

AERIAL CABLE

AR-1FADPE-ADSS 120M xxF-G652D





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 cable products through several programs including ISO 9001, ISO 14001 and ROHS.

Cable type	Application
AR-1FADPE-ADSS-120M xxF-G652D	Self-supporting aerial installation

120 represents the span.

xx represents the fibre count.

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	
IEC 60794-1-1	Optical fibre cables-part 1-1: Generic specification-General	
IEC 60794-1-2	Optical fibre cables-part 1-2: Generic specification-Basic optical cable test procedure	
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 (25) years without detriment to the operation characteristics of the cable.



1.4. APPLICATION

ltem	Value
Operation temperature	-40 °C∼+70 °C
Installation temperature	-30 °C∼+60 °C
Storage temperature	-40 °C∼+70 °C
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.652.D

Parameter	Specification
MFD (1310nm)	9.1±0.4um
MFD (1550nm)	10.3±0.5um
Cladding diameter	125 ±1.0um
Fiber diameter	245 \pm 10um, with UV coating, and colored to : 250 \pm 15um
Core/cladding concentricity error	≤ 0.6um
Coating/cladding concentricity error	≤ 12.0um
Cladding non circularity	≤ 1%
Cut off wavelength	λ cc ≤1260nm
Attenuation coefficient	1310nm: 0.35dB/km 1550nm: 0.21dB/km
Bending-loss performance of optical fiber @1550nm&1625nm	≤0.05dB (100 turns around a mandrel of 60mm diameter)
Polarization mode dispersion link value	≤0.1ps/√km
Zero-dispersion wavelength	1300~1324nm
Zero-dispersion slope	≤0.092ps/nm²•km

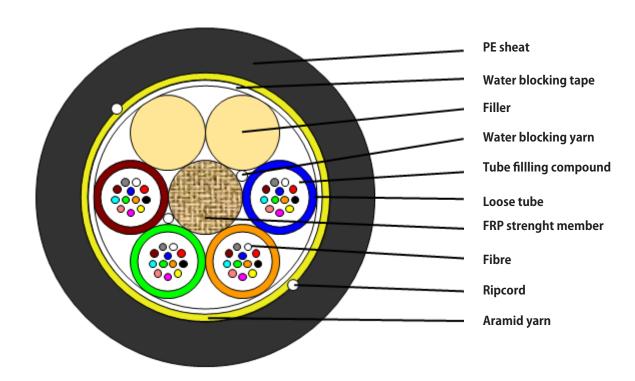


3. OPTICAL CABLE

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 CABLE



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.

Color code

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



3.4. DIMENSIONS AND DESCRIPTIONS

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

_	Contents	Value					
Parameter		6/12	24/36	48	72	96	144
l + - l	Fiber counts/tube	1/2	4/6	4	6	8	12
Loose tube	Outer diameter (mm)	2.1	2.1	2.4	2.4	2.4	2.4
Filler	Number	5/4	2/0	2/0	0	0	0
Max. fiber count per tube	G.652D	6	6	12	12	12	12
	Material		•	F	RP		
Central strength member	Diameter (mm)	2.25	2.25	2.6	2.6	3.0	3.5
	PE layer diameter (mm)	-	-	-	-	4.2	7.2
Water barrier	Material	Water blocking yarn & tape					
Peripheral strength member	Material	Aramid yarn					
	Material			HD	PE		
Sheat	Color	Black					
	Thickness (mm)	Nominal:1.5					
	Number	2					
Ripcord	Color	White					
Cable diamete	r(mm) Approx.	10.2	10.2	11.0	11.0	12.6	15.6
Cable weight(k	(g/km) Approx.	80	80	95	95	125	190

3.5. MAIN MECHANICAL AND ENVIRONMENTAL PERFORMANCE

Main mechanical performance

ltem	Span (M)	Tension (N)	Crush(N/	(200mm)
iteiii	Span (M)		Short term	Long term
6/12		2000	1500	750
24/36	120	2000	1500	750
48		2500	1500	750



lt a ma	Item Span (M) Tension (N) Crush(N/200mm)		(200mm)	
ltem	Span (M)	rension (N)	Short term	Long term
72		2500	1500	750
96	120	3000	1500	750
144		3500	1500	750

Environmental and installation condition

Max. wind speed	Max. ice thickness	Initial Installation sag	Temperature
25 m/s	0	1.5%	-40 °C∼+70 °C

4. 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
Tension	IEC 60794-1-2-E1 Load:According to 3.5 Sample length: Not less than 50m. Duration time: 1 min.	Additional attenuation: ≤0.05dB after test No damage to outer jacket and inner elements
Crush	IEC 60794-1-2-E3 Load: According to 3.5 Duration of load: 1min	Additional attenuation: ≤0.05dB after test No damage to outer jacket and inner elements
lmpact	IEC 60794-1-2-E4 Radius: 300 mm Impact energy: 10 J Impact number: 1 Impact points: 3	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements
Repeated Bending	IEC 60794-1-2-E6 Bending radius: 20*D Cycles: 25 Load: 150 N	Additional attenuation: ≤0.05dB No damage to outer jacket and inner elements
Torsion	IEC 60794-1-2-E7 Cycles:10 Length under test: 1m Turns: +/-180° Load: 150 N	Additional attenuation: ≤0.1dB No damage to outer jacket and inner elements



Water Penetration	IEC 60794-1-2-F5B Time: 24 hours Sample length: 3m Water height: 1m	No water leakage
Temperature cycling	IEC 60794-1-2-F1 Sample length: at least 1000m Temperature range: -40 °C~+70 °C 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: 1 m $\pm 0.2\%$

Outer sheath marking legend can be changed according to user's requests.

5.2 REEL LENGHT

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.