

ExTell TerraCore Dielectric Series | G.652D SM | Multi-Tube | OD Direct Buried | FRP Armoured | Dual HDPE Jacket | Black | FO Cable

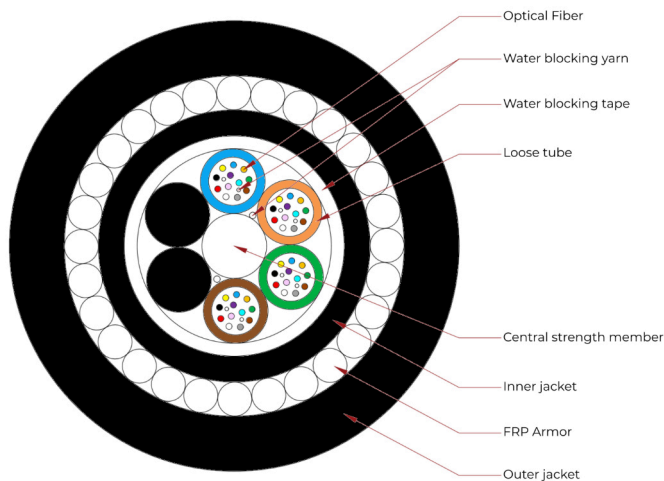
Reference Standard- ITU-T G.652.D | IEC 60794-1-1 | IEC 60794-1-2 | ANSI/TIA -598-D | IEC 60793-2-50 | IEC 60304 | RoHS

Product Overview

The ExTell TerraCore Dielectric Series is a high-performance, non-metallic backbone solution designed for Direct-Buried / Underground Duct applications requiring maximum immunity to electromagnetic interference and lightning. This cable features a compact Multitube architecture protected by high-tensile Fiber Reinforced Plastic (FRP) armouring, providing rugged mechanical defense without the use of metallic elements.

Engineered for scalability from 24 to 144 cores, the TerraCore Dielectric series utilizes a Dual HDPE Jacket system to provide redundant defense against moisture ingress and soil chemicals. This non-metallic design is ideal for areas with high lightning activity or proximity to high-voltage power lines, ensuring a maintenance-free, 25-year service life in the harshest soil conditions.

Cable Construction Schematic



Design Highlights

- **Scalable Multitube Architecture:** Utilizes a stranded design (up to 1+12 tubes) to support high-density fiber counts from 24 to 144 cores.
- **Total Dielectric Immunity:** Features FRP central strength members and FRP wire armouring, making the cable completely immune to EMI, RFI, and lightning strikes.
- **Dual HDPE Protection:** Dual High-Density Polyethylene jackets (Inner and Outer) provide superior mechanical strength and chemical resistance for direct-buried environments.
- **3000N Tensile & Crush Resistance:** Engineered to withstand heavy soil loads and high installation tension without signal degradation.
- **Total Water-Block System:** Employs water-blocking yarns and tape to prevent longitudinal water migration, ensuring long-term optical stability.

Technical Specifications (Fiber & Materials)

Parameters	Specification
Fiber Type	SM G.652D
Mode Field Diameter (1310nm)	9.2 ± 0.4 μm
Cladding Diameter	125 ± 0.7 μm
Cladding Non-Circularity	≤ 0.8 %
Coating Diameter	245 ± 10 μm
Coating / Cladding Concentricity Error	≤ 12.5 μm
Cable Cut-Off Wavelength	≤ 1260 nm
Attenuation Coefficient (1310nm)	≤ 0.35 dB/km
Attenuation Coefficient (1550nm)	≤ 0.21 dB/km
Proof Stress Level	≥ 100 kpsi



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Parameters	Specification
Fiber Color	Full Color Spectrum
Loose Tube Material	High-Modulus Polypropylene (PP)
Loose Tube Color	Full Color Spectrum
Filler Material	Polyethylene (PE)
Filler Color	Black
Inner Jacket Material	High-Density Polyethylene (HDPE)
Inner Jacket Color	Black
Armouring Material	Non-metal FRP Reinforced Pieces
Outer Jacket Material	High-Density Polyethylene (HDPE)
Outer Jacket Color	Black
Central Strength Member (CSM)	FRP (Fiber Reinforced Plastic)

Cable Construction Design

Fiber Count	Structure	Fibers / Tube	Loose Tube Diameter	CSM/Pad Diameter	Inner Jacket Thickness	Outer Jacket Thickness	Cable Diameter	Nominal Weight
24 Core	1 + 6	6	2.0 ± 0.1 mm	2.0/2.0 mm	0.8 mm	1.7 mm	13.9 ± 0.5 mm	167 kg/km
48 Core	1 + 6	12	2.0 ± 0.1 mm	2.0/2.0 mm	0.8 mm	1.7 mm	13.9 ± 0.5 mm	169 kg/km
96 Core	1 + 8	12	2.0 ± 0.1 mm	2.0/3.5 mm	0.8 mm	1.7 mm	15.4 ± 0.5 mm	201 kg/km
144 Core	1 + 12	12	2.0 ± 0.1 mm	2.0/6.3 mm	0.8 mm	1.7 mm	18.2 ± 0.5 mm	274 kg/km

Mechanical & Environmental Performance

Test Description	Standard Reference	Performance Requirement
Tensile Strength (Short-Term)	IEC 60794-1-2-E1	3000N (Additional Attenuation ≤ 0.1dB)
Crush Resistance (Short-Term)	IEC 60794-1-2-E3	3000N/100mm
Min. Bending Radius(Static)	IEC 60794-1-2-E11	12.5 times cable diameter
Min. Bending Radius (Dynamic)	IEC 60794-1-2-E11	25 times cable diameter
Water Penetration	IEC 60794-1-2-F5	Satisfied (Longitudinal blocking)
Temperature Range	IEC 60794-1-2-F1	-40°C to +70°C



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Standards & Compliance

Category	International Standards	Description
Optical Fiber Standard	ITU-T G.652D	Defines characteristics of single-mode optical fiber.
Cable Design	IEC 60794-1-1	General requirements for optical fiber cable construction and marking.
Cable Test Procedures	IEC 60794-1-2	Mechanical and environmental test methods for fiber cables.
Color Identification	ANSI/TIA-598-D	Primary standard for optical fiber color identification.
Color Coding	IEC 60304	Global reference standard for insulation and fiber color coding.
Fiber Glass	IEC 60793-2-50	Product specifications for Class B single-mode fibers.
Environmental	RoHS	Global sustainability and chemical safety compliance.

Ordering Information

Part Number	Product Description
ES2DITDH2DM1-F024-BK	ExTell TerraCore Dielectric Series 24C G.652D SM Multi-Tube Outdoor Direct Buried Non-metallic FRP Armoured Dual HDPE Jacket Water-blocking Tape & Yarn Black.
ES2DITDH2DM1-F048-BK	ExTell TerraCore Dielectric Series 48C G.652D SM Multi-Tube Outdoor Direct Buried Non-metallic FRP Armoured Dual HDPE Jacket Water-blocking Tape & Yarn Black.
ES2DITDH2DM1-F096-BK	ExTell TerraCore Dielectric Series 96C G.652D SM Multi-Tube Outdoor Direct Buried Non-metallic FRP Armoured Dual HDPE Jacket Water-blocking Tape & Yarn Black.
ES2DITDH2DM1-F144-BK	ExTell TerraCore Dielectric Series 144C G.652D SM Multi-Tube Outdoor Direct Buried Non-metallic FRP Armoured Dual HDPE Jacket Water-blocking Tape & Yarn Black.

