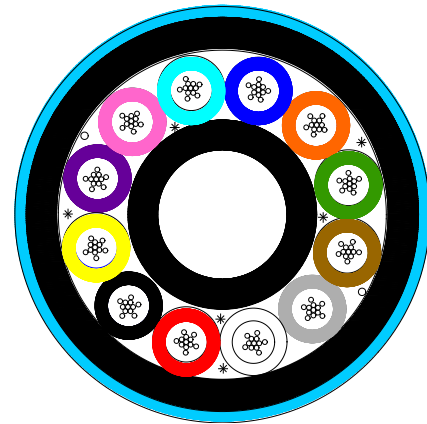


## External Underground Loosetube Optical Cable

### FEATURES:

This 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.

- 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 gel fully 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 swellable elements (dry-core)
- 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



### IDENTIFICATION

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

Fillers are either natural (opaque) or black.

### TECHNICAL DATA:

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	mm	10.0	10.7	12.2	13.6
Max. installation tension	mm	10.0	10.7	12.2	13.6
Max. crush resistance	mm	10.0	10.7	12.2	13.6
Min. bending radius	mm	At full load 20 x Cable OD			
		At no load 10 x Cable OD			
Temperature range	mm	Installation -0 -> +50	Transport & Storage -20 -> +70		Operation -10 -> +70

Sheath Colour: Blue

Sheath Marking: Outer sheath is marked in 1 metre intervals

## 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 throughout test
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