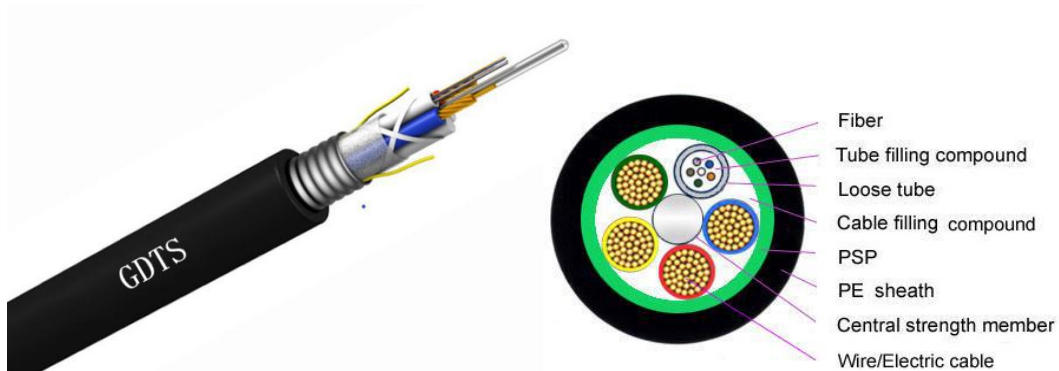


## Hybrid Optic And Electric Composite Cable(GDTS)

### 1、 Cable Drawing



### 2、 Description

The fibers, 250 $\mu$ m, are positioned in a loose tube made of a high modulus plastic. The tubes are filled with a water-resistant filling compound. The cable core is FRP or metallic strength member (some structures need add PE as bedding layer in the strength member). Electric wires and tubes (and fillers) are stranded around the strength member into a compact and circular cable core. The cable core is filled with the filling compound to protect it from water ingress. After two sides PSP are longitudinally applied over the inner sheath, the cable is completed with PE or LSZH outer sheath.

### 3、 Features

- Have good flexibility and mechanical properties
- Photoelectric integration, fully conserve pipeline resources
- The cable part and the optical cable part are relatively independent structure, which is convenient for the introduction, the lead out and the connection of the installation
- Will power lines, telephone lines, TV lines, cable, monitoring line, data line and other network, save the cost
- Optical cable diameter and bending radius are small, in the next small space also can freely install compatible optical signal transmission and power transmission at the same time

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## 4. Application

- Telecom Network Construction
- Construction of communication base stations in rural and remote areas of cities and towns
- Urban residential communities and buildings in the optical fiber
- Security monitoring project
- And other occasions where information and power are needed.

## 5. Specification

### 1) Fiber Allocation Scheme

Fiber number	Tube number	Fiber per tube	Fiber type
6	1	6F	OS1,OS2,OM1,OM2,OM3,OM4

### 2) Cable construction details

Items		Description
Number of fiber		6 cores
Copper wire		RV-2*2.5mm
		RV-4*2.5mm
		RV-6*2.5mm
		RV-8*2.5mm
Central strength member	Material	FRP or Metallic strength member
	size	2.0 mm
Loose tube	material	PBT
	Qty	1
Water resistance / waterproof performance		Long term immersion in water without water seepage
Outer sheath	material	PE/HDPE
	Color	Black

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**3) Standard color of fiber and tube**

The color code of the tubes and the individual fibers, shall be in accordance with the table as below:

Standard Colour Identification						
No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Slate	White
No.	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Pink	Aqua

Note: The color can be required by customers.

**4) Cable Mechanical characteristic**

Items	Description	
Weight	RV-2*2.5mm	347kg/km
	RV-4*2.5mm)	382kg/km
	RV-6*2.5mm)	502kg/km
	RV-8*2.5mm	628kg/km
Installation Temperature range	Except electric wire	-20°C ~ +60°C
	electric wire	0°C ~ +60°C
Operation and transport temperature	Electric wire	-15°C ~ +70°C
	Other materials except electric wire	-40°C ~ +70°C
Min Bending Radius(mm)	Dynamic	30D
	Static	20D
Allowable Tensile Strength(N)	Long term	1500
	short term	3000
Crush Load (N/100mm)	Long term	1000
	short term	3000

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## 5) Requirement for Order

- (1) Fiber sort: Single mode:G652,G655,G657, Multi mode:OM1,OM2,OM3,OM4.
- (2) Fiber brand: YOFC, Corning, Fiberhome,Fujikura,OFS etc.
- (3) Sheath material: PE,LSZH( can be required).
- (4) Sheath color: Black ,can be required.
- (5) The fiber and tube color: according to stranded color, can be required.
- (6) The cable Size: shall be in accordance with the table, can be required.
- (7) Length of cable: generally is 2KM, can be required.
- (8) Other requirement: can be negotiated.

## 6) Fiber Characteristic

Fiber Style		Unit	SM 9/125	MM 50/125	MM 62.5/125
Condition		nm	1310/1550	850/1300	850/1300
Attenuation		dB/km	≤0.35/0.22	≤3.0/1.0	≤3.0/1.0
Dispersion	1310nm	Ps/(nm*km)	≤18	.....	.....
	1550nm	Ps/(nm*km)	≤22	.....	.....
Bandwidth	850nm	MHZ. KM	.....	≥400	≥160
	1300nm	MHZ. KM	.....	≥800	≥500
Zero dispersion wavelength		nm	≥1302, ≤1322	.....	.....
Zero dispersion slope		nm	≤0.091	.....	.....
PMD Maximum Individual Fiber		Ps/km	≤0.2	.....	.....
PMD Design Link Value		Ps(nm <sup>2</sup> *km)	≤0.08	.....	.....
Fiber cutoff wavelength λ <sub>c</sub>		nm	≥1180, ≤1330	.....	.....
Cable cutoff wavelength λ <sub>cc</sub>		nm	≤1260	.....	.....
MFD	1310nm	um	9.2±0.4	.....	.....
	1550nm	um	10.4±0.8	.....	.....

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Numerical Aperture(NA)		.....	0.200± 0.015	0.275± 0.015
Step(mean of bidirectional measurement)	dB	≤0.05	≤0.10	≤0.10
Irregularities over fiber length and point discontinuity	dB	≤0.05	≤0.10	≤0.10
Difference backscatter coefficient	dB/km	≤0.03	≤0.08	≤0.10
Attenuation uniformity	dB/km	≤0.01	.....	.....
Core diameter	um	.....	50±1.0	62.5±2.5
Cladding diameter	um	125.0±0.1	125.0±0.1	125.0±0.1
Cladding non-circularity	%	≤1.0	≤1.0	≤1.0
Coating diameter	um	242±7	242±7	242±7
Coating/chaffinch concentricity error	um	≤12.0	≤12.0	≤12.0
Coating non circularity	%	≤6.0	≤6.0	≤6.0
Core/cladding concentricity error	um	≤0.6	≤1.5	≤1.5
Curl(radius)	um	≤4	.....	.....

## 6. Cable marking and cable reel marking

### 6.1 Cable marking

The cable sheath shall be marked with white characters at intervals of one meter with following information:

- (1) Purchaser' s name
- (2) Cable type
- (3) Fiber type and counts
- (4) Year of manufacture
- (5) Length marking

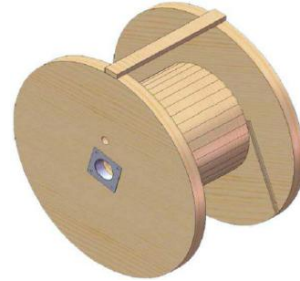
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Notice: cable mark is available if requested by customer.

## 6.2 Cable reel

Details given below shall be marked with a weather materials on both outer sides of the reel flange :

- (1) Cable type and fiber counts
- (2) Length of cable in meters
- (3) Year of manufacture



Notice: shipping mark is available if requested by customer.

## 7、 Packing Informations

- (1) Packing material: Wooden drum
- (2) Packing length: standard length of cable shall be 2 km. Other cable length is also available if required by customer

## 8、 Our certificates

- (1) ISO9002
- (2) SGS, ROHS
- (3) ULE329066
- (4) REACH

## 9、 Testing Lab

No	Device name	No	Device name
1	Optical time domain reflectometer (OTDR)	8	GNZV Cable Torsion Testing Machine
2	Fiber Polarization Mode Dispersion	9	GQNV Cable Flexing Testing Machine
3	Fiber Dispersion ,Strain Tester	10	GJRV Cable Winding Testing Machine
4	High Low Temperature Test Chamber	11	GZDV Cable Vibration Testing Machine
5	Cable Impact Testing Machine	12	Cable Water Penetration Test

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6	Cable Squash Tensile Testing Machine	13	Fusion Splicer
7	GWQV Cable Bending Tester	14	Cable Water Penetration Test Rig

### **Fiber Optic Cable Mechanical Performance Testing Laboratory**

- (1) Main Testing Type: Precision Test and Mechanical Test.
- (2) Precision Testing Machine: EXFO OTDR, EG&G PMD-440,CD-400.
- (3) Mechanical Performance Testing : Temperature, Impact, Tensile, Bending, Torsion, Flexing, Winding, Vibration, Water Penetration, Fusion Splicer, Water Penetration.

### **10. Our advantages**

- (1) Professional cable manufacturer
- (2) About 10 years experiences in cable industry
- (3) MOQ just 1Km
- (4) ISO, UL , ROSH,REACH...certifications
- (5) Can be customized production of fiber optic cable