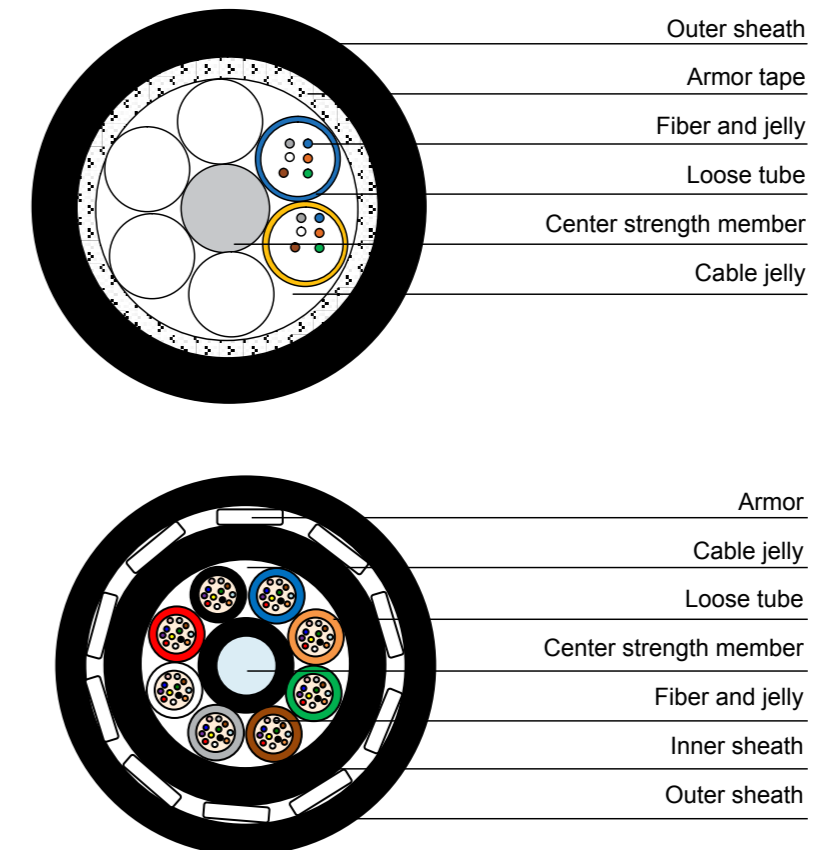
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-1-DC-S6	1	0.9	0.9	4	10

### Flat type

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-1-DC-S3	1	2.0*3.0	9	80	1000

# Anti-rodent or Anti-termite Cable

## Cross Section Drawing:

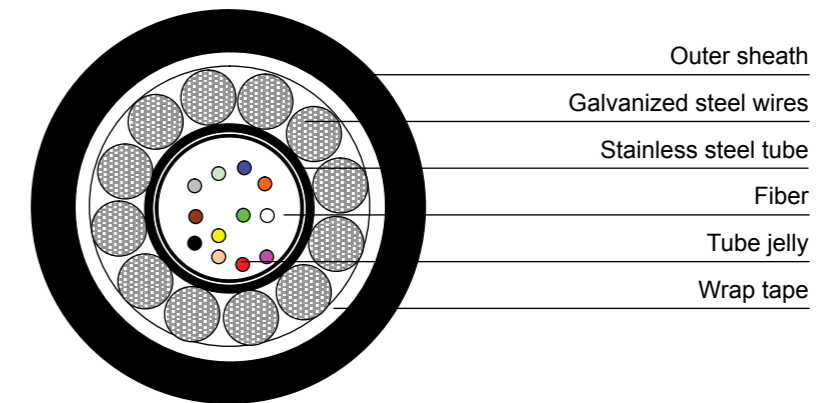


## Characteristic and Application:

- S-Z stranded (up to 624 fibers) or central tube structure (up to 144 fibers)
- Metallic, non-metallic armored or unarmored
- Steel wire or FRP for center strength member
- Good water penetration, mechanical and environmental performance
- Glass yarns, flat FRP or round FRP armor providing good anti-rodent performance
- Nylon sheath providing good anti-termite performance
- In accordance with IEC, ITU and EIA standards

# Sewer Cable

## Cross Section Drawing:



## Characteristic and Application:

- Up to 96 fibers
- Good water penetration, mechanical and environmental performance
- Good corrosion resisting, anti-rodent and anti-insect performance
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-24-CPSwD-S1	24	7.8	175	3000	6000

## Typical Parameters:

### Anti-rodent or anti-termite additive material cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S1	24	9.5	80	1000	1500

### Steel tape armored anti-rodent cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-SStD-S1	24	9.7	108	2000	2000

### Glass yarns armored anti-rodent cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FGD-S1	24	10.3	95	2000	2000
OFC-24-SGD-S1	24	9.1	90	2000	2000

### FRP armor anti-rodent cable

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FGDB-S1(Flat)	24	13.5	170	4000	3000
OFC-24-FGDB-S1(Round)	24	15.8	220	4000	3000

### Nylon sheath anti-termite cable

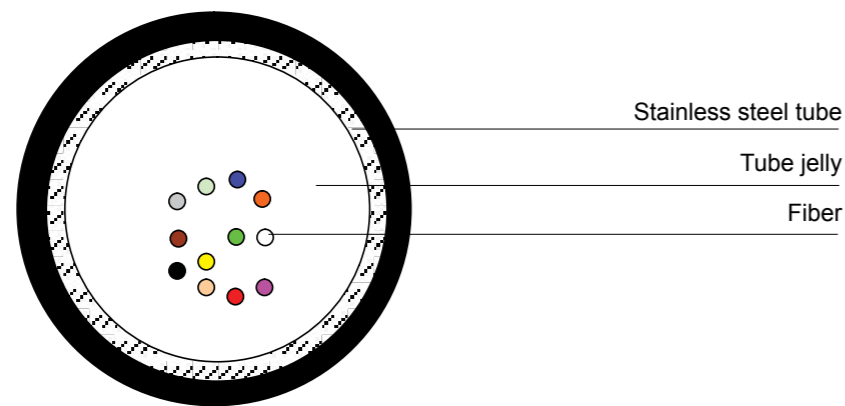
Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force (N)	Nominal crush resistance (N/10cm)
OFC-24-FD-S6	24	10.2	90	1000	2000





# Pavement Cable

## Cross Section Drawing:



## Characteristic and Application:

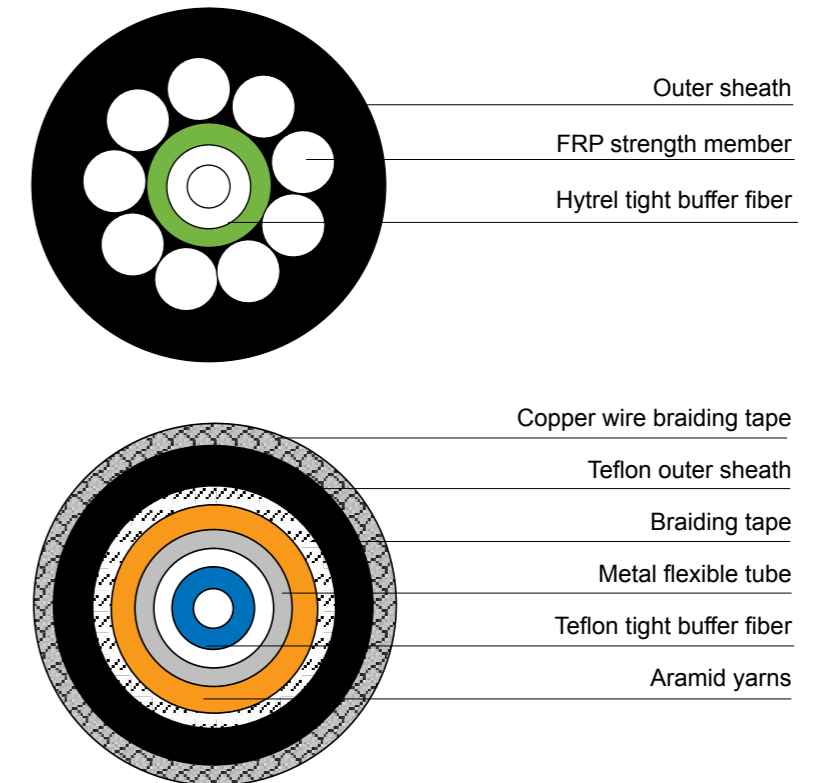
- Up to 96 fibers
- Good water penetration, mechanical and environmental performance
- Good crush resistance for concrete road embedding installation with low depth of digging
- In accordance with IEC, ITU and EIA standards

## Typical Parameters:

Cable type	Fiber count	Nominal diameter (mm)	Nominal weight (kg/km)	Nominal pulling force(N)	Nominal crush resistance (N/10cm)
OFC-24-CPD-S1	24	4.8	30	500	2000

# Detection Cable

## Cross Section Drawing:

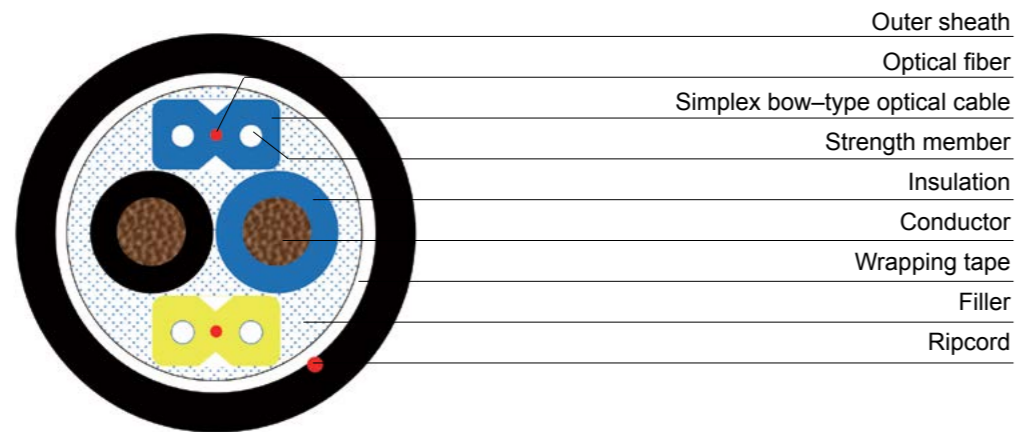


## Characteristic and Application:

- Detect the point of continuity; comprehensively detect the various points of the object.
- Anti-high pressure and strong electromagnetic fields, radiation-resistant; can be used in a variety of hazardous working environments.
- Simple to install, and can be used in various occasions for a long time.
- Has a good performance of lateral compression resistance.
- Used for stress sensing of dams, bridges and high buildings to prevent building collapse.
- Used for the temperature and pressure measurement of oil wells and coal mines.
- Used for the temperature monitoring and detection of power plants and substations.
- Used for monitoring cables and transmission lines.

# Optical and Electrical Composite Cable -RRU/BBU Connect Cable

## Cross Section Drawing:



## Characteristic and Application:

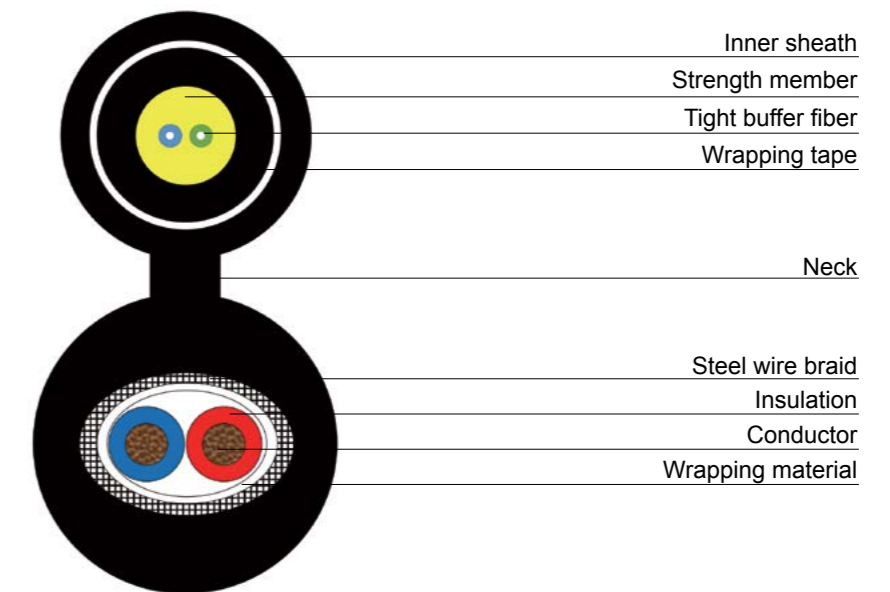
- Optical and electric hybrid cable
- LSZH or PVC outer sheath with good Flame retardant performance
- Good water penetration, mechanical and environmental performance
- In accordance with IEC, ITU and GB standards

## Typical Parameters:

Cable Type	Simplex bow-type optical cable	Sub-power cable unit	Outer sheath diameter	Tensile strength	Crush resistance (N/10cm)
1P1F-GDVV 2G.657A2 (Bowtype)+ 2×1.5mm <sup>2</sup> (RV)	2.1(±0.1)*1.6(±0.1) mm	1.6mm	9.0mm	600/300	2200/1100

# Optical and Electrical Composite Cable -Cabinet Internal Cable

## Cross Section Drawing:



## Characteristic and Application:

- Figure-8 shaped structure, providing excellent peeling performance
- Good Flame retardant performance
- Suitable for indoor and outdoor cabinet internal wiring
- Optical unit with good water penetration performance
- Optical and electric unit separated to each other and easy to install

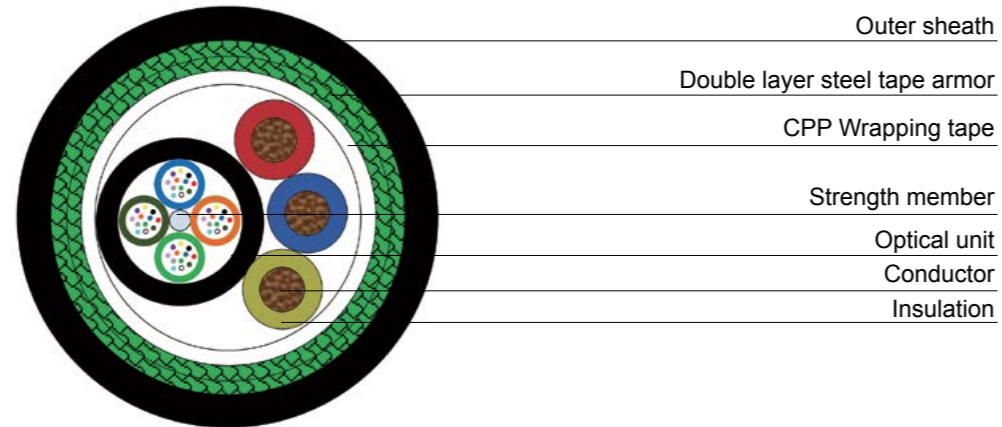
## Typical Parameters:

Cable Type	Sub-optical cable unit	Sub-power cable unit	Cable diameter	Tensile strength	Crush resistance (N/10cm)
OPLC-14AWG* 2+2G.657A2	4.8±0.2mm	3.0±0.2mm	(8.8±0.5)mm *(16.8±0.5)	1000	2000



# Optical and Electrical Composite Cable -Smart Grid Cable

## Cross Section Drawing:



## Characteristic and Application:

- Small dimension, light weight
- Good bending performance and pressure resistance;
- Optical and electric transmission technology to solve the problem of electricity consumption in network construction.

## Typical Parameters:

Cable Type	Sub-optical cable unit	Sub-power cable unit	Cable diameter	Tensile strength	Crush resistance (N/10cm)
OPLC-VV22-0.6/1 3×2.5+CTG-24B1	5.6±0.2mm	3.4±0.2mm	16.9±0.5mm	1000	2000



ZTT has established a complete, advanced quality inspection center of controlling raw materials and products quality. To ensure high quality of fiber optic cables, ZTT always selects raw materials of international and domestic brands. ZTT also has received authentications of ISO9001, ISO14001 and ISO45001.



## Excellent Test Facilities



ZTT has passed the tests by authoritative institutions at home and abroad. The authoritative institutions include Quality Supervision & Inspection Center of Optical Communication Products, Ministry of Information Industry of P.R.C, Shanghai Electric Cable Research Institute, State Grid Electric Power Research Institute.

## References

### Overseas Reference

Country	Total length
Thailand	434082 km
Vietnam	228835 km
Mexico	191297 km
Philippines	137357 km
Brazil	126936 km
Germany	126905 km
France	91695 km
Indonesia	85356 km
Hongkong	73123 km
Chile	53279 km
Egypt	43321 km
Peru	41161 km
Poland	33074 km

### Reference in China

Country	Total length	Consumer
China	3000000 km	China Telecom
China	4700000 km	China Mobile
China	1000000 km	China Electricity
China	700000 km	China Unicom
China	400000 km	China Sarft
China	100000 km	China Railway