

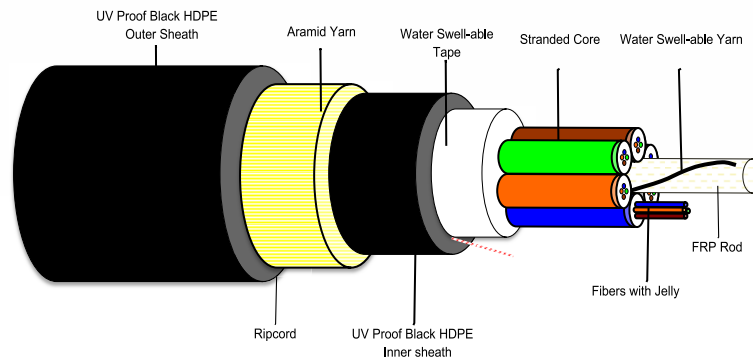
## CABLE & FIBER TECHNOLOGY

All direct self supporting ( ADSS ) Cable an advanced loose tube optical cable with SZ stranded core and fiber with outstanding optical and geometrical properties. Cables are fully water-blocked.

## CABLE APPLICATION

Primary use is for self-supporting aerial applications for span lengths 80 meters depending on local loading conditions. OFO can design ADSS for both low voltage distribution systems and high voltage power transmission systems. The cable can also be pulled through ducts, direct buried in some types of soil, lashed to a messenger or placed in outdoor cable trays.

## DRY CORE VERSION (TYPICAL)



## Design Construction

Sr. No.	Cable Construction Details	Material Specification
1	Central Strength Element	Fiber Reinforced Plastic (FRP) Rod 2.5mm Nominal
2	Loose Tube	Poly-butylene Terephthalate (PBTP) with Thixotropic gel, 2.3mm Nominal
3	Filler Color. No. Of Filler	Natural No. Based on design, mention in physical Specification
4	Stranded Cable Core	Loose Tubes with Fibers & Fillers Stranded Around FRP Rod
5	Water Blocking Element	Water swell able yarn helically applied over FRP Rod
6	Core Wrapping	Water swell able Tape with Binders
7	Core Type	Dry Core
8	Rip Cord	Below Inner Sheath
9	Inner Sheath	UV Proof Black High Density Polyethylene (HDPE) 1.2mm Nominal
10	Dielectric Strength Member	Water Blocking Type Aramid Yarns
11	Ripcord	Below Outer Sheath
12	Outer sheath	UV Proof Black High Density Polyethylene (HDPE) 1.5mm Nominal

## PHYSICAL SPECIFICATION

### CABLE CONSTRUCTION

Fiber Count	Standard Tube Layup (Others On Request)	No. of Fillers	Cable Weight kg/km (Nom inal )	Cable Dia meter mm (N ominal )
48F	Four Loose Tube / 12-Fibers per tube	2	135	13.5
96F	Eight Loose Tube / 12-Fibers per tube	0	158	15.0

Position holder y is for fiber type. (U = G. 652 standard single mode)

## ADSS - Aerial Fiber Optic Cable

The physical specifications for the ADSS cable itself and required fitting & vibration dampers are dependent on the following key parameters. Please provide these details to OFO for specific cable, fitting and vibration damper recommendations.

- Maximum span length - 80 meter
- Installation sag requirement (typically 2%)
- Wind 75 Meter/Second and ice loading, Nil
- 33 KV
- Local wind conditions- Moderate
- Level of airborne pollution- Moderate
- Tensile Load – 2700 N Max

### COLOR CODE ( As Per EIA /TIA -598 )

Loose Tube No.	Color	Fiber No.	Color	Fiber No.	Color
1	Blue	1	Blue	7	Red
2	Orange	2	Orange	8	Black
3	Green	3	Green	9	Yellow
4	Brown	4	Brown	10	Violet
5	Filler	5	Slate	11	Pink
6	Filler	6	White	12	Aqua

### Standard Cable Printing at 1 Meter Interval -

Cable printing Details	48F SM G652D ADSS FIBER OPTIC CABLE OMAN FIBER OPTIC 2017 XXXXm
Embossing Color	White

XXXXX = sequential meter marks

Printing is done with hot stamp/tape transfer method for excellent abrasion resistance.

### OPTICAL, MECHANICAL AND QUALITY INFORMATION

#### CABLE WITH SINGLEMODE G.652D

PARAMETER	Units	G.652D
Fiber Type		ITU-T-G.652 D
Average Cable Attenuation Coefficient at 1310 nm	dB/Km	0.36
Average Cable Attenuation Coefficient at 1550 nm	dB/Km	0.22
Mode field diameter at 1310 nm	µm	9.3 +/- 0.5
Mode field diameter at 1550 nm	µm	10.4 +/- 0.5
Cladding Diameter	µm	125.0 +/- 1.0
Mode field Concentricity Error	µm	1.0
Cladding non-circularity	%	1.0
Effective group index of refraction at 1310 nm		1.466
Effective group index of refraction at 1550 nm		1.467
Cable cut-off wavelength	nm	1260
Zero dispersion Wavelength	nm	1300 – 1324
Zero dispersion slope	ps/nm <sup>2</sup> .km	0.089
Chromatic Dispersion at 1285 - 1330 nm	ps/nm.km	3.5
Chromatic Dispersion at 1550 nm	ps/nm.km	17.5
PMD Coefficient	ps/ km	0.2
Coating Diameter	µm	245 +/- 10
Fiber Proof Test stress	%	1

## MECHANICAL INFORMATION (IEC -60794-1)

PARAMETER	SPECIFICATION	UNITS
Tensile Strength IEC 60794-1-2-E1	Load : 2700 Newton	No Change in attenuation < 0.1dB/Km @1550nm
	Length of cable : about 145 meter	No fiber break and no sheath damage.
	Load time : 1 minute	
Crush Test IEC 60794-1-2-E3	Short Term : 3000 Newton / 10 cm	No Change in attenuation < 0.1dB/Km @1550nm
	Load time : 10 min	No fiber break and no sheath damage.
Impact Test IEC 60794-1-2-E4	Points of impact : 3	No Change in attenuation < 0.1dB/Km @1550nm
	Times of per point : 1	No fiber break and no sheath damage.
	Load :15 Nm, 300 mm Radius	
Repeated Bending IEC 60794-1-2-E6	Bending radius :15x cable diameter	No Change in attenuation < 0.1dB/Km @1550nm
	No. of cycle : 10, 100N load	No fiber break and no sheath damage.
Torsion IEC 60794-1-2-E7	Length : 1 meter	No Change in attenuation < 0.1dB/Km @1550nm
	Twist angle : $\pm 180^\circ$	No fiber break and no sheath damage.
	No. of cycle : 5, 100 N Load	
Cable bend IEC 60794-1-2-E11	Bending radius :10x cable diameter	No Change in attenuation < 0.1dB/Km @1550nm
	Number of turns : 1	No fiber break and no sheath damage.
	Number of cycles : 5	
Water Penetration IEC 60794-1-2-F5B	Height of water : 1 meter	No water leak from the cable core of the opposite end
	Sample length : 3 meter	
	Time : 24 hours	
Temperature Cycling IEC 60794-1-2-F1	Temperature : -40< to +70<	No Change in attenuation < 0.1dB/Km @1550nm
	Time of each step : 4 hours	No fiber break and no sheath damage.
	Number of cycle : 2	
Cable Design	25	Years Lifetime
Packing Lengths	$4.0 \pm 5\%$	Km

## GENERAL INFORMATION

## FEATURES &amp; ADVANTAGES

- Extraordinarily robust construction
- Easy cable preparation, even in mid-span
- Dry water blocking for increased craft productivity
- SZ strand for easy mid span splicing
- Flexible buffer tubes provide easy fiber routing inside closure
- No preferential bend axis for easy cable handling, coil storage, figure-eights, etc.