Prysmian Group

F(2-144)_LTHN FTL4/EP1

PRYSMIAN Draka General Cable

HS eXTR@CORE™ Enhanced High Strength Underground Optical Cable

Cable Design HSe

IEC 60794-3
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 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. Polyamide provides anti-termite protection.

Technical data

Number of Fibres		**2 to 72**	**96**	**120**	**144**
Number of elements		6	8	10	12
Cable nominal diameter	mm	14.8	17.4	19.9	23.0
Cable nominal weight	kg/km	175	240	305	395
Max. tensile strength	kN	6.0			
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 metre intervals as follows:

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PRYSMIAN DW HIGH STRENGTH HSe eXTR@CORE Part Number T/N #### MM/YY MADE IN AUSTRALIA *****M >> | << *****M
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Main mechanical characteristics

Parameter	Test method	Test conditions	Acceptance criteria*
Tube kinking	IEC 60794-1-23-G7	Bend diameter (minimum): 80mm Number of cycles: 5 Number of samples: 10	No kink occurs at the minimum bend diameter and no attenuation change throughout test
Tensile strength	IEC 60794-1-21-E1	Load: As per cable maximum installation tension in technical data table above	Fibre strain ≤ 0.6%. No physical damage and no change in attenuation after test.
Crush	IEC 60794-1-21-E3	Load: As per maximum crush resistance in technical data table above Duration: 10 min (short-term) / 120 min (long-term)	No physical damage. No change in attenuation after test (short-term) or during test (long-term).
Impact	IEC 60794-1-21-E4	Impact energy: 20 J Anvil radius: 300 mm	No physical damage. No change in attenuation after test.
Torsion	IEC 60794-1-21-E7	Sample length: 1 m Rotation: +/-180 degree, 10 cycles	No physical damage. No change in attenuation after test.
Bend	IEC 60794-1-21-E11	Mandrel radius: As per Min. bending radius at no load in technical data table above No. of turns/helix: 4, No. of cycles: 3	No physical damage. No change in attenuation after test.
Bend under tension	Concurrent to tensile test	Mandrel radius: As per Min. bending radius at full load in technical data table above Bend: 360º, 1 turn	No physical damage. No change in attenuation after test.
Temperature cycling	IEC 60794-1-22-F1	Sample length: 1000 m (minimum) Temperature range: As per Operation temperature range in technical data table above	No change in attenuation between 10°C & 30°C. Max. change in attenuation ≤0.15dB/km between Min. & Max. operation temperatures.
Cable aging	IEC 60794-1-22-F9	85°C for 168 h followed by Temperature cycling	Max. change in attenuation ≤0.10dB/km after test
Compression & Shear resistance (Harbour Bridge)	Prysmian internal test method	Sample length: 3m	No physical damage. No change in attenuation throughout test.
Water penetration	IEC 60794-1-22-F5C	Sample length=3m, Water height=1m	No water leakage after 24 hours
Axial Compression Resistance (ACR)	Prysmian internal test method	Sample length under compression: > 3m Load: 4kN Compression: ≥ 2% Lateral deviation: ≤ 50% Cable OD	No physical damage. No change in attenuation throughout test.

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

Logistic

Packing:

Steel drums with flexible cable wrap protection

Delivery Lengths:

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