DOUBLE JACKET DIELECTRIC ADSS FIBER GLASS CABLE

AR-1FDPE-FGPE-ADSS-200M-96F-G652D

OPTICAL FIBRE CABLE TECHNICAL SPECIFICATION

1. General

1.1 Scope

This specification covers the design requirements and performance standard for the supply of optical fibre cable in the industry. ARTIC ensures a stable quality control system for our products through several programs including ISO 9001, ISO 14001 and ROHS.

Cable type	Application
AR-1FDPE-FGPE-ADSS-200M-96F-G652D	Self-supporting aerial installation

1.2 Reference

The cable offered by ARTIC are designed, manufactured and tested according to the standards as follows:

ITU-T G.652D	Characteristics of a single-mode optical fibre ARTIC
IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General
IEC 60794-1-21	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure - Mechanical test methods
IEC 60794-1-22	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure - Environmental test methods
IEC 60794-3	Optical fibre cables-part 3: Sectional specification-Outdoor cables
IEC 60794-4-20	Aerial optical cables along electrical power lines - Family specification for ADSS (All Dielectric Self Supported) optical cables

1.3 Life Time

Optical fibre cables supplied in compliance with this specifications is capable to withstand the typical service condition for a period of twenty-five years (25) without detriment to the operation characteristics of the cable.

1.4 Application

Item	Value
Max. pole distance	200m
Operation temperature	-40 ºC～+70 ºC
Storage temperature	-40 ºC～+70 ºC
Static bending radius	10 times the cable diameter
Dynamic bending radius	20 times the cable diameter

2. Optical Fibre

Optical Fibres supplied in this specification meet the requirements of ITU-T G.652D.

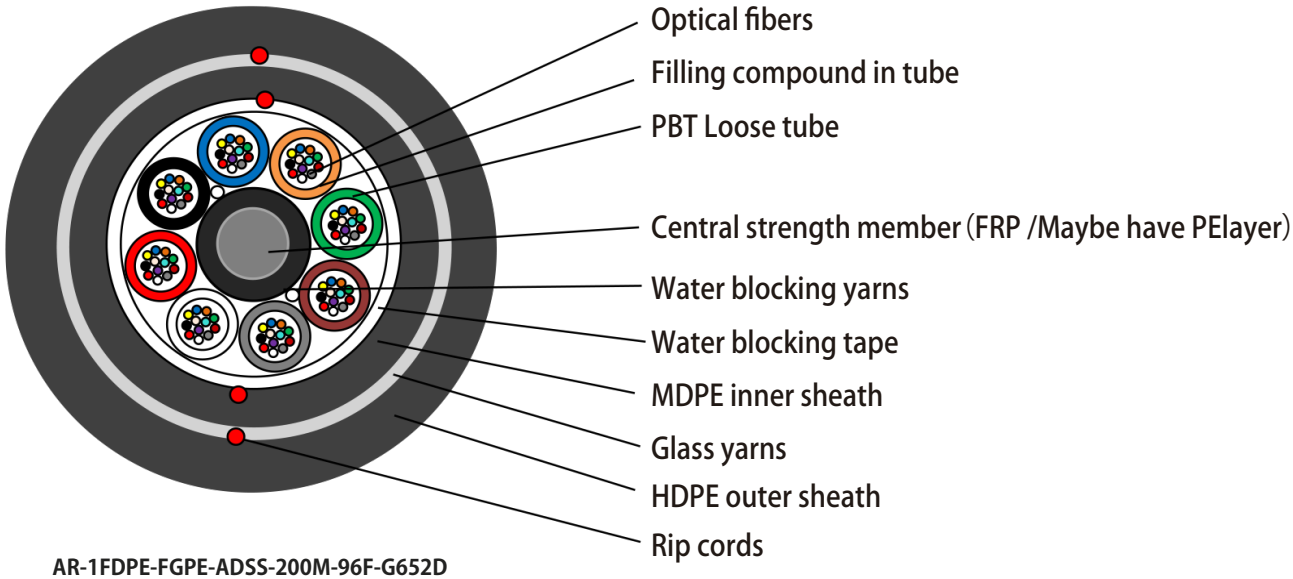
Parameter		Specification
Mode field diameter	1310nm	9.2±0.4um
MFD	1550nm	10.4±1.0um
Cladding diameter		125±1.0um
Fiber diameter		235~255um with UV coating, and colored to : 250 +/- 15um
Core/cladding concentricity error		≤ 0.6um
Coating/cladding concentricity error		≤ 12.0um
Cladding non circularity		≤ 1.0%
Cable Cut off wavelength		λ cc ≤1260nm
Attenuation coefficient		1310nm: ≤0.36dB/km 1550nm: ≤0.22dB/km
Bending-loss performance of optical fiber @1310nm&1550nm		≤0.05dB (100 turns around a mandrel of 50mm diameter)
Polarization mode dispersion maximum individual fibre		≤0.2ps/√km
Polarization mode dispersion link value		≤0.15ps/√km
Zero-dispersion wavelength		1300~1322nm
Zero-dispersion slope		≤0.092ps/nm^2•km
Dispersion coefficient	1285-1330nm	≤3.5 ps/(nm.km)
	1550nm	≤18 ps/(nm.km)
	1625nm	≤22 ps/(nm.km)

3. Optical Cable

3.1 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.

3.2 Cross Section of Cable



AR-1FDPE-FGPE-ADSS-200M-96F-G652D
Schematic for reference only

3.3 Fibre and Loose Tube Identification

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

Fiber 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

3.4 Main mechanical performance of cable

Cable Type	Tension (KN)		Crush (KN/100mm)	
	MAT	EDS	Short term	Long term
AR-1FDPE-FGPE-ADSS-200M-96F-G652D	5.8	2.3	2.0	1.0

Max. wind speed	Ice thickness	Sag (%)
100km/h	5mm	1.5

3.5 Diameter and Weight of Cable

Cable Type	Outer Diameter (±5%) mm	Approx. Weight kg/km
AR-1FDPE-FGPE-ADSS-200M-96F-G652D	14.4	160

4. Main 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.

Item	Test Method	Requirements
Tension	**IEC 60794-1-2-E1** Load: According to 3.2 Sample length: Not less than 50m. Duration time: 1min.	Fibre strain: ≤0.33% Additional attenuation: ≤0.05dB after test. No damage to outer jacket and inner elements.
Crush	**IEC 60794-1-2-E3A** Load: According to 3.2 Duration of load: 1min	Additional attenuation: ≤0.05dB after test. No damage to outer jacket and inner elements.
Impact	**IEC 60794-1-21-E4** Radius: 300 mm. Impact energy: 450g. Impact number: 5. Highness of impac: 1	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements.
Repeated bending	**IEC 60794-1-21-E6** Bending radius: 25*D. Cycles: 30 Load: 150N	Additional attenuation: ≤0.05dB No damage to outer jacket and inner elements
Torsion	**IEC 60794-1-21-E7** Cycles: 10. Length under test: 1m. turns: ±90°. Load: 150N	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements.
Water Penetration	**IEC 60794-1-22-F5B** Time : 24 hours. Sample length : 3m. Water height : 1m	No water leakage.
Temperature cycling	**IEC 60794-1-22-F1** Sample length: at least 1000m. Temperature range: -20~+60℃. Cycles: 2. Temperature cycling test dwell time: 12 hours.	The change in attenuation coefficient shall be less than 0.05 dB/km.
Other parameters	According to **IEC 60794-1**	

5. Packaging and Drum

5.1 Cable Sheath Marking

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

5.2 Reel Length

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

5.3 Cable Drum

The cables are packed in fumigated wooden drums.

5.4 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.