

FIBERGLASS PHENOLIC ELECTRICAL CONDUIT OFFERS A SAFE SOLUTION IN TORONTO TRANSIT TUNNELS

The Toronto Transit Commission (TTC) provides public transit services to approximately 1.7 million daily commuters. It operates bus, subway, streetcar, and paratransit services in Toronto, Peel Region, and York Region in Southern Ontario, Canada.

TTC was formed in 1921. It is the oldest and largest of the urban transit service providers in the Greater Toronto Area, with numerous connections to systems serving its surrounding municipalities.

Challenge – Aging Infrastructure and New Lines

Like other transit systems of the same vintage, TTC had some aging infrastructure in place. Previous galvanized electrical conduit created a safety concern in the event of an emergency situation like a fire, where the metals would create a brass alloy and render cables useless.

Additionally, the TTC was expanding. They had opened some new stations, so the organization wanted to take advantage of the latest innovations for safety.

A Safe Solution for Tunnels

TTC project stakeholders researched the safest options in fire-proof electrical conduit. They discovered [Champion Fiberglass® Flame Shield](#) phenolic electrical conduit provided a superior level of safety required for the transit system. That is, in a transit fire situation, the Champion Fiberglass phenolic conduit provides a two-hour fire rating when used in conjunction with the fire-rated life safety circuit (fire sprinkler, ventilation & lighting) cables.

Further, the conduit meets the following safety standards and listings: NFPA 130 and NFPA 502, ASTM E136, UL 2196 tested and UL 2515-A Listed for Phenolic XW Conduit.

On top of the safety benefits, fiberglass phenolic conduit comes in at less weight than steel. Plus, labor takes less time per the NECA Manual of Labor Units.

As for installation, the TTC tunnels performed a jack and bore installation technique utilizing Champion Fiberglass epoxy conduit. The mechanical strength of Champion Fiberglass epoxy conduit allows it to be utilized for this type of specialized complex installation.

Another advantage that Champion Fiberglass conduit has over steel electrical conduit is that it provides some installation flexibility. Heavy steel conduit is very rigid. Champion Fiberglass phenolic and epoxy conduits offer enough flexibility to adapt to minor tunnel elevational and directional changes while still providing mechanical protection.

Results – Performance Electrical Conduit

For the TTC, Champion Fiberglass Flame Shield phenolic offered a safe electrical conduit pipe solution in established and new tunnels for Toronto area commuters. With low smoke characteristics and a 2 hour temperature rating, Champion Fiberglass phenolic conduit helps insulate cables for reliable fire protection in tunnels. Finally, the conduit's light weight yet strength aided jack and bore installation.



QUICK FACTS

PROJECT NAME

Toronto Transit Commission

APPLICATION

Infrastructure/Transportation/
Tunnels

CHAMPION FIBERGLASS PRODUCT(S)

[Champion Flame Shieldt®](#)

- > Champion Fiberglass Flame Shield phenolic conduit offered 2-hour fire-rated safe conduit.
- > Flame Shield replaced aging conduit that was not up to the latest safety standards
- > Flame Shield offered less weight than previous GRC conduit which helped facilitate a buried installation that included a jack and bore method

View [installation videos](#) for how-tos about assembling phenolic conduit sections.

Or get in touch with a rep.

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