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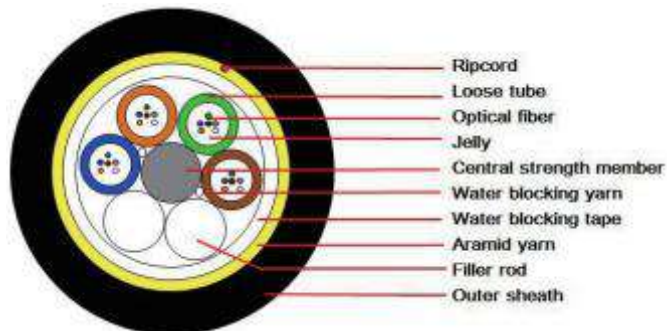
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# TECHNICAL SPECIFICATIONS FOR ADSS-100M CABLE

FORMATION: \_\_\_\_\_ CHECK: \_\_\_\_\_ APPROVE: \_\_\_\_\_

## 1 Cable cross-section



## 2 Cable Specification

### 2.1 Introduction

Loose tube construction, tubes jelly filled, elements (tubes and filler rods) laid up around non-metallic central strength member, polyester yarns used to bind the cable core, water blocking tape wrapped around the cable core, aramid yarn reinforced and PE outer sheath.

### 2.2 Fiber color code

Fiber color in each tube starts from No. 1 Blue.

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Gray	White	Red	Black	Yellow	Purple	Pink	Aqua

### 2.3 Color codes for loose tube

Tube color starts from No. 1 Blue.

1	2	3	4	5	6	7	8
Blue	Orange	Green	Brown	Gray	White	Red	Black

### 2.4 Cable structure and parameter

SN	Item	Unit	Unit				
1	No. of fibers	count	6/12	24/36	48	96	144
2	No. of fibers per tube	count	6	6	8	12	12
3	No. of elements	count	6	6	6	8	12
4	Tube diameter(nominal)	mm	2.0	2.0	2.0	2.2	2.2
5	Outer sheath thickness	mm	Nominal:1.5				
6	Cable diameter(±5%)	mm	9.9	9.9	10.0	12.0	14.9
7	Cable weight (±10%)	kg/km	72	75	80	123	175
8	Short term tension(MAT)	N	2000				
9	Short term crush	N/100mm	1000				
10	Max. Span	m	100				
11	Ice thickness	mm	0				
12	Wind speed	m/s	25				

### ③ Characteristic of Optical Cable

3.1 Min. bending radius for installation

Static: 10 x cable diameter Dynamic: 20 x cable diameter

3.2 Application temperature range Operation: -40 °C ~ +70 °C Installation: -10 °C ~ +60 °C

Storage/transportation: -40 °C ~ +70 °C

3.3 Main mechanical & environmental performance test

Item	Test Method	Acceptance Condition
Tensile Strength IEC 60794-1-2-E1	-Load: Short term tension -Length of cable: about 50m Load time: 1min	-Fiber strain 0.33% No fiber break and no sheath damage.
Crush Test IEC 60794-1-2-E3	-Load: Short term crush Load time: 1min	-Loss change 0.05dB@1550nm No fiber break and no sheath damage.

### ④ Characteristic of Optical Fiber

G652D fiber information

Mode field diameter (1310nm): 9.2µm 0.4µm

Mode field diameter (1550nm): 10.4µm 0.8µm

Cladding diameter: 125µm 0.8µm

Core/cladding concentricity error: 0.5µm

Cladding non-circularity: 1.0%

Coating diameter: 245µm 5µm

Cladding coating concentricity error 8µm

Cut off wavelength of cabled fiber (cc): 1260nm

Attenuation at 1310nm: 0.36dB/km

Attenuation at 1383nm: 0.36dB/km

Attenuation at 1550nm: 0.22dB/km

Attenuation at 1625nm: 0.25dB/km

Bending loss at 1550nm (100 turns, 30mm radius): 0.05dB

Bending loss at 1625nm (100 turns, 30mm radius): 0.05dB

Zero dispersion wavelength: 1300nm-1324nm

Dispersion in the range 1288 to 1339nm: 3.5ps/ (nm•km)

Dispersion at 1550nm: 18ps/ (nm•km)

Attenuation vs. Wavelength (1285-1330 nm): 0.05dB/km

Attenuation vs. Wavelength (1525-1575 nm): 0.05dB/km

Dispersion slope at zero dispersion wavelength: 0.092ps/ (nm<sup>2</sup>•km)

Polarization mode dispersion link value:0.1ps/km

Polarization mode dispersion for individual fiber:0.2ps/km

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# Optical Fibre Cable Technical Specification

## Aerial Cable

### ADSS-SS-100M-6/12/24/48B1.3

Yangtze Optical Fibre and Cable Joint Stock Limited Company

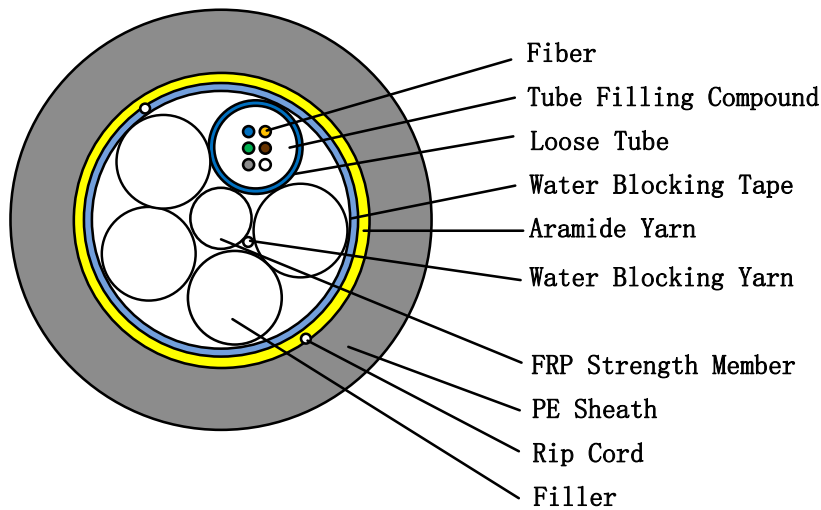
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## 1. Optical Cable

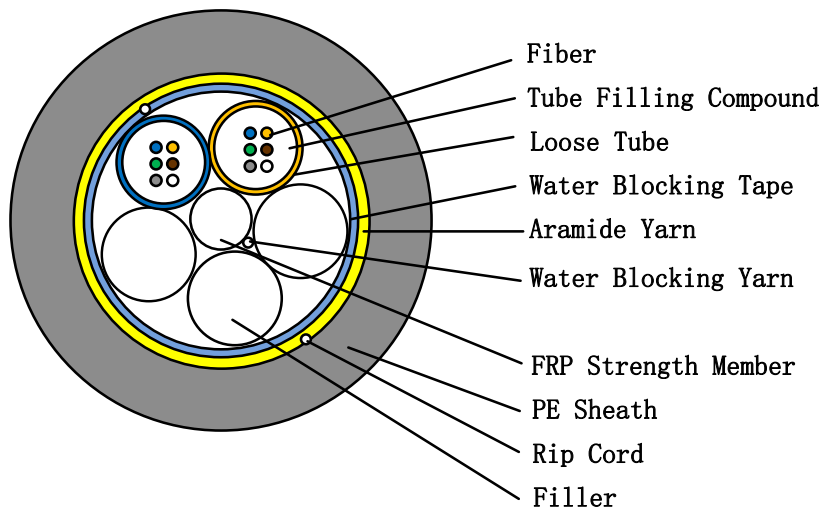
### 1.1 Technical Characteristics

- The unique second coating and stranding technology provide the fibres with enough space and bending endurance, which ensure good optical property of the fibres in the cable
- Accurate process control ensures good mechanical and temperature performance
- High quality raw material guarantees the long service life of cable

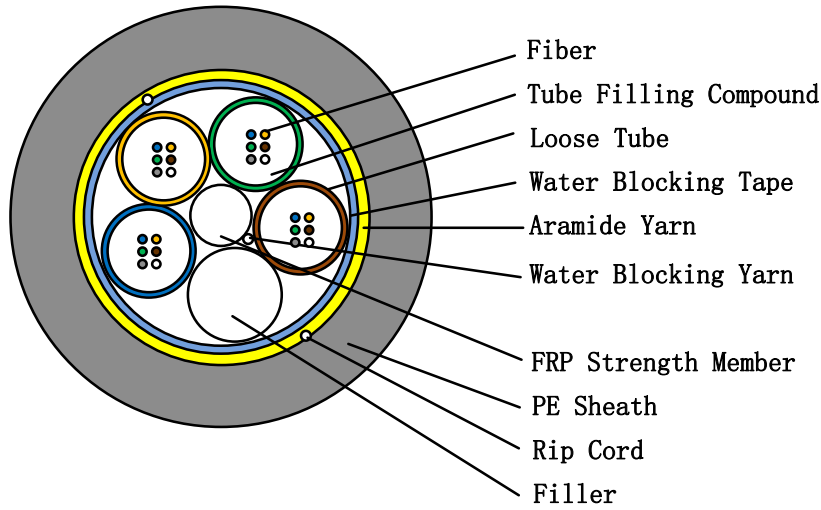
### 1.2 Cross Section of Cable



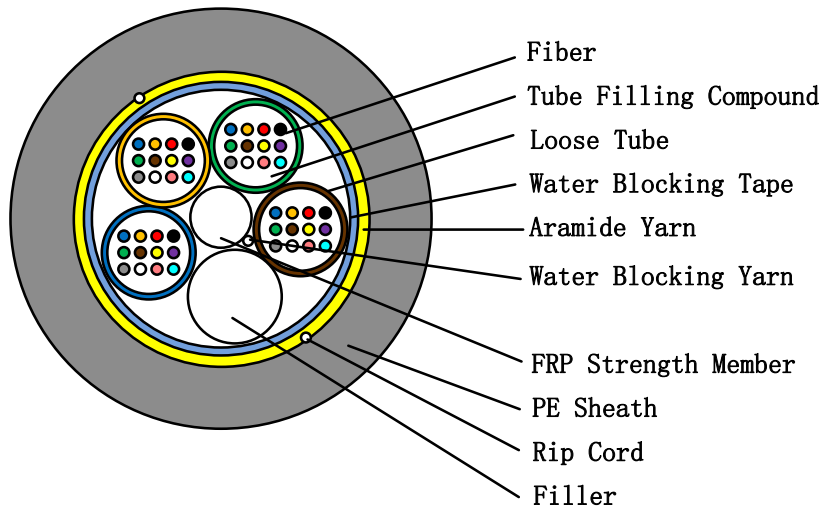
**ADSS-SS-100M-6B1.3**



**ADSS-SS-100M-12B1.3**



**ADSS-SS-100M-24B1.3**



**ADSS-SS-100M-48B1.3**

### 1.3 Fibre and Loose Tube Identification

The color code of fibres and loose tube will be identification in accordance with the following color sequence, other sequence also is available.

Color Code	1	2	3	4	5	6
	Blue	Orange	Green	Brown	Grey	White
	7	8	9	10	11	12
	Red	Black	Yellow	Violet	Pink	Aqua

The color of the fillers will be natural.

## 1.4 Dimensions and Descriptions

The standard structure of ADSS cable is shown in the following table, other structure and fibre count are also available according to customer requirements.

Item	contents	Value			
		6	12	24	48
Loose tube	number	1	2	4	
	Outer diameter (mm)	2.1			2.4
Filler	number	4	3	1	
Max. fiber counts per tube	G.652D	6			12
Central strength member	material	FRP			
	diameter (mm)	1.6			1.8
	PE layer diameter (mm)	-			
Water Blocking Material	Material	Water Blocking Tape & Yarn			
Strength member	Material	Braided aramid yarn			
Sheath	Material	HDPE, with UV protection, anti fungi			
	Color	Black			
	Thickness (mm)	Nominal: 1.5			
Ripcord	number	2 (opposite sides)			
Color Strip	Color and Dimension	-			
Cable diameter(mm)		9.4			10.3
Cable weight(kg/km) Approx.		65			75



## 1.5 Main Mechanical and Environmental Performance

Crush(N/100mm)	
Short term	Long term
2200	1100

Environmental and installation condition:

Max. wind speed	Max. ice thickness	Initial Installation sag	Temperature
25m/s Our 90Kmh/h	0	1.0%	-40~+70°C

## 2 Mechanical, Physical and Environmental Test Characteristics

The mechanical and environmental performance of the cable are in accordance with the following table. Unless otherwise specified, all attenuation measurements required in this section shall be performed at 1550nm.

Items	Test Method	Requirements
<b>Tension</b>	<b><u>IEC 60794-1-2-E1</u></b> Load: According to 3.5 Sample length: Not less than 50m. Duration time: 1min.	Additional attenuation: $\leq 0.1\text{dB}$ after test No damage to outer jacket and inner elements
<b>Crush</b>	<b><u>IEC 60794-1-2-E3</u></b> Load: According to 3.5 Duration of load: 1min	Additional attenuation: $\leq 0.1\text{dB}$ after test No damage to outer jacket and inner elements
<b>Impact</b>	<b><u>IEC 60794-1-2-E4</u></b> Radius: 300 mm Impact energy: 10 J Impact number: 1 Impact points: 3	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
<b>Bend</b>	<b><u>IEC 60794-1-2-E11A</u></b> Mandrel radius: $10*D$ Turns:4 Cycles:3	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
<b>Repeated bending</b>	<b><u>IEC 60794-1-2-E6</u></b> Bending radius: $20*D$ Cycles: 25 Load: 150N	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
<b>Torsion</b>	<b><u>IEC 60794-1-2-E7</u></b> Cycles:10 Length under test: 1m Turns: $\pm 180^\circ$ Load: 150N	Additional attenuation: $\leq 0.1\text{dB}$ No damage to outer jacket and inner elements
<b>Water Penetration</b>	<b><u>IEC 60794-1-2-F5B</u></b> Time : 24 hours Sample length : 3m	No water leakage.

	Water height : 1m	
<b>Temperature cycling</b>	<p><b><u>IEC 60794-1-2-F1</u></b>            Sample length: at least 1000m            Temperature range: -40℃~+70℃            Cycles: 2            Temperature cycling test dwell time: 12 hours</p>	The change in attenuation coefficient shall be less than 0.05 dB/km at 1310 and 1550nm.
<b>Other parameters</b>	According to <b><u>IEC 60794-1</u></b>	

### 3 Packaging and Drum

#### 3.1 Cable Sheath Marking

- Unless otherwise specified, the cable sheath marking shall be as follows:
- Color: white
- Contents: YOFC, the year of manufacture, the type of cable, cable number, length marking
- Interval: 1±0.2% m
- Outer sheath marking legend can be changed according to user's requests.

#### 3.2 Reel Length

Standard reel length: 4 km/reel, other length is also available.

#### 3.3 Cable Drum

The cables are packed in fumigated wooden drums.

#### 3.4 Cable Packing

Both ends of the cable will be sealed with suitable plastic caps to prevent the entry of moisture during shipping, handling and storage. The inner end is available for testing.