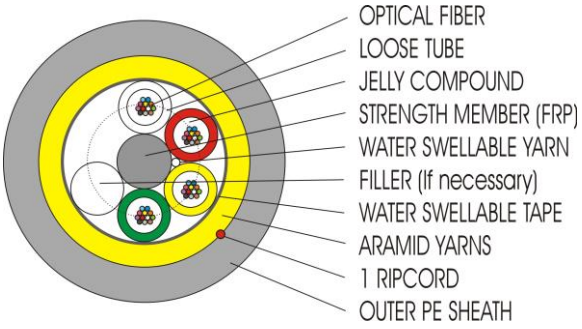
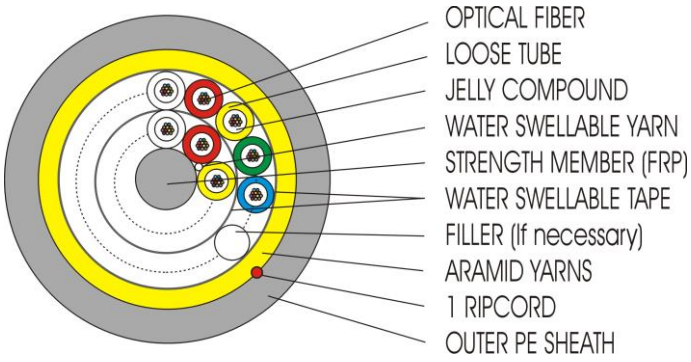
■ ADSS TYPE AERIAL INSTALLATION CABLE (Span length : 70m)

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



[24C ~ 144C]



[192C ~ 240C]

- **SINGLE MODE OPTICAL FIBER (ITU-T G.652D, G.657A1)**
- **LOOSE TUBE (Jelly Filled)**
- **DRY CORE TYPE (Water Swellable Yarn & Water Swellable Tape)**
- **CENTRAL STRENGTH MEMBER (FRP)**
- **OUTSIDE STRENGTH MEMBER (Aramid Yarns)**
- **APE* SHEATH FOR ADSS AERIAL INSTALLATION (Halogen free PE)**

Fiber Counts		24, 36, 48, 72C	96C	144C	192, 216C	240C
Nom. cable diameter (mm)		10.2	11.6	14.5	14.9	15.8
Fibers per loose tube		12	12	12	12	12
Nom. loose tube diameter (mm)		2.2	2.2	2.2	2.2	2.2
Nom. outer sheath thickness (mm)		1.4	1.4	1.4	1.4	1.4
Min. bend radius (mm)	No load	100	100	100	100	120
	Under load	100	100	100	100	120
Max. pulling tension (N)	Installation	2700	3000	3300	3300	3800
	Operation	1500	1700	1800	1800	2000
Cable break load (kN)		10.7	12.5	16.0	16.0	17.6
Sag (%)	Initial sag	1.5%	1.5%	1.5%	1.5%	1.5%
	After installation	2.7~2.9%	2.7~2.9%	2.7~2.9%	2.7~2.9%	2.7~2.9%
Cable weight (kg/km)		77	100	155	157	175
Recommended temperature range		-40℃ ~ +70℃ (Handling & Storage) -10℃ ~ +50℃ (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: 2000 N/100mm	Note 1), 2)
Impact	IEC 60794-1-E4	- Impact energy : 10J (10Nm) - Impact diameter: 25mm	Note 1), 2)
Repeated bending	IEC 60794-1-E6	- Bending radius: see table - 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 : ≤ 0.1dB/km

Annex 1. Color Code of Optical Fiber and Loose Tube

No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Color	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Turquoise	Orange	Pink	Natural

Annex 2. Optical Fiber Cable Unit Composition

Cable Core		The count of optical fiber per loose tube and unit composition												
		U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13
24C		12	12	F	F	F	F							
36C		12	12	12	F	F	F							
48C		12	12	12	12	F	F							
72C		12	12	12	12	12	12							
96C		12	12	12	12	12	12	12	12					
144C		12	12	12	12	12	12	12	12	12	12	12	12	
192C	1layer	12	12	12	12	12	12							
	2layer	12	12	12	12	12	12	12	12	12	12	F	F	
216C	1layer	12	12	12	12	12	12							
	2layer	12	12	12	12	12	12	12	12	12	12	12	12	
240C	1layer	12	12	12	12	12	12	12						
	2layer	12	12	12	12	12	12	12	12	12	12	12	12	12

Note) F: Filler (Natural color)

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	Apr.23.2018	1~3	● Initial release Spec No : MC-2018-DUCATEL-ADSS_70M(24~240C)-R0 - G.652D 24, 36, 48, 72, 96, 144, 192, 216, 240C
R0	Aug.31.2020	1~5	● Add the Annex 3. Optical Properties (ITU-T G.652D, G.657A1) Spec No : MC-2018-DUCATEL-ADSS_70M(24~240C)-R0 - G.652D 24, 36, 48, 72, 96, 144, 192, 216, 240C - G.657A1 24, 36, 48, 72, 96, 144, 192, 216, 240C ● Add the Revision Table