

POWERGUARD[®]

HDPE smoothwall conduit approved for electrical installations



 **dura·line**
An Orbia business.

WHY CHOOSE POWERGUARD?

Dura-Line's PowerGuard® is your guarantee of quality, produced to the exacting standards of CSA C22.2 No 327 for electrical use.

- ▶ PowerGuard HDPE conduit is produced with a minimum cell classification of PPE334420C or PE334420E prime virgin resin
- ▶ PowerGuard is suitable for use with both low and high voltage cables as allowed by the standard
- ▶ PowerGuard HDPE conduit can be installed underground everywhere CSA certified PVC conduit can be installed
- ▶ PowerGuard comes standard with our patented SILICORE® ULF permanently lubricated interior lining and longitudinal inner ribs eliminating the need for additional lubricants
- ▶ PowerGuard is available with pre-installed cable, Cable-In-Conduit (CIC), eliminating the need to pull in cables after installation. Please ask us about this time-saving technology

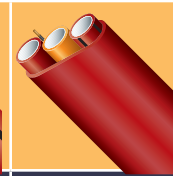
POWERGUARD FEATURES

- ▶ **Ductility:** HDPE conduit will better resist brittleness with age or cold temperatures
- ▶ **Flexibility:** HDPE conduit bends and flexes without breakage, even when the ground shifts or heaves
- ▶ **Temperature Versatility:** HDPE conduit can be installed and operated over a temperature range of -34°C to 82°C. Power conductors rated at 90°C and medium voltage cables rated at 105°C are permitted for use while ensuring that cable operating conditions do not result in conduit temperatures above the upper limit stated above
- ▶ **Continuous Length:** HDPE conduit can be wound onto reels several thousand meters long
- ▶ **Versatility:** Can be installed using multiple methods

POWERGUARD BENEFITS

- ▶ Will not exhibit the cracking or breakage associated with PVC conduits
- ▶ Can be installed at a lower temperature than PVC conduit
- ▶ Does not require manufactured bends - allows the pipe to be navigated around unexpected obstructions in the ground and withstand ground shifts.
- ▶ Allows the use of power cables in long, continuous runs
- ▶ Long continuous runs virtually eliminate the need for couplers and cement
- ▶ Ideal for installation into existing main pathways (conduit pulling, overrides, sliplining)

POWERGUARD FAMILY OF PRODUCTS



FEATURES	POWERGUARD	POWERGUARD PLUS	POWERGUARD HYBRID
Made in Canada	•	•	•
SILICORE® ULF Lining	•	•	•
Flexible CSA-Listed HDPE Resin Reduces Sweeps and Bends	•	•	•
Open Trench, Plowing and Horizontal Directional Drilling	•	•	•
Installation in Cold Climates	•	•	•
Long-Term Protection from Shifting Ground, Rock, and Root Impingement	•	•	•
Available with Pre-Installed Tape from 500 lb. – 6000 lb. Tensile Strength	•	•	•
Suitable for use with Low and Medium Voltage Cables	•	•	•
Can be Installed Everywhere CSA-Certified PVC Conduit or Duct can be Installed Underground	•	•	•
Easily Adapts to Other Conduit Materials	•	•	•
Glue-less Coupling	•	•	•
Direct Bury or Concrete Encasement	•	•	•
Produced to the CSA Standards of C22.2 NO.327 for Electrical Applications	•	•	•
Open Trench	•	•	•
Plowing	•	•	•
Horizontal Directional Drilling	•	•	•
Smooth Outer Wall	•	•	•
Longitudinal Inner Ribs	•	•	•
Available with Pre-Installed 20 awg. Insulated Tracer Wire	•	•	•
Multiple Pathways for Electric and Fibre		•	•
Available in 16mm (1/2") to 325mm (12"). Comes standard in long continuous lengths on reels (for 103mm (4") and below) 129mm (5") - 325mm (12") is available in trade length sticks 3.048m (10'), 6.096m (20')	•		
Available in 3-Way Configuration of 27mm (1") SCH 40 HDPE Conduit Bundled with a Polyethylene Over Sheath		•	
Available in 3-Way Configuration of one 53mm (2") SCH 40 HDPE Conduit with two 18/14mm MicroDucts.			•

POWERGUARD FEATURES

Empty or with Pull Tape

Standard SILICORE ULF lining
(see next page)

Available in 1/2" – 12"

Pre-installed Cable Option
(see next page)

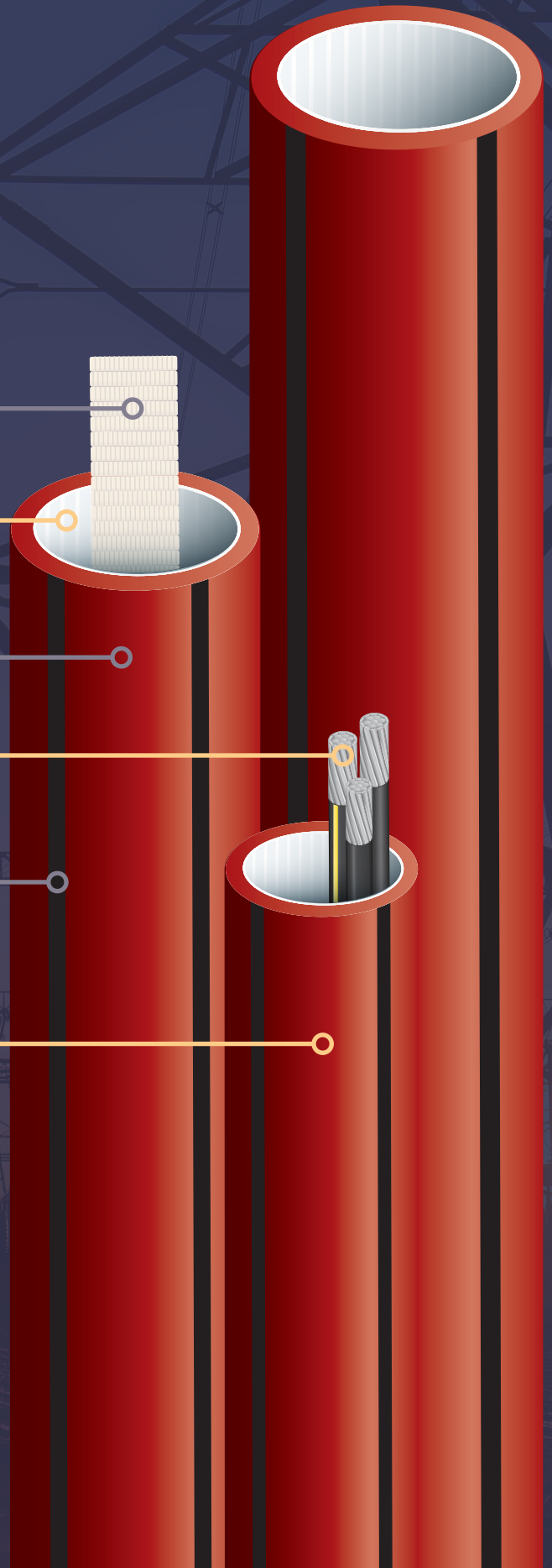
Standard configuration:
Red with 4 Black Stripes
SILICORE ULF + Ribs

CSA Certified

Packaging:

Reels: Sizes 1/2" - 4"

Straight Lengths
10' (3m), 20' (6.1m)
Sizes 5" - 12"



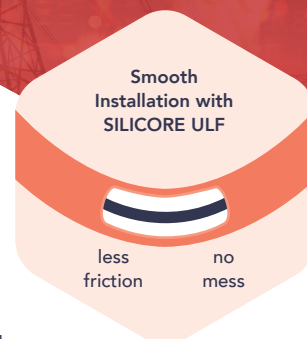
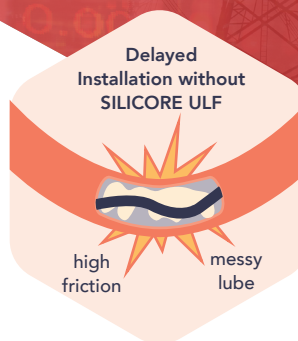
WHAT IS SILICORE® ULF?

Where does friction occur?

Cable installation difficulty is directly proportional to the route of the conduit.

Straight paths are easiest; however, real-life installations rarely have straight paths. Bends and turns in the pathways cause friction spots along the route. Lubricants were developed to help overcome the friction challenges. Over time, lubricants dissipate, causing direct contact between the cable and the conduit. That contact not only makes the install difficult, but can damage the cable. In ducts with SILICORE ULF, the cable remains in contact with the slippery lining, reducing the friction. No burn through. Easier and longer cable pulls!

SILICORE ULF is co-extruded inside the HDPE wall creating a slick, permanent, interior lining. With a coefficient of friction 60% lower than standard HDPE conduit without the aid of wet lubricants, SILICORE ULF exhibits no loss in performance over time or in extreme temperature conditions.



SILICORE ULF FEATURES

- ▶ No lubricant required
- ▶ Permanent: remains unchanged for life of conduit
- ▶ Lowest co-efficient of friction
- ▶ No lubricant clean-up
- ▶ No performance loss in all temperature conditions
- ▶ No special lubes required for cold weather
- ▶ Identifiable by its contrasting white colour

CABLE-IN-CONDUIT (CIC)

Dura-Line has the technology to manufacture the conduit with the cable pre-installed.

We take the cable and extrude the conduit directly over the communication or electrical cable. Tight control of the conduit temperature during the manufacturing process is essential to ensure that the conduit does not stick to the cable as it cools.

BENEFITS OF CIC

- ▶ Continuous length with pre-installed cables on reels for easy deployment
- ▶ Protects buried cables from harsh environments, digging mishaps, and rodent and animal intrusion or damage
- ▶ Saves the time, labour, and costs associated with pulling and jetting cables
- ▶ Pathways for future cable installations, replacements, and repairs
- ▶ Configurations to meet any needs for today while future-proofing for tomorrow



ORDER REFERENCE

POWERGUARD/REELS

	DUCT SIZE	DIMENSION RATIO	LENGTH/REEL (M)	REEL SIZE	DURA-LINE PART #
WOOD	16mm (1/2")	DR-13.5	914	44" X 36"	10014500
	21mm (3/4")	DR-13.5	1,000	44" X 36"	10014084
STEEL	27mm (1")	DR-13.5	900	54" X 45"	10014085
	35mm (1 1/4")	DR-13.5	1,000	66" X 48"	10014086
	41mm (1 1/2")	DR-13.5	875	72" X 48"	10014087
	53mm (2")	SCH-40	1,000	96" X 45"	10014089
	63.5mm (2 1/2")	SCH-40	610	96" X 45"	10014090
	78mm (3")	SCH-40	396	96" X 48"	10014091
	103mm (4")	DR-13.5	229	96" X 48"	10014092

POWERGUARD® NOTES

Approved to the CSA C22.2#327: "HDPE Conduit, Conductors in Conduit, and Fittings."

This standard applies to High Density Polyethylene (HDPE) conduit with conductors (C.I.C.) and fittings, or direct burial or encasement in concrete or masonry in ordinary (non hazardous) locations.

For each size and type of conduit, the average coefficient of static friction shall not exceed 0.20 when determined by using the test method specified in clause 6.2 of CSA C22.2 No. 211.1.

Field bends can be made without the use of external heaters, blankets or tools. Table 8 of CSA C22.2#327:2018 specifies the following bending radius by conduit diameter:

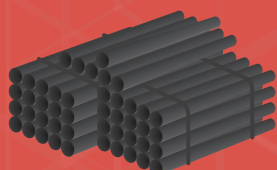
12-1258 Field bends

Where HDPE conduit or HDPE conductors-in-conduit are bent during installation, the radius of the curve shall be

- a) not less than that specified by the HDPE conduit manufacturer; or
- b) if not specified, at least 12 times the external diameter of the HDPE conduit or HDPE conductors in conduit.

1 meter = 3.28084 feet

1,000M: PVC STICKS VS POWERGUARD

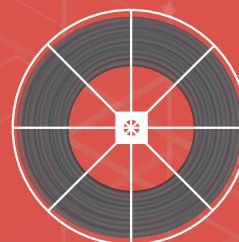


2 1/3 CRATES
OF 2" PVC STICK PIPE



140
COUPLERS

VS



ONE REEL
OF 2" POWERGUARD

= 1,000M

= 1,000M

ACCESSORIES

Dura-Line offers a complete line of couplers, tools, hardware, Bull-Line Pull Tapes, lubricants, chemicals, and accessories designed to make your cable installation highly successful.

Highlighted below are a few of our most popular products. Please visit our website or contact your sales representative for more details.



BULL-LINE™ PULL TAPE

- ▶ Economical, pre-lubricated tape reduces friction induced heat associated with pulling heavy cables into conduit
- ▶ Lowest burn-through resistance, easily jetted into conduit
- ▶ Accurate sequential foot or meter markings
- ▶ Locatable tracer wire option
- ▶ Available on reels in a wide variety of lengths
- ▶ Available in a plastic dispenser pail containing 6,500' (1,981m) of line, rated at 210 lbs. breaking strength



HYDRA-SEAL SEALANTS

- ▶ Designed and developed with high-performance properties, yet safe and user-friendly. Available with a variety of complimentary accessories.



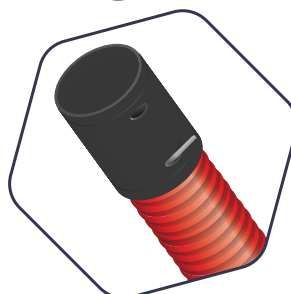
LUBRICANTS

- ▶ Formulated to meet specific requirements, our lubricants are available in a wide range of polymer and silicone-modified formulations in gel, creamy gel, or pourable forms. We offer a lubricant to match the type and weight of cable to be placed. Our lubricants are UL listed and available in summer and winter grades.



SHUR-LOCK™ II COUPLER

- ▶ Plastic coupler specialized for use by electrical installers requiring CSA/ETL/UL listing, designed for coupling HDPE & PVC conduit.
- ▶ Features stainless steel band clamps (hand tightened using a 5/16" nut driver) and locking ring
- ▶ Pre-lubricated O-ring forms an air-tight seal to withstand 125 psi



POWERGUARD FLEX ADAPTERS AND COUPLERS

- ▶ PowerGuard Flex Coupler Kit joins PowerGuard Flex to PowerGuard Flex
- ▶ PowerGuard Flex Adapter Kit joins PowerGuard Flex to HDPE, PVC, FRE, and TGS
- ▶ PowerGuard Flex Coupler Kits include an O-ring gasket creating an airtight and watertight seal
- ▶ Keylock strips secure the connection, no glue required



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