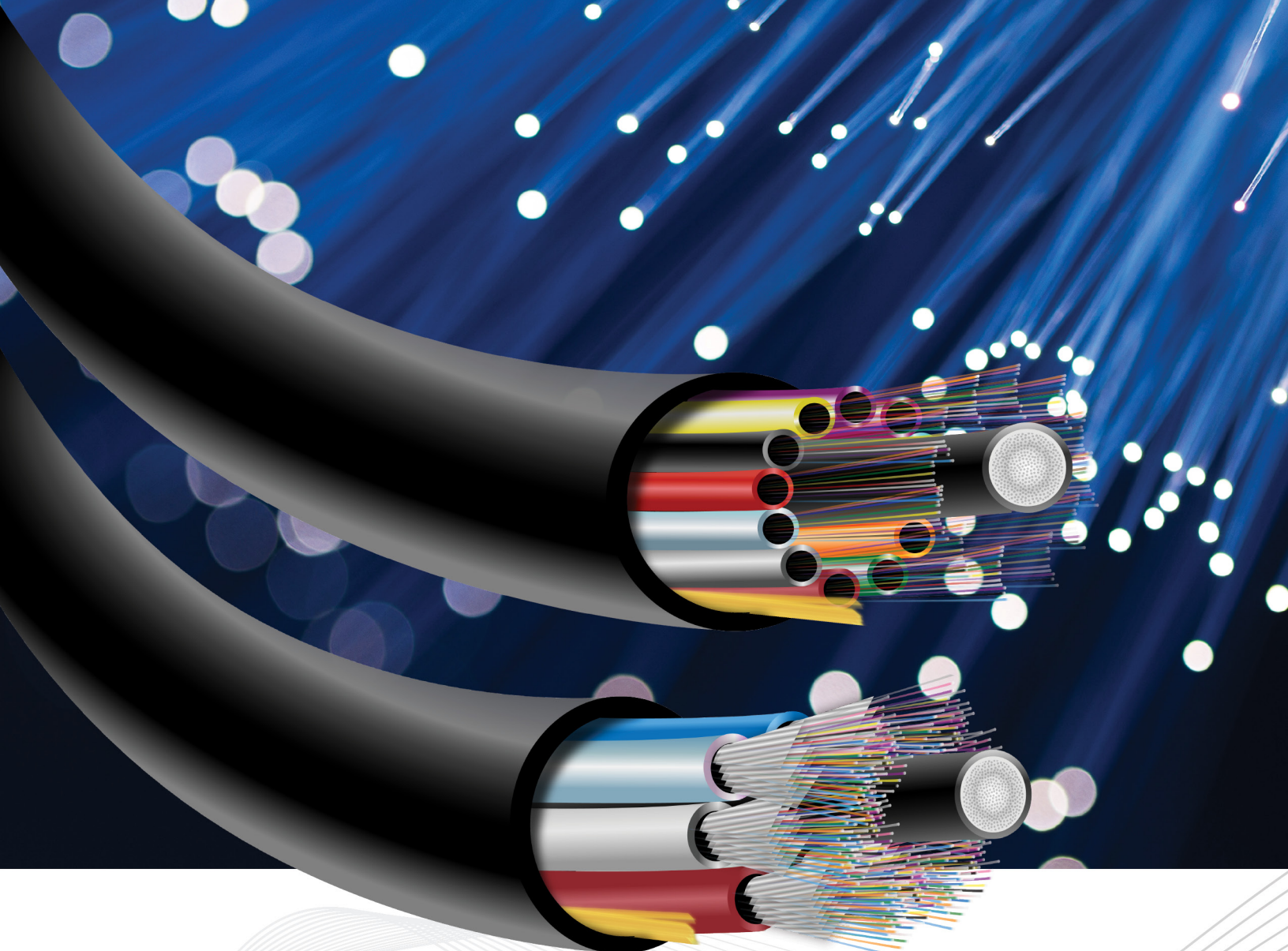


Fiber Optic Communication Solutions



WTEC
Energy Innovation

During the late 1990's boom in fiber-optic development, **W**TEC was a leading supplier of high grade VAD Fiber Optic Cables. Our integrated model approach allowed us to supply vast market growth in the infrastructure of the telecommunications industry. Since then our products have evolved to offer zero-water peak, low-attenuation rate solutions in both loose-tube and ribbon fiber to a steadily growing market.

Our experience and success in the energy sector underpins our commitment to our integrated model approach for WTEC's fiber communication solutions. Our unrelenting focus on quality standards, guaranteed lead times, customer service and innovative technologies has made us a leader in the industries we serve.

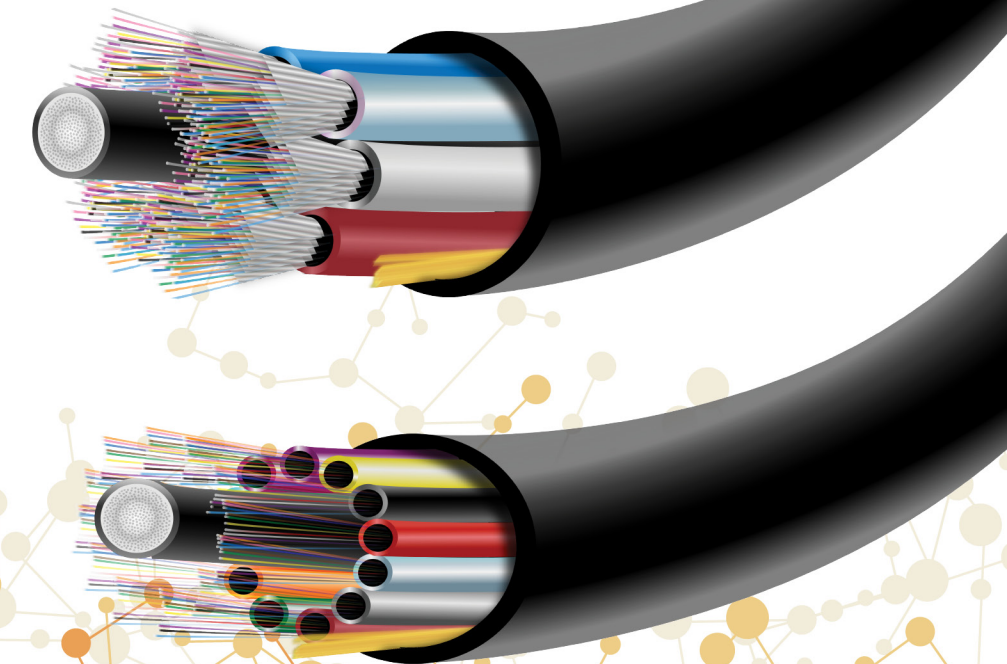
The current fiber expansion of FTTH (Fiber to the Home) has put enormous pressures on the industry leading to strapped production. WTEC however, through it's global supply chain has maintained it's ability to provide on time delivery of fiber optic cable. Through these advantages we are committed to innovation, enhancing and supporting customer relationships, and meeting your project deadlines.



WTEC's optical fiber is manufactured using the atmospheric Vapor Axial Deposition (VAD) process to ensure they are lightweight, have a high tensile strength as well as low attenuation rates. The atmospheric VAD process enables fabrication of the highest quality fiber core preforms from which multiple core rods can be drawn and in turn optical fibers are drawn from these core rods.

All WTEC optical fiber have maximum attenuation <math><0.35 \text{ dB/Km}</math> at 1310nm, <math><0.34 \text{ dB/km}</math> at 1383 nm or less than attenuation at 1310, <math><0.22 \text{ dB/Km}</math> at 1490nm, <math><0.22 \text{ dB/Km}</math> at 1550nm and <math><0.24 \text{ dB/Km}</math> at 1625nm. WTEC's complete range of fiber optic cables accommodates all installation environments and cable applications, with optical fibers available to meet ITU-T G.652.D, ITU-T G.657.A1, ITU-T G.657.A2, ITU-T G.657.B3 and ITU-T G.655.C&D standards.

Transportation is a key element in the Fiber Optic Market, due to the bulk and size of maneuvering within Fiber Hubs and cities. WTEC has in place specific locations that enable a complete and expedited solution for the Fiber to the Home Market. WTEC Warehouse facilities are strategically located to strengthen our over the road trucking advantage with common lanes throughout the United States, allowing for simple and on time delivery process of customer commodities. We are able to provide tailored customer sizes and lengths for packaging that is garnered to the Fiber to the The Home Market. WTEC offers us a logistical advantage on-site for our customers with our Reusable and Returnable Reel Program, offering a sustainable solution for the cumbersome task of discarding of the reels. We will schedule and work with our customer on the loading and transportation of the reels.



All cable configurations are available with all of WTEC's Fiber Optics as per table 1



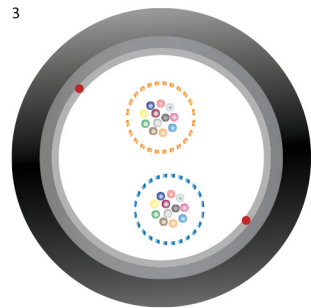
1
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 12, 24, 36, 48, 60, 72, 96, 144
PE Outer Jacket
FRP Central Strength Member
Dielectric Armoring
Rip Cord

ARMORED
DUCT-OFC



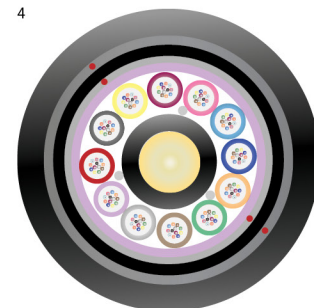
2
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 12, 24, 36, 48, 60, 72, 96, 144
PE Outer Jacket & PE Inner Jacket
Steel Tape Armoring
Central Strength Member
Rip Cord

ARMORED
DIRECT BURIAL



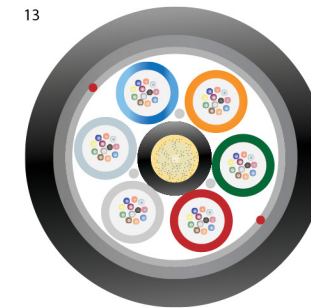
3
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 4, 6, 8, 12, 24
Dielectric Armoring
Rip Cord

ARMORED
DUCT-OFC



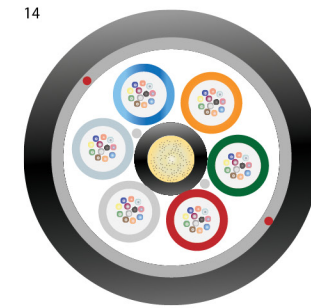
4
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 12, 24, 36, 48, 60, 72, 96, 144, 288
Double Corrugated Steel Tape
Armoring
MDPE/HDPE Black Inner Sheath
Central Strength Member
Ripcord

ARMORED
DIRECT BURIAL



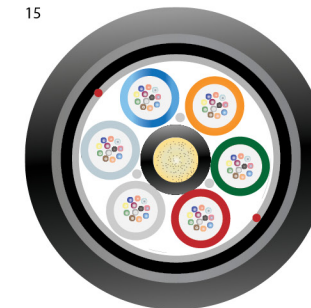
13
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144, 288
Single Mode and Multi-Mode Available
PE Outer Jacket
Central Strength Member
Rip Cord
Additional Rodent Proof Outer Jacket
OPTIONAL

DUCT-OFC



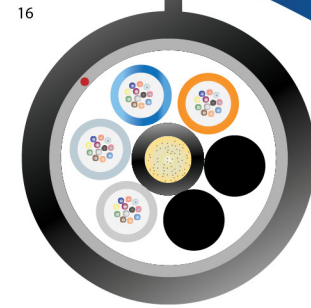
14
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144
Single Mode and Multi-Mode Available
PE Outer Sheath
Central Strength Member
Rip Cord

AERIAL OFC



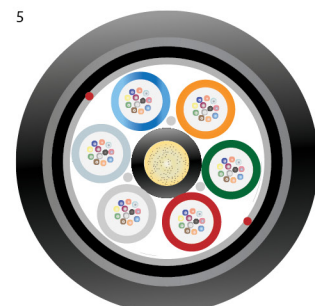
15
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144
Single Mode and Multi-Mode Available
PE Outer Jacket
Central Strength Member
Rip Cord

AERIAL OFC



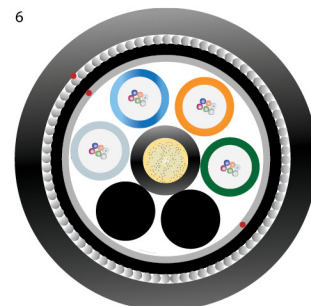
16
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144
Single Mode and Multi-Mode Available
PE Outer Jacket
Messenger Wire
Central Strength Member
Rip Cord

AERIAL OFC



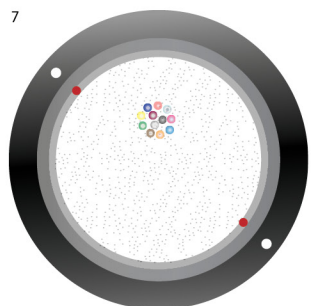
5
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 12, 24, 36, 48, 60, 72, 96, 144
PE Outer Jacket & PE Inner Jacket
Dielectric Armoring
Central Strength Member
Rip Cord

ARMORED
DIRECT BURIAL



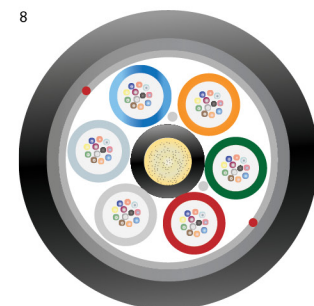
6
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
Single Mode and Multi-Mode Available
FC: 12, 24, 36, 48, 60, 72, 96
PE Outer Jacket & PE Inner Jacket
Steel Wire Armoring
Central Strength Member
Rip Cord

ARMORED
DIRECT BURIAL



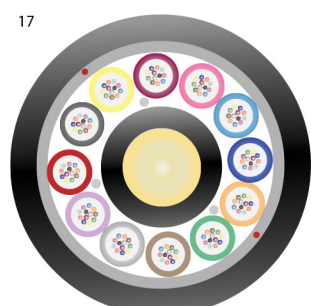
7
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
FC: 4, 6, 12
PE Outer Jacket
Steel Tape Armoring
Embedded Strength Members
Rip Cord

ARMORED
DUCT-OFC



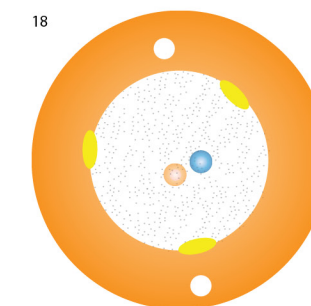
8
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144, 216, 288, 360, 432 (12F X 36), 432 (24F X 18)
PE Outer Jacket
Corrugated Steel Tape Armoring
FRP Central Strength Member
Rip Cord

ARMORED
DIRECT BURIAL



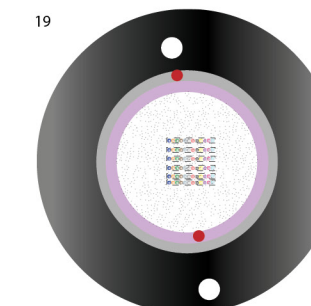
17
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144
Single Mode and Multi-Mode Available
PE Outer Jacket
Central Strength Member
Rip Cord

AERIAL OFC



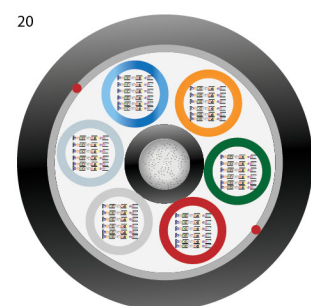
18
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 2, 4
Single Mode and Multi-Mode Available
PP Sheath
Embedded Strength Members

DIRECT BURIAL
F-T-X



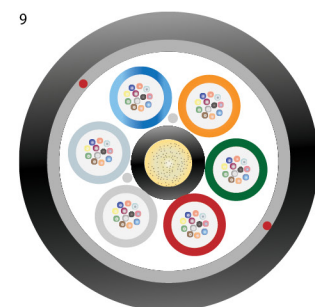
19
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 24, 48, 72, 96, 144
Embedded Strength Members
Rip Cord

DUCT-OFC
RIBBON-OFC



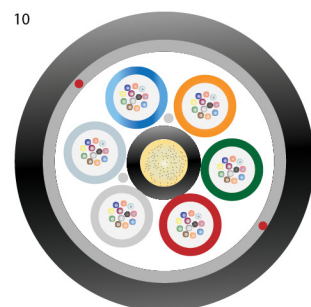
20
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 216, 288, 432, 576, 720, 864
MDPE/HDPE Outer Sheath
Central Strength Member
Rip Cord

ARMORED
DUCT-OFC
RIBBON-OFC



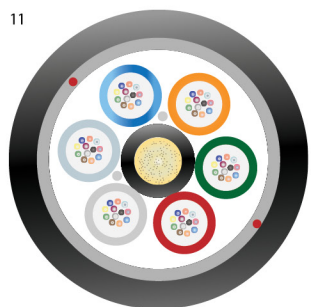
9
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144, 288
PE Outer Jacket
Corrugated Steel Tape Armoring
FRP Central Strength Member
Rip Cord

ARMORED
DUCT-OFC
DIRECT BURIAL



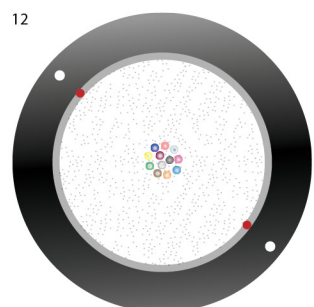
10
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 36, 48, 60, 72, 96, 144, 216, 288, 432 (12F X 36), 432 (24F X 18), 576
Single Mode and Multi-Mode Available
PE Outer Jacket
Central Strength Member
Rip Cord
Additional Rodent Proof Outer Jacket OPTIONAL

DUCT-OFC



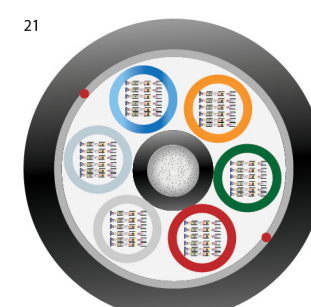
11
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 12, 24, 48, 60, 72, 96, 144 (12LT X 12F), 144 (6LT X 24F), 288
Single Mode and Multi-Mode Available
PE Outer Jacket
Central Strength Member
Rip Cord
Additional Rodent Proof Outer Jacket
OPTIONAL

DUCT-OFC



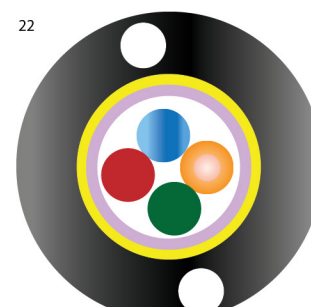
12
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 4, 6, 8, 12
Single Mode and Multi-Mode Available
Embedded Strength Members
Dielectric Armor
Rip Cord

DROP-OFC
DUCT-OFC



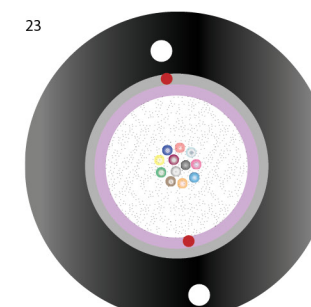
21
Flame Retardant
Longitudinally Waterproof
Transversely Waterproof
FC: 216, 288, 432, 576, 720, 864
MDPE/HDPE Outer Sheath
Central Strength Member
Rip Cord

ARMORED
RIBBON-OFC
DUCT-OFC
DIRECT BURIAL



22
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
FC: 2, 4, 12
PP Sheath
Embedded Strength Members
Single Mode and Multi-Mode Available

DROP-OFC
F-T-X



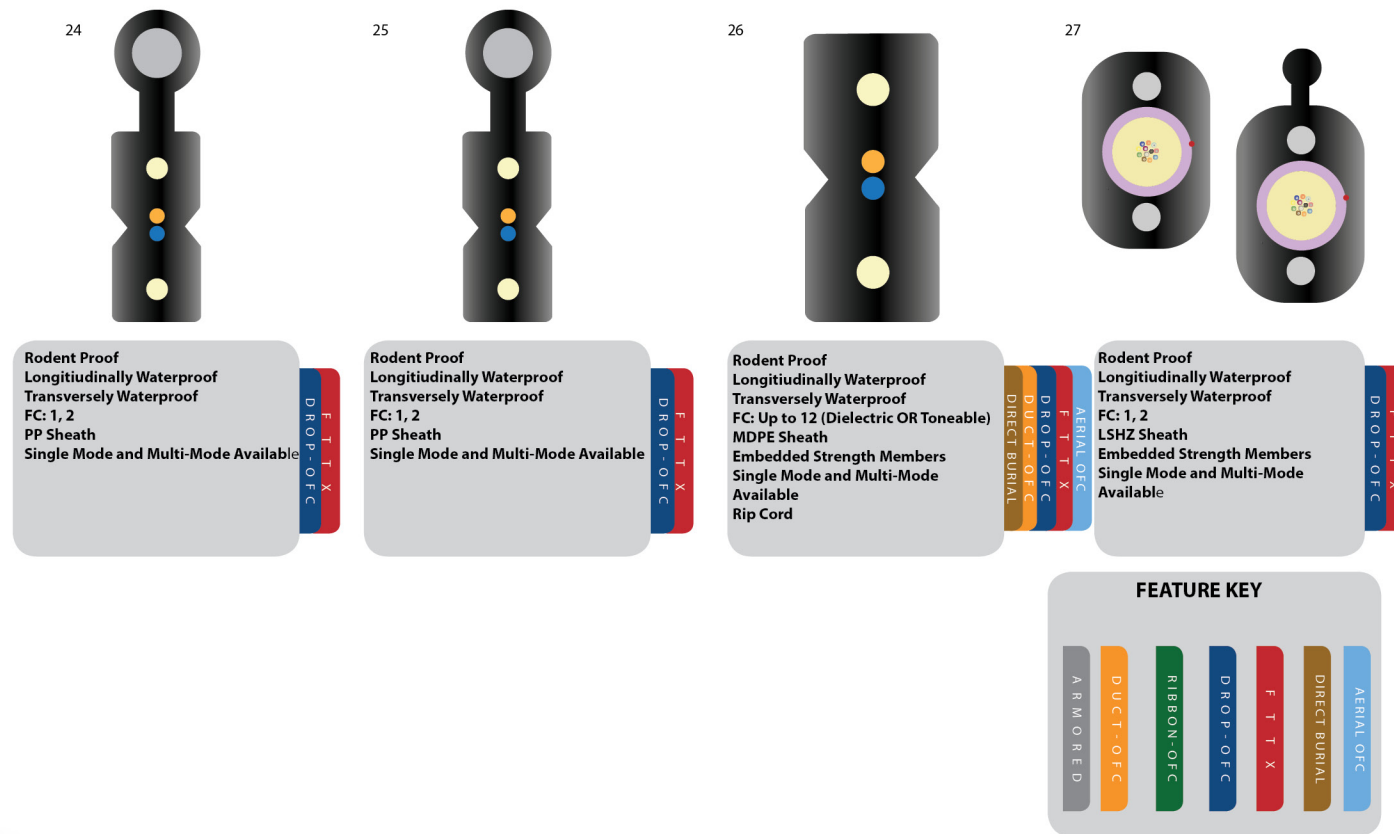
23
Flame Retardant
Rodent Proof
Longitudinally Waterproof
Transversely Waterproof
FC: Up to 12
PE Outer Sheath
Embedded Strength Members
Dielectric Jacket
Single Mode and Multi-Mode Available

DUCT-OFC
RIBBON-OFC

ALL WTEC Fiber Optic Cables
Complies with or exceeds ITU
Recommendation G.651 to
G.657, IEC 60793 & 60794.

FEATURE KEY

- ARMORED
- DUCT-OFC
- RIBBON-OFC
- DROP-OFC
- F-T-X
- DIRECT BURIAL
- AERIAL OFC



ALL WTEC Fiber Optic Cables Complies with or exceeds ITU Recommendation G.651 to G.657, IEC 60793 & 60794.

All cable configurations are available with all of WTEC's Fiber Optics

Product	Description	Application	Benefits	Attenuation Rates	ITU-T Specification met
WTEC-OH	Single mode fiber with low water peak fiber	Regional, metropolitan and local access networks	Designed for use over 1260nm to 1625 nm	≤ 0.34 dB/km at 1310 nm ≤ 0.34 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.22 dB/km at 1490 nm ≤ 0.20 dB/km at 1550 nm ≤ 0.23 dB/km at 1625 nm	ITU-T G.652.D
WTEC-OH(E)	Single mode fiber with low water peak fiber	Regional, metropolitan and local access networks	Designed for use over 1260nm to 1625 nm	≤ 0.33 dB/km at 1310 nm ≤ 0.31 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.19 dB/km at 1550 nm ≤ 0.21 dB/km at 1625 nm	ITU-T G.652.D
WTEC-MICRO-BEND	Single mode fiber with reduced coating diameter, low bend sensitivity and low water peak attenuation	FTTH (Fiber To The Home) applications	Low bend sensitivity across the O, E, S, C & L-bands	≤ 0.34 dB/km at 1310 nm ≤ 0.34 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.20 dB/km at 1550 nm ≤ 0.22 dB/km at 1625 nm	ITU-T G.657.A1
WTEC-BEND PLUS	Single mode fiber, low bend sensitivity and low water peak attenuation	FTTH (Fiber To The Home) applications	Low bend sensitivity across the O, E, S, C & L-bands	≤ 0.33 dB/km at 1310 nm ≤ 0.31 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.20 dB/km at 1550 nm ≤ 0.21 dB/km at 1625 nm	ITU-T G.657.A1
WTEC-BEND	Single mode fiber, low bend sensitivity and low water peak attenuation	FTTH (Fiber To The Home) applications	Low bend sensitivity across the O, E, S, C & L-bands	≤ 0.34 dB/km at 1310 nm ≤ 0.34 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.22 dB/km at 1490 nm ≤ 0.20 dB/km at 1550 nm ≤ 0.23 dB/km at 1625 nm	ITU-T G.657.A1
WTEC-MICRO-BEND(E.)	Single mode fiber, reduced coating diameter, ultra-low bend sensitivity	FTTH (Fiber To The Home) applications - In building use, high fiber counts	Enhanced low bend	≤ 0.35 dB/km at 1310 nm ≤ 0.35 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.21 dB/km at 1550 nm ≤ 0.23 dB/km at 1625 nm	ITU-T G.657.A2
WTEC-BEND (E.)	Single mode fiber, ultra-low bend sensitivity	FTTH (Fiber To The Home) applications - In building use	Enhanced low bend	≤ 0.35 dB/km at 1310 nm ≤ 0.35 dB/km at 1383 nm or less than attenuation at 1310 nm ≤ 0.20 dB/km at 1550 nm ≤ 0.21 dB/km at 1625 nm	ITU-T G.657.A2
WTEC-BEND-SUPER	Single mode fiber, ultra-low bend sensitivity	FTTH (Fiber To The Home) applications - In building use	Enhanced low bend	0.35 dB/km at 1310 nm 0.35 dB/km at 1383 nm or less than attenuation at 1310 nm 0.20 dB/km at 1550 nm 0.23 dB/km at 1625 nm	ITU-T G.657.B
WTEC-DOF	Single mode, non-zero dispersion shifted fiber	High data-rate, multi-wavelength long haul transmission	Large effective area for power handling, dispersion optimised	0.22 dB/km at 1550 nm 0.24 dB/km at 1625 nm	ITU-T G.655.C&D

Table 1 demonstrates WTEC's Fiber Optic properties. Full specification sheets are available upon request.



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