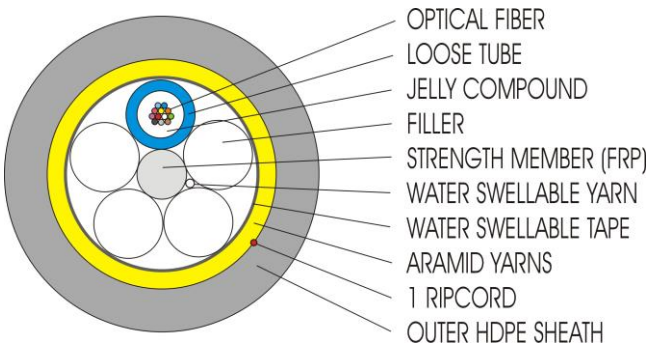
■ ADSS TYPE AERIAL INSTALLATION CABLE (Span length : 70m)

[APE* Sheath : Cable core + Aramid yarns + Outer HDPE]



- **Single mode Optical Fiber (ITU-T G.652D, G.657A1)**
- **Loose Tube (Jelly filled), SZ Stranding, Dry Core Design**
- **Central Strength Member (FRP rod)**
- **Outside Strength Member (Aramid yarns)**
- **APE* Sheath for ADSS Aerial Installation (Span length 70m, Halogen free PE)**

Total fiber counts		**2C, 4C**	**8C, 12C**
Nom. cable diameter (mm)		**7.4**	**7.9**
Fiber counts per loose tube		2 or 4	8 or 12
Loose tube No. + Filler No.		1 + 4	1 + 4
Nom. sheath thickness (mm)		0.7	0.7
Min. bend radius (mm)	No load	75	80
	Under load	150	160
Max. tensile strength (N)	Operation	1600	1700
	Installation	3400	3600
Cable break load (N)		7000	8500
Cable weight (kg/km)		36	42
Recommended Initial Sag		Span 70m, Sag 1.5%	
After Installation (Worst case)	Sag (%)	3.6%	3.5%
	Tension (N)	1350	1450
Worst case loading condition		NESC "**Medium**" : Wind Pressure : 190pa, Ice Thickness : 6.5mm	
Temperature range (℃)		-40℃ ~ +75℃ (Transportation &Storage) -30℃ ~ +60℃ (Installation) -40℃ ~ +70℃ (Operation)	

● **Mechanical and Environmental Properties**

Item	Test Method	Test Condition	Acceptance Criteria
Tensile strength	IEC 60794-1-E1	- Load: see table	Note 1), 2)
Crush	IEC 60794-1-E3	- Load: 1000 N/100mm	Note 1), 2)
Impact	IEC 60794-1-E4	- Impact energy : 5J (5Nm) - Impact diameter: 25mm	Note 1), 2)
Repeated bending	IEC 60794-1-E6	- Bending radius: 15 x Cable diameter - Bending cycles: 20	Note 1), 2)
Torsion	IEC 60794-1-E7	- Test length: 2m - Twist angle: ±180 degrees - Twist cycles: 10	Note 1), 2)
Temperature cycling	IEC 60794-1-F1	- Temperature change: -40℃→+70℃	Note 3)
Water penetration	IEC 60794-1-F5	- Cable length: 3m, Water height: 1m - Duration time: 24 hrs	No water leak

Note 1) Attenuation : ≤ 0.1dB 2) No mechanical damage

3) Attenuation : ≤ 0.2dB/km (each procedure), ≤ 0.1dB/km (after test)

Annex 1. Color Code of Optical Fiber and Loose Tube

No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Turquoise	Orange	Pink

Annex 3. Optical Properties of Cable

1. Optical Properties of ITU-T G.652D (LWPF : Low Water Peak Fiber)

Items of Properties		Value
Geometrical Characteristics	Effective group index (step index) @1310nm @1550nm & 1625nm	 1.467 1.468
	Mode field diameter @1310nm	9.2 ± 0.4 ㎛
	Core/Clad concentricity error	≤ 0.5 ㎛
	Cladding diameter	125 ± 0.7 ㎛
	Cladding non-circularity	≤ 1.0 %
	Coating diameter (Uncolored)	245 ± 5 ㎛
Optical Characteristics	Cutoff wavelength (λ cc)	≤ 1260nm
	Attenuation coefficient @1310nm Maximum (Typical) @1383nm Maximum @1550nm Maximum (Typical) @1625nm Maximum	 ≤ 0.35 dB/km (≤ 0.34 dB/km) ≤ 0.31 dB/km ≤ 0.22 dB/km (≤ 0.20 dB/km) ≤ 0.24 dB/km
	Bending loss @1625nm 30mm mandrel radius, 100 turns	 ≤ 0.05 dB
	Attenuation uniformity	≤ 0.05 dB
	Chromatic dispersion coefficient @1285~1330nm @1290~1330nm @1550nm	 ≤ 3.2 ps/nm.km ≤ 2.8 ps/nm.km ≤ 18 ps/nm.km
	Zero dispersion wavelength	1300~1322nm
	Zero dispersion slope	≤ 0.092 ps/nm^2.km
	PMD Link design value	≤ 0.08 ps/√ km
	PMD (maximum individual fiber)	≤ 0.2 ps/√ km
Mechanical Characteristics	Proof test level	100 kpsi (0.69Gpa).
	Coating strip (Nominal)	3.0 N/3cm
Environmental Characteristics (Uncabled fiber)	Temperature dependence (-60℃~+85℃)	≤ 0.05dB/km (@1310nm/@1550nm)
	Temperature-Humidity Cycling (-10℃~+85℃/98% relative humidity)	≤ 0.05dB/km (@1310nm/@1550nm)

2. Optical Properties of ITU-T G.657A1 (LBRF : Low Bending Radius Fiber)

Items of Properties		Value
Geometrical Characteristics	Effective group index (step index) @1310nm @1550nm & 1625nm	 1.468 1.469
	Mode field diameter @1310nm	8.8 ± 0.4 ㎛
	Core/Clad concentricity error	≤ 0.7 ㎛
	Cladding diameter	125 ± 0.7 ㎛
	Cladding non-circularity	≤ 0.7 %
	Coating diameter (Uncolored)	245 ± 5 ㎛
Optical Characteristics	Cutoff wavelength (λ cc)	≤ 1260nm
	Attenuation coefficient @1310nm Maximum (Average) @1383nm Maximum @1550nm Maximum (Average) @1625nm Maximum	 ≤ 0.35 dB/km (≤ 0.34 dB/km) ≤ 0.31 dB/km ≤ 0.22 dB/km (≤ 0.20 dB/km) ≤ 0.24 dB/km
	Bending loss (@1550nm/@1625nm) Φ 30mm mandrel, 10 turns Φ 20mm mandrel, 1 turn	 ≤ 0.25 dB / ≤ 1.00 dB ≤ 0.75 dB / ≤ 1.50 dB
	Attenuation uniformity	≤ 0.05 dB
	Chromatic dispersion coefficient @1285~1330nm @1290~1330nm @1550nm	 ≤ 3.2 ps/nm.km ≤ 2.8 ps/nm.km ≤ 18 ps/nm.km
	Zero dispersion wavelength	1300~1322nm
	Zero dispersion slope	≤ 0.092 ps/nm^2.km
	PMD Link design value	≤ 0.08 ps/√ km
	PMD (maximum individual fiber)	≤ 0.2 ps/√ km
Mechanical Characteristics	Proof test level	100 kpsi (0.69Gpa)
	Coating strip (Nominal)	3.0 N/3cm
Environmental Characteristics (Uncabled fiber)	Temperature dependence (-60℃~+85℃)	≤ 0.05dB/km (@1310nm/@1550nm)
	Temperature-Humidity Cycling (-10℃~+85℃/98% relative humidity)	≤ 0.05dB/km (@1310nm/@1550nm)

Revision Table

Rev. No	Date	Page	Description
R0	Mar.15.2012	1~3	Initial release ● Spec No : MC-2012-DUCATEL-ADSS_Slim(SZ,2~12C)-R0 - ITU-T G.652D (2C, 4C, 8C, 12C)
R0	Aug.31.2020	1~5	● Add the Annex 3. Optical Properties (ITU-T G.652D, G.657A1) Spec No : MC-2020-DUCATEL-ADSS_Slim(SZ,2~12C)-R0 - ITU-T G.652D 2C, 4C, 8C, 12C - ITU-T G.657A1 2C, 4C, 8C, 12C ● Add the Revision Table