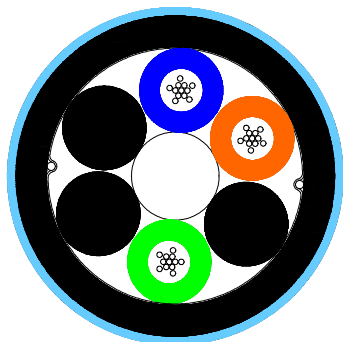


HS eXTR@CORE™ Enhanced High Strength Underground Optical Cable

Cable Design 

IEC 60794-3-11
ACMA - AS/CA S008



- Drawing not to scale -

- **Multi-loose tube construction**
- **Central strength member (CSM):** Glass fibre reinforced plastic material (GRP) with or without over-sheathing
- **Tube:** Thermoplastic material, containing up to 12 single-mode 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 system
- **Sheath:** 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 Enhanced High Strength cable is engineered to feature high shear and compression resistance specially designed and tested for direct burial in black, expansive soils. Qualified using enhanced Axial Compression Resistance (ACR) test method.

Technical data

Number of Fibres		2 to 72	96	144
Number of elements		6	8	12
Cable nominal diameter	mm	14.8	17.4	23.0
Cable nominal weight	kg/km	175	240	395
Max. tensile strength	kN	> 4.0		
Max. crush resistance	kN/100 mm	> 6.0 (Short term) / > 3.0 (Long term)		
Min. bending radius	mm	At full load	30 x Cable OD	
		At no load	15 x Cable OD	
Temperature range	°C	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 meter intervals as follows:

PRYSMIAN DW HIGH STRENGTH HSe eXTR@CORE Part Number  N10514 T/N #### MM/YY MADE IN AUSTRALIA *****

Main mechanical characteristics

Parameter	Test method	Test conditions	Acceptance criteria*
Tube kinking	IEC 60794-1-2-G7	Bend diameter (minimum): 80mm Number of cycles: 5 Number of samples: 10	No kink occurs at the minimum bend diameter and no attenuation increase greater than 0.1 dB occurs
Tensile strength	IEC 60794-1-2-E1	Load: As per cable max. Tensile strength in table above.	After 30 minutes the maximum strain on the fibre should not exceed 0.6% and no attenuation increase greater than 0.1 dB occurs
Crush	IEC 60794-1-2-E3	Short time: 10 min Long time: 120 min Load: As per max. 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 increase greater than 0.1 dB occurs
Impact	IEC 60794-1-2-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 increase greater than 0.1 dB occurs
Torsion	IEC 60794-1-2-E7	Sample length: 1 m Tension: As per table 1 of specification 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 increase greater than 0.1 dB occurs
Bend	IEC 60794-1-2-E11	Mandrel diameter: 30 x Cable OD Bend: 360° (1turn)	No attenuation increase greater than 0.1 dB occurs
Bend under tension	Concurrent to tensile test IEC 60794-1-2-E18	Mandrel diameter: 60 x Cable OD Bend: 360° (1turn)	After 1minute no fibre breaks, no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs from no load to full load
Temperature cycling	IEC 60794-1-2-F1	Sample length: 1000 m (minimum) Temperature range: From - 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
Compression & Shear resistance (Harbour Bridge)	Prysmian internal test method	Sample length: 3m	After the test is completed no damage to the sheath or to the core structure and no attenuation increase greater than 0.1 dB occurs from no load to full load
Water penetration	IEC 60794-1-2-F5B	Sample length=3m, Water height=1m	No water leakage after 24 hour
Axial Compression Resistance (ACR)	Prysmian internal test method	Sample length: > 3m Load: 4kN Compression: > 0/1% Lateral deviation: < 0.03 x Cable OD	No attenuation increase greater than 0.1 dB occurs. After the test is completed no damage to the sheath or to the core structure

* All optical measurements above are performed at 1550 nm except ACR test that is measured at 1625 nm

Logistic

Packing:

Steel drums with NOLCO-FLEX protection

Delivery Lengths:

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

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All sizes and values without tolerances are reference values. Specifications are for product as supplied by PrysmianGroup: any modification or alteration afterwards of product may give different result.

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