

Polywater[®] FTTx Communications Lubricant



TECHNICAL SPECIFICATION

Description:

Polywater[®] FTTx Lubricant is a high performance, liquid cable pulling lubricant designed specifically for communication cable installations. Lubricant FTTx is highly concentrated and works with only a thin coating. It can be sprayed or wiped for easy application, or poured into innerduct for long pulls. It has excellent cling and wetting, evenly coating the entire cable jacket surface. Lubricant FTTx works even after it has dried. The residue is a thin, slippery film that retains lubricity for months after use.

Polywater[®] FTTx Lubricant is recommended for quick and easy lubrication with no mess. The lubricant is suitable for all types of communication cable installations.

Friction Testing:

Friction is determined using a standard Telcordia test procedure¹. The duct is wrapped 420° around a three-foot-diameter cylinder. A variable incoming weight is attached to the cable as it is pulled at a set rate of 65 feet per minute. A load cell takes pulling tension data which is used to determine a "dynamic" friction coefficient.

Coefficient of Friction for MDPE-Jacketed Cable on HDPE Continuous Innerduct

Back Tension	Wipe Application	Spray Application
8 lb _f	.09	.09
25 lb _f	.08	.07

¹ Telcordia Standard TR-NWT-002811, Section 4.1.3 and 4.1.4; Generic Requirements for Cable Placing Lubricants.



Product Benefits:

- Easy spray or wipe application
- Lubricates with a thin film
- Excellent friction reduction
- Performs after drying
- Compatible with cable jackets
- Clean and non-staining

End Use:

- Fiber optic drops (FTTx)
- High performance data cable
- Textile innerduct
- Long fiber pulls
- Long copper pulls

Specifications and descriptions are subject to change without prior notice.

Performance Properties

Wetting – Continuous Coat:

Wetting is a measure of the lubricant's ability to coat the jacket as a thin film for continued lubricity on longer pulls.

Polywater® FTTx Lubricant will wet out evenly on all surfaces. It will not bead up or rub off of the cable jacket. Lubricant will completely coat a one-inch diameter PVC-jacketed cable dipped six inches into the lubricant; then withdrawn within 10 seconds. The lubricant coating shall cover 100% of the cable jacket without dripping off or pulling away from the edges as it is held horizontally for one minute (at 70°F).

Combustibility:

Lubricant has no flash point and dried residue is non-flammable.

Sprayability:

Low viscosity lubricant allows product to flow through spray head. Lubricant will not clog valves or atomizers.

Physical Properties:

<u>Property</u>	<u>Result</u>
Appearance:	Slightly thickened, white liquid
Percent Non-Volatile Solids:	3 %
VOC Content:	0 gms/liter
Viscosity:	250 – 750 cps @10rpm
pH:	6.5 – 8.0

Application Properties:

Temperature Use Range:

20°F to 120°F (-5°C to 50°C).

Temperature Stability:

No phase-out after five freeze/thaw cycles or 5-day exposure at 120°F (50°C). *Will not phase out or separate during the shelf life of lubricant.*

Clean-Up:

Non-staining. Complete clean-up with water.

Storage and Shelf Life:

Store tightly sealed, away from direct sunlight. Lubricant shelf life is one year past the date of manufacture.

Cable Compatibility:

Polyethylene Stress Cracking:

Polywater® FTTx does not cause environmental stress cracking of polyethylene jackets commonly found on communications cables. Untreated polyethylene (Union Carbide DYNK) and MDPE jacket material were both tested according to ASTM standard method.¹ After 168 hours exposure none of the test specimens showed failures.

Polycarbonate Stress Cracking:

Polywater® FTTx will not stress crack polycarbonate. Polycarbonate bars are bent to a defined strain and exposed to lubricant as described in the Telcordia standard², Section 8.2, Stress Cracking of Polycarbonate. After 48 hours, none of the test specimens showed signs of crazing or cracking.

Corrosion of Copper and Steel:

Polywater® FTTx will not corrode copper after 24-hour exposure as described in the Telcordia standard², Section 8.3, Copper Mirror Test.

¹ ASTM Test Method D1693, Environmental Stress-Cracking of Ethylene Plastics.

² Telcordia Standard TR-NWT-002811; Generic Requirements for Cable Placing Lubricants.

Directions for Use:

Polywater® FTTx Lubricant can be sprayed or wiped directly onto the cable as it enters the conduit. It may also be poured directly into duct.

For normal cable pulls, prelube the conduit by spraying five to ten squirts of pulling lubricant into the conduit before pulling. Saturate a wipe by spraying with lubricant and lightly wipe lubricant on jacket to fully coat the cable as it enters the conduit.

For lowest coefficient of friction, completely prelubricate the conduit. Squirt or pour appropriate amount of lubricant into the conduit and pull through a sponge or lubricant spreader to coat the interior of the entire length. Wipe lubricant on cables as they enter the conduit as described in above.

High efficiency spray pulling lubricants are effective with very thin coats in the range of 1 to 5 mg/cm² of jacket surface. See product usage section for lubricant quantity formulas.