

OSA loose tube dielectric optical cable is designed for external underground installations in ducts by pulling, jetting or floating techniques or by direct burial in open-cut trenches. Polyamide provides anti-termite protection



CABLE DESIGN

- **Multi-loose tube construction** – Single layer 2 to 144 fibres
- **Central strength member (CSM):** Glass fibre reinforced plastic material (GRP) with or without over-sheathing
- **Tube:** Thermoplastic material, containing up to 12 optical fibres filled with a low viscosity, thixotropic, non-melting gelfully compatible with fibre coating and tube material
- **Stranding:** The required numbers of elements (tubes and fillers) are SZ stranded around the central strength member
- **Longitudinal water tightness:** Water swelable elements (dry-core)
- **Sheath:** UV stabilised polyethylene in compliance with AS 1049. Two ripcords provided beneath the sheath for easy removal
- **Outdoor Jacket:** UV stabilised polyamide (Nylon) in compliance with AS 1049 integrally bonded to PE sheath

Technical Specifications

| | | | | | |
|---------------------------|----------|--|------------------------------|--------------------|-----------|
| Number of Fibres | | 2 to 72 | 84 – 96 | 108 – 120 | 132 – 144 |
| Number of elements | | 6 | 8 | 10 | 12 |
| Tube / Filler diameter | mm | 2.1 | | | |
| Cable nominal diameter | mm | 10.0 | 10.7 | 12.2 | 13.6 |
| Cable nominal weight | kg/km | 75 | 92 | 126 | 153 |
| Max. installation tension | kN | 2.0 | | 2.5 | |
| 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->+50 | Transport & Storage -20->+70 | Operation -10->+70 | |

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre and Buffer Tube Colours

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--------|------|--------|-------|-------|------|-------|-----|-------|--------|--------|------|------|
| Colour | blue | orange | green | brown | grey | white | red | black | yellow | violet | pink | Aqua |
| | | | | | | | | | | | | |

Fillers are either natural (opaque) or black.

Sheath Colour:

The outer sheath colour is blue.

Sheath Marking:

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

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 throughout test |
| Impact | IEC 60794-1-21-E4 | Weight: 1.5 kg Height: 1.0 m Anvil radius: 12.5 mm Impacts: 1 | After 5 minutes no fibre breaks, no damage to the sheath or to the core structure and no attenuation change throughout test |
| 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 throughout test |
| Bend | IEC 60794-1-21-E11 | Mandrel diameter: 20 x Cable OD Bend: 360° (1turn) | No attenuation change throughout test |
| Bend under tension | Concurrent to tensile test IEC 60794-1-21-E18A | Mandrel diameter: 40 x Cable OD Bend: 360° (1turn) | After 1 minute no fibre breaks, no damage to the sheath or to the core structure and no attenuation change from no load to full load |
| 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 4 km with a tolerance of - 1% / + 3%

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