

#### BELOW GROUND

FRE Composites manufactures a complete line of Below Ground Fiberglass Conduit products designed for either Direct Burial (DB) or Encased Burial (EB) applications as described in the National Electrical Code (NEC) and Canadian Electrical Code (CEC). UL Listed and CSA Certified, FRE® Below Ground Conduit system products are used the world over by power and telecommunications utilities as well as commercial and industrial markets as an economical and long-lasting alternative to PVC, HDPE and other types of rigid conduit.

#### ABOVE GROUND

FRE Composites' Above Ground Fiberglass Conduit system consists of conduits, fittings, conduit bodies and adaptors. It is designed to provide power, telecommunications and transit utilities as well as commercial and industrial markets with a reliable, easily installed carrier for exposed applications. UL Listed and CSA Certified, this system is designed for use above ground as described in the National Electrical Code (NEC) for non-hazardous locations and Canadian Electrical Code (CEC) Part 1. FRE® Above Ground Conduit system is a better, safer, more economical, and longer-lasting than PVC, Coated Steel and Rigid Galvanized Steel conduit.

#### HAZGUARD™

FRE Composites' Bullet Resistant rigid nonmetallic fiberglass conduit system products were originally engineered to protect fiber optic cables. Ballistically tested under laboratory conditions, this system is proven to resist damage from small caliber, low velocity projectiles. Today, utilities, D.O.T.s, airports and telecommunication providers use our Bullet Resistant conduit system products to protect all types of cable networks and distribution systems worldwide. All FRE® Bullet Resistant conduit system products are designed to meet high mechanical requirements and advanced product longevity.

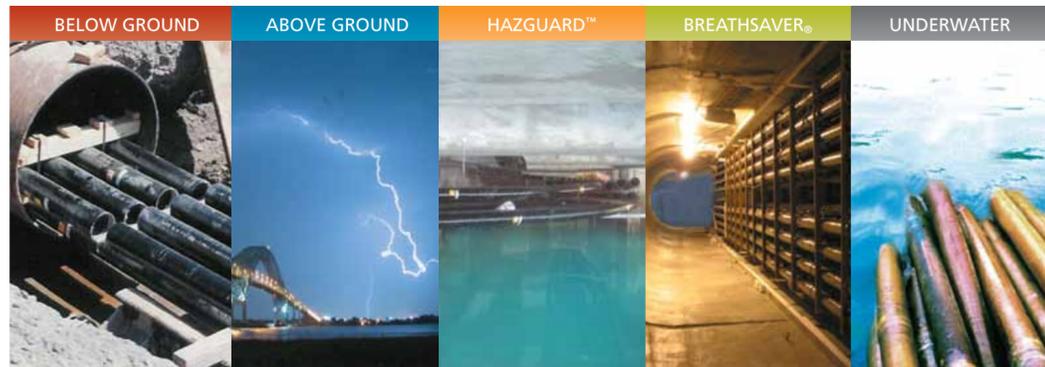
#### BREATHSAVER®

##### LOW SMOKE/HIGH TEMPERATURE

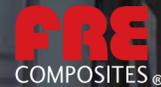
FRE Composites' BreathSaver® Fiberglass Conduit system consists of conduits, elbows, fittings, and adaptors. Using a phenolic resin based matrix, it is designed to provide transit, utilities, and industry with a nonmetallic corrosion resistant, flame resistant, low-smoke, non-toxic conduit system that is suitable for high temperature installations. The FRE® BreathSaver® Conduit system products meets the most stringent industry requirements for safety. FRE Composites is the only manufacturer offering this innovative system.

#### UNDERWATER

FRE Composites' Underwater Conduit system is a low priced alternative to expensive aerial and submarine cable. FRE® underwater Conduit system will conform to crossing trench floors and can accommodate irregular trench profiles. Although flexible, FRE® Underwater duct can take the pressure of depths to one hundred feet (100 ft/30 m). FRE® underwater duct crossings don't detract from the natural beauty of marine areas, FRE® duct protects your cables, and unlike expensive aerial systems FRE® duct isn't damaged by ice and wind. FRE® duct's secure joint couplings, with the use of Bullnose Pulling Eyes, permit continuous lengths of duct to be pulled at one time, eliminating expensive coffer dams.



FIRST IN THE FIELD



75 WALES STREET, ST-ANDRE-D'ARGENTEUIL (QUEBEC) CANADA J0V 1X0  
TELEPHONE: +1 450 537-3311 • FAX: +1 450 537-3415  
TOLL FREE: 888 849-9909



60 GREENHORN DRIVE, PUEBLO CO 81004  
TELEPHONE: +719-565-3311 • FAX: +719-564-3415  
TOLL FREE: 888 849-9909

WWW.FRECOMPOSITES.COM

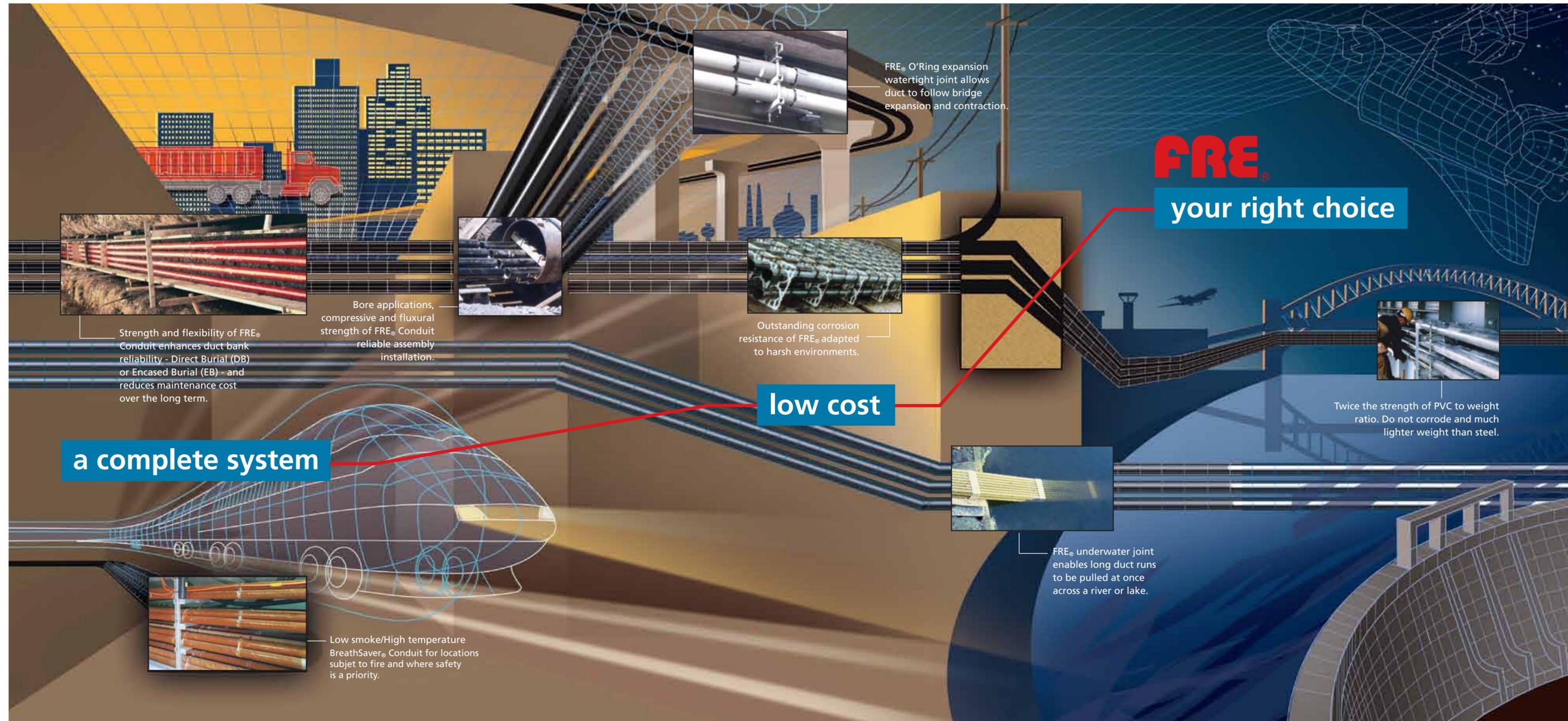
# FRE

COMPOSITES®

FIBERGLASS PRODUCTS  
SINCE 1958

Printed in Canada

FIRST IN THE FIELD



**a complete system**

Strength and flexibility of FRE<sup>®</sup> Conduit enhances duct bank reliability - Direct Burial (DB) or Encased Burial (EB) - and reduces maintenance cost over the long term.

Bore applications, compressive and flexural strength of FRE<sup>®</sup> Conduit reliable assembly installation.

Outstanding corrosion resistance of FRE<sup>®</sup> adapted to harsh environments.

**low cost**

**FRE<sup>®</sup>**  
**your right choice**

FRE<sup>®</sup> O'Ring expansion watertight joint allows duct to follow bridge expansion and contraction.

Twice the strength of PVC to weight ratio. Do not corrode and much lighter weight than steel.

FRE<sup>®</sup> underwater joint enables long duct runs to be pulled at once across a river or lake.

Low smoke/High temperature BreathSaver<sup>®</sup> Conduit for locations subject to fire and where safety is a priority.

**FRE<sup>®</sup> Conduit is a complete system**

The Fiberglass Reinforced Epoxy system consists of conduit, fittings and adaptors. It is designed to provide utilities and industry with a reliable, easily installed carrier for below ground, above ground and underwater electrical and telecommunication cables.

FRE<sup>®</sup> conduit is available in standard diameter sizes from 3/4" through 8" (21 through 203 mm) in lengths of 9.84 ft (3 m) and 19.68 ft (6 m). Each length of FRE<sup>®</sup> conduit contains an integral inside tapered bell end for push-fit watertight assembly.

A complete range of general purpose fittings (elbows, adaptors, caps) is available to interconnect the conduit. The fittings can be used with a wide range of conduit systems. Special purpose fittings (O'Ring expansion joint, wobble coupling) are also offered for use in conjunction with bridge installations. A selection of adaptors enables connection of FRE<sup>®</sup> conduit to threaded steel, PVC, asbestos cement and bituminous fiber systems. Where water is a problem, adhesive and splice kits are available.

**FRE<sup>®</sup> Conduit is a low cost system**

Some very significant cost savings result from the unique characteristics of FRE<sup>®</sup> conduit. For example, in most underground applications, the strength and chemical resistance characteristics of FRE<sup>®</sup> conduit enables Direct Burial (DB) of the system rather than Encasement Burial (EB), with obvious savings. In bridge applications, the light weight of FRE<sup>®</sup> conduit drastically reduces the cost of support hardware, simplifies installation, and lowers weight charges to the utility. In underwater applications, the strength and flexibility of FRE<sup>®</sup> underwater conduit and the unique, patented coupling permit continuous lengths of conduit to be pulled across a river at one time, thereby eliminating the costs of submarine cables or coffer dams. Again in underground applications, the low coefficient of friction of FRE<sup>®</sup> conduit permits longer cable lengths to be pulled through the conduit, thereby reducing the number of costly manholes or conduits/junction boxes required in a system, with obvious savings. The longer cable lengths also mean fewer joints (cable splices).

These and other unique characteristics of FRE<sup>®</sup> conduit result in additional savings during the actual installation of conduit and in reduced costs for maintenance of the system over the long term.

**FRE<sup>®</sup> Conduit is your right choice for best value!**

**Low Installation Costs** - Because FRE<sup>®</sup> conduit is very light in weight, one workman can easily carry 100 ft (30 m) of it to the work area. At the work area, installation proceeds at a fast pace because FRE<sup>®</sup> conduit is easy to handle. No special skills are required because it's so easy to install. Just mate a spigot end into a bell end, drive it in and a strong watertight joint is made. No time consuming heatwelding, solvent cementing, gluing or tapering of ends is required. Installation can be carried out year round because FRE<sup>®</sup> conduit does not become brittle at low temperatures as it does not crack or shatter.

Many utilities have found that conduit installation costs can run up to more than 50% of the total system cost. By substantially reducing the labor involved in installation, FRE<sup>®</sup> conduit systems result in lower total system cost.

**Low Maintenance Costs** - Maintenance costs for FRE<sup>®</sup> conduit systems are low for some quite basic reasons. FRE<sup>®</sup> conduit has great strength. No other conduit can compare in impact strength and few compare in compressive strength. Thus, FRE<sup>®</sup> conduit system is much less susceptible to mechanical damage than other weaker systems. In addition, it is highly resistant to creep. This means that spare conduit installed for future use will still be serviceable after several years.

FRE<sup>®</sup> conduit is rotproof and corrosion and chemical resistant. Thus and FRE<sup>®</sup> system is much less susceptible to damage from aging or chemical action than other, less inert systems.

FRE<sup>®</sup> conduit is a thermoset material and has a very high temperature rating compared to conduit made of thermoplastic material such as PVC. It will not melt, even when its temperature rating is exceeded. Therefore, FRE<sup>®</sup> conduit is much less likely to become deformed as a result of heat generated by short term electrical overloads. This means that when wiring in a FRE<sup>®</sup> conduit system does require maintenance, the cables can easily be removed, repaired and replaced at very low cost.

[www.frecomposites.com](http://www.frecomposites.com)