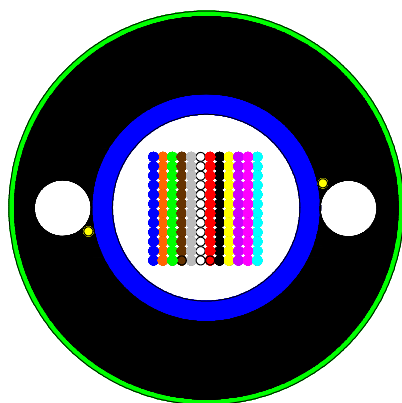


RIBBON

External Underground Loosetube Ribbon Central Tube Optical Cable

Cable Design

**TELCORDIA GR-20
ACMA - AS/CA S008**



- Drawing not to scale -

- **Central-loose tube construction**
- **Tube:** High density polyethylene, containing either 72 or 144 optical fibres filled with a low viscosity, thixotropic, non-melting gel fully compatible with fibre coating and tube material
- **Strength members:** Two glass fibre reinforced plastic material (GRP) with parallel applied opposite to each other alongside the tube
- **Longitudinal water tightness:** Water swellable elements (dry-core technology)
- **Sheath:** UV stabilised polyethylene in compliance with AS 1049. Two ripcords provided beneath the sheath for easy removal
- **Outer jacket:** UV stabilised polyamide (Nylon) in compliance with AS 1049 integrally bonded to PE sheath

This loose tube dielectric ribbon optical cable is designed for external underground installations in ducts or by direct burial. GRP armour provides rodent protection and polyamide provides anti-termite protection.

Technical data

Number of Fibres		72	144
Number of elements		1	
Ribbon packs		6 x 12	12 x 12
Tube / Filler diameter	mm	6.2	7.9
Cable nominal diameter	mm	12.5	14.2
Cable nominal weight	kg/km	130	165
Max. installation tension	kN	2.0	
Max. crush resistance	kN/100mm	2.0 (Short term) / 1.0 (Long term)	
Min. bending radius	mm	At full load 20 x Cable OD At no load 10 x Cable OD	
Temperature range	°C	Installation 0 -> +45	Transport & Storage -20 -> +70 Operation -10 -> +70

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre Colours

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

Buffer Tube Colours

Tube is either natural (opaque) or blue. Individual ribbons are numbered for identification.

Sheath Colour:

The outer sheath colour is green.

Sheath Marking:

The outer sheath is marked in 1 meter intervals as follows:

PRYSMIAN DW RIBBON Part Number T/N #### MM/YY MADE IN AUSTRALIA ***M**

^ Customised marking legend is available (subject to agreement)

Main mechanical characteristics

Parameter	Test method	Test conditions	Acceptance criteria*
Tensile strength	IEC 60794-1-21-E1 Figure 2	Load: As per cable maximum tensile strength in table above.	After 30 minutes the maximum strain on the fibre should not exceed 0.6% and no attenuation change throughout test
Crush	IEC 60794-1-21-E3	Short time: 10 min Long time: 120 min Load: As per maximum crush resistance in table above Number of positions: 3 adjacent sections (ensuring one over tube and one over lay reversal)	No damage to the sheath or to the core structure and no attenuation change for 90% of fibres throughout test. No individual fibre should measure an attenuation greater than 0.15 dB/km
Impact	IEC 60794-1-21-E4	Weight: 1.5 kg Height: 1.0 m Anvil radius: 12.5 mm Impacts: 3	After 5 minutes no fibre breaks, no damage to the sheath or to the core structure and no attenuation change for 90% of fibres throughout test. No individual fibre should measure an attenuation greater than 0.15 dB/km
Torsion	IEC 60794-1-21-E7	Sample length: 1 m Rotation: a) 180° clockwise, b) return to starting position, c) 180° anticlockwise, d) return to starting position. Four movements constitute one cycle. Complete 10 cycles (a to d) in one minute maximum	During the final tenth cycle at a), c) and after completion (no rotation) check transmitting fibres. No fibre breaks, no damage to the sheath or to the core structure and no attenuation change for 90% of fibres throughout test. No individual fibre should measure an attenuation greater than 0.15 dB/km
Bend	IEC 60794-1-21-E11	Mandrel diameter: 20 x Cable OD Bend: 360° (1turn)	No attenuation change for 90% of fibres throughout test. No individual fibre should measure an attenuation greater than 0.15 dB/km
Bend under tension	Concurrent to tensile test IEC 60794-1-21-E18A	Mandrel diameter: 40 x Cable OD Bend: 360° (1turn)	After 1minute no fibre breaks, no damage to the sheath or to the core structure and no attenuation change for 90% of fibres throughout test. No individual fibre should measure an attenuation greater than 0.15 dB/km
Temperature cycling	IEC 60794-1-22-F1	Sample length: 1000 m (minimum) Temperature range: - 10 °C to +70 °C	There should be no average attenuation increase at the temperature extremes when compared to the attenuation at ambient temperature. No individual fibre should measure an attenuation greater than 0.15 dB/km
Water penetration	IEC 60794-1-22-F5B	Sample length=3m, Water height=1m	No water leakage after 24 hour

* All optical measurements for singlemode fibres performed at 1550 nm.

Logistic

Packing:

Timber drums to AS/NZS 2857 with NOLCO-FLEX protection

Delivery Lengths:

Standard delivery length is 4km with tolerance of - 1% / + 3%

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