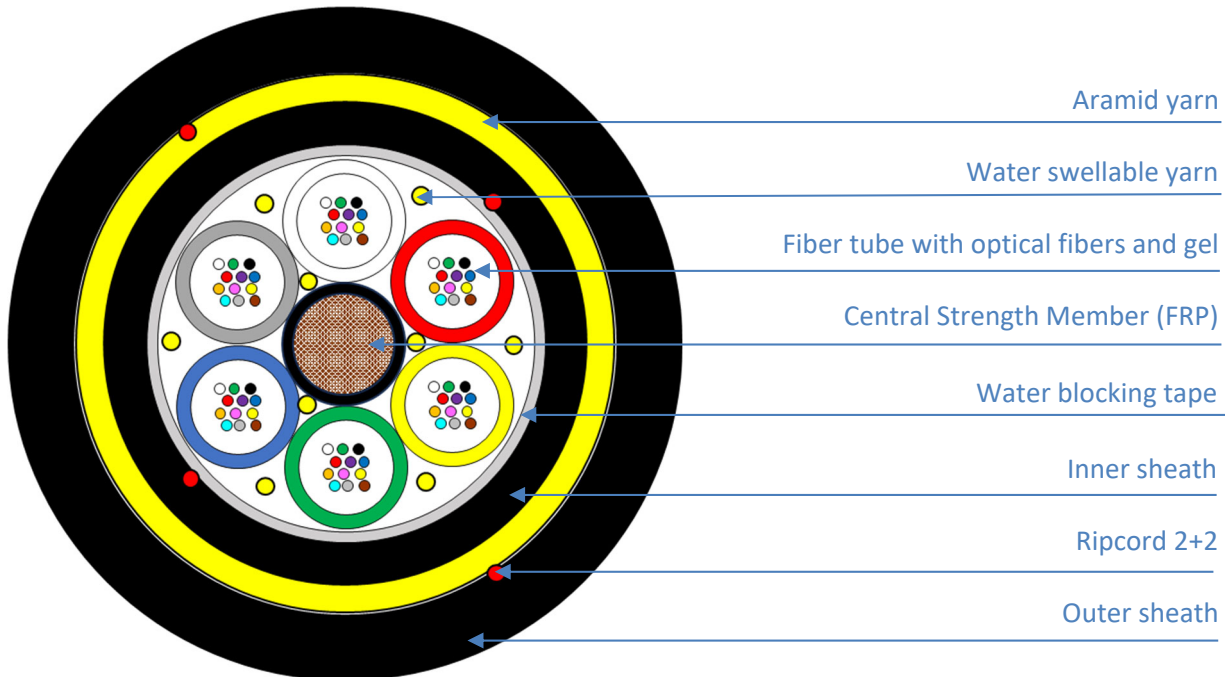




ADSS QEAE 16kN, ≤150 METER SPAN LENGTH

AERIAL DIELECTRIC SELF SUPPORTING CABLE



1. APPLICATION/CONSTRUCTION

Identification	QEAE ADSS 1,5kN – 24/48/96/144/216/432 G.652.D		
Application	Self-supporting aerial installation for span length ≤200 meter		
Cross section (not to scale)	12/24/48/96/144 Fibers	192/216/288 Fibers	
			
Configuration	-Loose tubes with 12 or 24 optical fibers filled with thixotropic compound		
	-Stranded loose tube and fillers (if necessary), SZ stranding		
	-Central strength member made of fiber reinforced plastic (FRP), or coated FRP		
	-Cable strand: Dry, with water blocking yarn and tape		
	-Aramid yarns as additional strength member		
-Inner/Outer sheath: HDPE, halogen free, black, ripcords under the sheath			
Temperature range	Storage and Transport -40 to +70°C	Installation -15 to +60°C	Operation -40 to +70°C
Standards	IEC 60794-1-1, IEC 60794-1-21, IEC 60794-1-22, EC 60794-3, IEC 6079-4-20		
CPR	Fca		

2. DIMENSIONS

Number of fibers	/	12	24	48	96	144	192	216	288	
Loose tube x fibers	pcs	1x12	2 x 12	4 x 12	8 x 12	12 x 12	16x12	18 x 12	24 x 12	
Loose tube/dummies Inner layer	pcs	1/6	2/6	4/4	8/0	12/0	6/0	6/0	9/0	
Loose tube/dummies Outer layer	pcs	-	-	-	-	-	10/2	12/0	15/0	
Loose tube ϕ ($\pm 0,1$)	mm	2.2								
CSM (FRP)	mm	3.7 (2.8)								
Water blocking	material	Water blocking yarn and tape								
Inner sheath thickness	mm	1.0								
Peripheral strength member	material	Aramid yarn								
Outer sheath thickness	mm	2.0				1.5				
Outer dia. (Nominal)	mm	15.8					18.5	18.5	21.0	
Weight/km	kg	200			265	265	265	325		

3. MECHANICAL PROPERTIES

Number of fibers	24	48	96	144	192	216	288
Max. pulling force	18 kN						
Max tensile load - RTS	16 kN						
Crush resistance / 100 mm	2000 N						
Bending radius (Dynamic)	20 x OD						
Bending radius (Static)	10 x OD						

See point 6: Test Methods

4. MARKING

Fibre colors	1	2	3	4	5	6	7	8	9	10	11	12
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink
Tube colors 24F~144F	1	2	3	4	5	6	7	8	9	10	11	12
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink
Tube colors Inner layer	1	2	3	4	5	6						
	White	Red	Yellow	Green	Blue	Grey						
Tube colors ¹⁾ 192F ²⁾ & 216F	7	8	9	10	11	12	13	14	15	16	17	18
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Aqua	Orange	Pink
Outer layer												
Tube colors ³⁾ 288F Inner layer	1	2	3	4	5	6	7	8	9			
	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet			

Tube colors 288F Outer layer	10	11	12	13	14	15	16	17	18	19	20	21
	White	Red	Yellow	Green	Blue	Grey	Brown	Natural	Violet	Aqua	Orange	Pink
	22	23	24									
	Aqua	Orange	Pink									

Remark:

- 192F & 216F cable: Tube 7~18 with black tracer, except for tube 14 with white tracer.
- 192F: Tubes 17 and 18 are dummies
- 288F cable: Tubes 10~21 with black tracer, except for tube 17 with white tracer. Tube 22~24 no tracer.

Outer sheath: Black, ink jet print marking with 1-meter intervals as follows:

Fiberworks ADSS QEAE 16kN <n> G.652.D <batch ID> <meter marking>

<n>: Fiber qty.

5. OPTICAL FIBER

Standard	ITU-T G.652.D		
Optical	Fiber attenuation, cabled	1310 nm: ≤ 0.35 dB/km	1550 nm: ≤ 0.21 dB/km
	Mode field diameter (MFD)	1310 nm: 9.1 ± 0.4 μ m	1550 nm: 10.3 ± 0.6 μ m
	Zero dispersion wavelength	1300 ~ 1324 nm	
	Zero dispersion slope	≤ 0.092 ps/nm ² · km	
	Polarization mode dispersion (PMD)	≤ 0.1 ps/√km	
	Cut-off wavelength	≤ 1260 nm	
	Macro bending loss, 100 turns \varnothing 50 mm	1550 nm: ≤ 0.05 dB	1625 nm: ≤ 0.10 dB
Geometric	Outer diameter (uncolored)	245 ± 10 μ m	
	Cladding diameter	125 ± 0.7 μ m	
	Coating/Cladding concentricity error	≤ 12.0 μ m	
	Cladding non-circularity	≤ 1.0 %	
Mechanical	Proof stress	≥ 0.69 Gpa	

6. TEST METHODS

Test	Conditions	Acceptance criteria
Tensile strength IEC 60794-1-2-E1	Tensile load: See Point 3 Sample length: ≥ 50 m Test duration: 1 min	- Fiber strain $\leq 0.33\%$, $\Delta\alpha$ reversible - No damage to outer jacket and inner elements
Crush resistance IEC 60794-1-2 E3	Crush: see Point 3 Number of tests: 3 Test duration: 1 min	- $\Delta\alpha$ reversible - No damage to outer jacket and inner elements
Impact IEC 60794-1-2 E4	Impact energy: 1 J R = 300 mm Number of paces/tests: 1/3	- $\Delta\alpha$ reversible - No damage to outer jacket and inner elements

Repeated bending IEC 60794-1-2-E6	Bending radius: 20x cable ϕ Cycles: 25 Tension: 150 N	- $\Delta\alpha$ reversible - No damage to outer jacket and inner elements
Torsion IEC 60794-1-2 E7	Sample length: 1 m Angles: $\pm 180^\circ$ Cycles: 10 Tension: 150 N	- $\Delta\alpha$ reversible - No damage to outer jacket and inner elements
Temperature cycling IEC 60794-1-2 F1	Steps: $-40^\circ\text{C}\sim+70^\circ\text{C}$ Cycles: 2 Test duration: 12 hours	- $\Delta\alpha \leq 0.15$ dB/km - Attenuation reversible - No damage
Water penetration IEC 60794-1-2 F5	Sample length: 3 m Water column height: 1 m Test duration: 24 hours	- No water leak through the open end in 24 h
Other parameters	According to IEC 60794-1	

7. ORDERING INFORMATION

Elnr.	Product code	Product	Fiber Qty.	Fiber type	Category (fiber)
1234567	K-QEAE-S-G2D-G12	G12 QEAE ADSS LUFTKABEL 16kN ϕ 15.8 mm	12	SM 9/125	OS2
	K-QEAE-S-G2D-G24	G24 QEAE ADSS LUFTKABEL 16kN ϕ 15.8 mm	24	SM 9/125	OS2
	K-QEAE-S-G2D-G48	G48 QEAE ADSS LUFTKABEL 16kN ϕ 15.8 mm	48	SM 9/125	OS2
	K-QEAE-S-G2D-G96	G95 QEAE ADSS LUFTKABEL 16kN ϕ 15.8 mm	96	SM 9/125	OS2
	K-QEAE-S-G2D-G144	G144 QEAE ADSS LUFTKABEL 16kN ϕ 15.8 mm	144	SM 9/125	OS2
	K-QEAE-S-G2D-G192	G192 QEAE ADSS LUFTKABEL 16kN ϕ 18.5 mm	144	SM 9/125	OS2
	K-QEAE-S-G2D-G216	G216 QEAE ADSS LUFTKABEL 16kN ϕ 18.5 mm	216	SM 9/125	OS2
	K-QEAE-S-G2D-G288	G288 QEAE ADSS LUFTKABEL 16kN ϕ 21.0 mm	288	SM 9/125	OS2

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