



Quality Tools, Equipment & Line Materials for the Energy Industry.

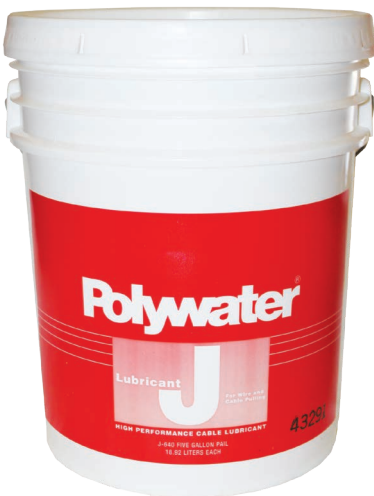
**Polywater**  
Solutions at work.

## Specific Lubricants Available

- Fibre Optic
- Low-Smoke Zero halogen
- High Water Environments
- Cable Blowing
- Winter Conditions

**FULL RANGE OF CABLE LUBRICANTS TO SUIT ALL APPLICATIONS**

**Polywater**  
Solutions at work.



### Cable Pulling Lubricant - Polywater

#### J Lubricant

**Part No. Various**

Polywater Lubricant J is a high performance, clean, slow-drying, water-based gel lubricant. Lubricant J provides maximum tension reduction in all types of cable pulling. It is especially recommended for long pulls, multiple-bend pulls and pulls in a hot environment. Lubricant J dries to form a thin lubricating film which retains its lubricity for months after use.

Polywater Lubricant J is a specification-grade lubricant that does not promote flame propagation when used with fire-retardant cables and systems. It is harmless to humans, environmentally safe, compatible with common Australian cable jacket materials, and can be easily applied as part of the unique Polywater® Lubricant Application System.

#### Features

- High performance cable lubricant for heavy cable installations
- Maximum Friction Reduction
- High Cling Factor
- Compatible with common Australian cables
- Temperature Stable
- Non-Combustible Residue
- Specification Grade "J" - The lubricant contain no waxes, greases, silicones, or polyalkylene glycol oils
- Application System available in 'Front End Packs'
- Complete cleanup is possible with water

#### J Front End Pack™ Lubricant

**Part No. J-99 & J-110**

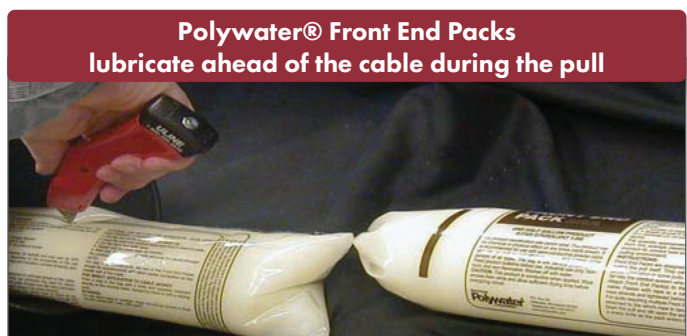
The front end pack is a conduit-sized polyethylene bag of lubricant. The Front End Pack™ travels through the conduit on the winch line prelubricating the conduit ahead of the cable being pulled.

Part No.	Description
J-DRUM	208L Drum
J-640	19L Drum
J-128	3.8L Bucket
J-110	1.9L Front End Pack
J-99	950ml Front End Pack



CLICK or SCAN for Polywater J Application Video

SCAN OR CLICK TO VIEW VIDEO



**Polywater® Front End Packs lubricate ahead of the cable during the pull**



**Bulk 208 litre Drum  
PR-DRUM**



**19litre Drum  
PR-640**

### PR Lubricant

**Part No. Various**

Polywater® PR Power Cable Lubricant is a complex polymer liquid lubricant that provides excellent friction reduction.

Perfect for installing cables from the transformer to the service entrance of businesses or homes.

Polywater PR is a stringy, silicone-enhanced liquid that can be poured or pumped into duct.

**Pourable 3.8litre Bottle  
PR-128**



**Universal, Pourable  
Underground Cable Pulling  
Lubricant**

#### Features

- **Field Friendly:** Packaging designed for the installer
- **High Shear Resistance:** Allows friction reduction even under high sidewall pressure in bends
- **Slow Drying:** The residue is a thin, slippery film that retains lubricity for months after use
- **Compatible with Common Cables:** Suitable for use on many cable jackets

Part No.	Description
PR-128	3.8 litre bottle
PR-640	19 litre drum
PR-DRUM	208 litre drum



### LZ Lubricant

**Part No. Various**

Polywater® LZ offers proven cable compatibility, superior combustion resistance, and an inherently low coefficient of friction.

Polywater LZ should be specified for installations of LSZH/LSHF cable in ducts and where fire propagation is a concern.

**Suitable for use on  
CPE and CSPE Fire-Retardant  
Cable Jacket**

#### Features

- **Low Friction Coefficient:** Maximum tension reduction on all types of cable jackets
- **Universal:** Suitable for all types of jackets and cable
- **Specification Grade:** Meets the performance requirements of power and petrochemical plants, mass transit systems, airports, and high-occupancy buildings
- **Compatible:** Tested on LSZH/LSHF thermoplastic and thermo-set jackets
- **Safe:** Suitable for use on CSPE and CPE fire-retardant cable jackets



See next page for LP-D5 Lubricant Pump

Part No.	Description
LZ-640	19L Drum
LZ-DRUM	208L Drum

**Tested on Low Smoke - Zero  
Halogen Thermoplastic &  
Thermoset jackets**



A clean and efficient way to pump all types of cable pulling lubricant from 19 to 208L drums



Polywater<sup>®</sup> LP-D5 Lubricant Pump is a drill-operated, self-priming gear pump. It pumps all varieties of Polywater lubricants directly into conduit or onto cable at optimal rates for different conduit sizes and pulling speeds

**Makes Cable Lubricating Clean and Efficient**

**Features & Benefits**

- **CLEAN**  
Eliminates hand scooping, hand pouring and lengthy clean-ups
- **EFFICIENT**  
Provides labor savings with consistent lubricant and less effort when pulling cable
- **VERSATILE**  
Lubricants can be pumped into vertical or horizontal conduits
- **ADJUSTABLE**  
Works with a variable-speed drill (not included) to pump at appropriate rate based on cable size and pulling speed
- **CORROSION RESISTANT**  
Solid brass body with stainless steel shaft, which is not affected by water-based lubricants



Part No.	Description	Includes	Weight (kg)
LP-D5	Drill Powered Lube Pump (Drill not included)	1 x Lube Pump 1 x 4.7m discharge hose 1 x Extension tube for 208L drums 2 x lubricant applicators	3

**Specifications**

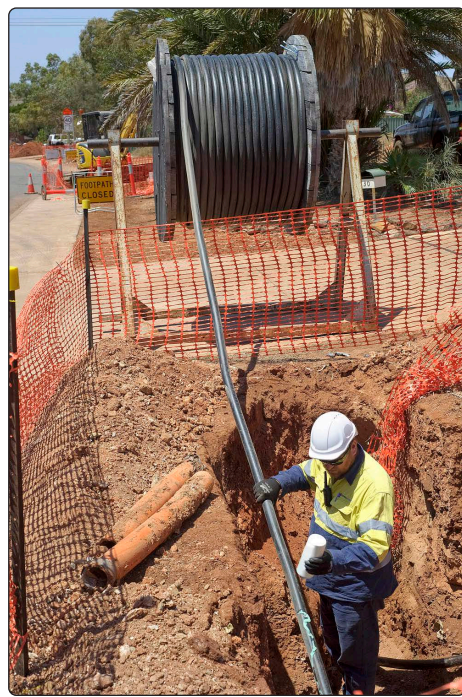
- **OPERATION**  
Designed for 19L and 208L drums (with extension)  
Easy to clean with water.
- **POWER SOURCE**  
Use with 12mm, variable speed drill.  
Can be modified for alternate power source.
- **PUMP RATE**  
Dispenses up to 6 Litres of lubricant per minute.
- **LIGHTWEIGHT**  
Weighs less than 3kg for easy transfer and portability.





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**Program for Cable Pulling Tension Calculation and Conduit System Design**

## Cable Pull Planning Software - Polywater

### Pull-Planner™ 4.0

#### Design Safe and Efficient Cable Pulls with Pull-Planner™ 4.0

Pull-Planner 4.0 makes the planning of small or complex, large-scale cable pulling projects easier and more efficient.

Providing coefficient of friction (COF) guidance to reduce risks during cable pulls.  
Calculates maximum pulling and sidewall tensions to reduce joints and avoid cable damage

#### Benefits

- Calculate pulling tensions and sidewall loadings during your job planning
- Provide a detailed pull plan to your client for sign off
- Understand your coefficient of friction and maximise the length of run, based on using a high quality or specification grade lubricant\*
- See the difference in varying coefficients of friction and determine the significant value created using a specification grade lubricant from Polywater
- Resource your job with the most suitable equipment
- Designers can minimise the number of pulling pits required in a cable run, saving considerable time and money
- Calculate the impact of bends, multiple cables, rollers/sheaves, pushing devices and back tension off drums and direction of pull
- Ability to provide a field based COF once the cable pull is complete

### Typical Pull-Planner™ Report

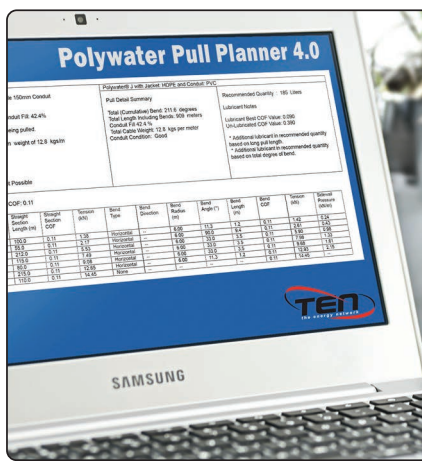
Pull-Planner™ Report

<p>Pull Name: 1C 630mm<sup>2</sup> 132kV HDPE Cable 150mm Conduit</p> <p>Conduit ID: 150 millimeter(s)      Conduit Fill: 42.4%</p> <p>Total of 1 cable(s) of 1 different type(s) being pulled.</p> <p>Type #1 1 Cable(s)    O.D. of 97.6 mm    weight of 12.8 kgs/m</p> <p>Total cable weight: 12.8 kgs/m</p> <p>Weight correction factor set to: 1</p> <p>Configuration: Single Cable</p> <p>Jam/Clearance Analysis: Jamming Not Possible</p>	<p>Polywater® J with Jacket: HDPE and Conduit: PVC</p> <p>Pull Detail Summary</p> <p>Total (Cumulative) Bend: 211.6 degrees Total Length Including Bends: 909 meters Conduit Fill 42.4 % Total Cable Weight: 12.8 kgs per meter Conduit Condition: Good</p>	<p>Recommended Quantity : 185 Liters</p> <p>Lubricant Notes</p> <p>Lubricant Best COF Value: 0.090 Un-Lubricated COF Value: 0.390</p> <p>* Additional lubricant in recommended quantity based on long pull length. * Additional lubricant in recommended quantity based on total degree of bend.</p>
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Incoming Tension: 0 kN      Pull COF: 0.11

Sag #	Straight Section Slope (°)	Slope Direction	Straight Section Length (m)	Straight Section COF	Tension (kN)	Bend Type	Bend Direction	Bend Radius (m)	Bend Angle (°)	Bend Length (m)	Bend COF	Tension (kN)	Sidewall Pressure (kN/m)
1	--	--	100.0	0.11	1.38	Horizontal	--	6.00	11.3	1.2	0.11	1.42	0.24
2	--	--	55.0	0.11	2.17	Horizontal	--	6.00	90.0	9.4	0.11	2.61	0.43
3	--	--	212.0	0.11	5.53	Horizontal	--	6.00	33.0	3.5	0.11	5.90	0.98
4	--	--	115.0	0.11	7.49	Horizontal	--	6.00	33.0	3.5	0.11	7.98	1.33
5	--	--	80.0	0.11	9.08	Horizontal	--	6.00	33.0	3.5	0.11	9.68	1.61
6	--	--	215.0	0.11	12.65	Horizontal	--	6.00	11.3	1.2	0.11	12.93	2.15
7	--	--	110.0	0.11	14.45	None	--	--	--	--	0.11	14.45	--

The Pull-Planner™ 4.0 Software uses the cable pulling (tension estimation) equations common in technical studies and included in a number of industry standards. The friction coefficients in the software database are laboratory measurements. A number of field factors can influence the effective coefficient of friction. Engineering judgement and experience should be used in the selection of appropriate friction coefficients for use in the calculations.



\* See previous pages for Polywater's range of Cable Lubricants

SCAN or CLICK to view Polywater's Cable Jacket Coefficient of Friction Test methods



Contact TEN for further information on how the Planner can help your cable pull work better.