INDUSTRIAL CONSTRUCTION TREND REPORT

# ELECTRICAL CONDUIT IN BRIDGE PROJECTS

How Fiberglass Conduit Helps Electrical Engineers & Contractors Construct Bridges Safely, Efficiently and Successfully

Learn how bridge projects benefit from fiberglass conduit.

CHAMPION FIBERGLASS®

# TREND ALERT: FIBERGLASS ELECTRICAL CONDUIT CONTRIBUTES TO SUCCESSFUL BRIDGE PROJECTS

After 40+ years and thousands of bridge projects throughout the U.S. and Canada, fiberglass conduit is today's dominant material for under bridge installations. From the Golden Gate Bridge to international border bridges, fiberglass conduit is the preferred material for its superior corrosion resistance, light weight compared to other conduit materials and its low sag at elevated temperatures in the summer.

In addition, based on NECA standards, fiberglass conduit is faster to install and more portable in the field, which helps make under bridge installation seamless.

Champion Fiberglass conduit is manufactured to the highest standards in our triple ISO certified digital facility in Spring, Texas. Learn why project teams consistently choose fiberglass conduit to build bridges safely and more efficiently.

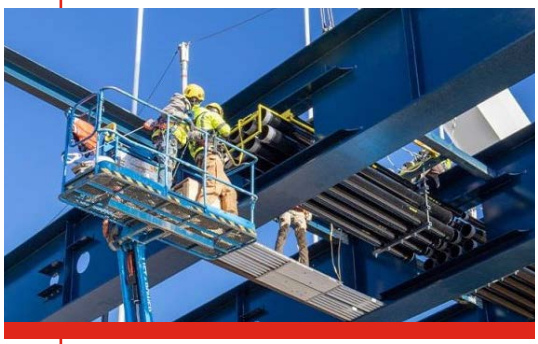
# WHY FIBERGLASS CONDUIT MAKES SENSE IN BRIDGE PROJECTS

Our conduit's extensive use in bridge projects has shown us the most important factors to consider to gain favorable outcomes. Champion Fiberglass® conduit has been used successfully for thousands of bridge projects in major cities and roadways, such as the Frederick Douglass Bridge in Washington, D.C., Pittsburgh's Andy Warhol Bridge and the Blue Water Bridge in Canada.

You can rely on our experienced team to provide a value-engineered solution that's proven safe and successful. Here's how the qualities of fiberglass conduit help electrical engineers and contractors construct bridges safely, efficiently and successfully:

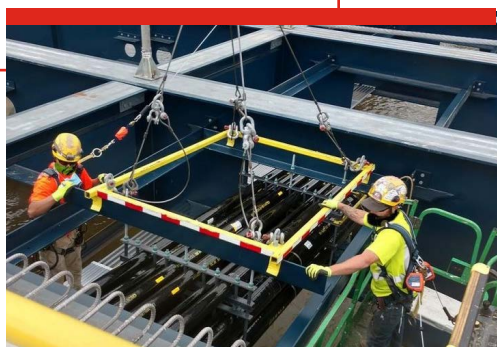
## LIGHTWEIGHT FIBERGLASS CONDUIT PROMOTES A SAFE, SMOOTH INSTALLATION

Conduit weight impacts not only shipping but installation and job safety. Lightweight conduit can help make many aspects of an installation, like moving, hoisting and installing conduit, easier. Consider the impact of conduit weight on a bridge project and the structural considerations that will be affected by the weight. Fiberglass conduit boasts the lightest weight compared to PVC SCH 40 and 80, galvanized rigid steel, PVC-coated steel and aluminum conduit. This makes for easy transportation to the site, safer and faster field mobilization and effortless installation. Additionally, fiberglass conduit adds minimal load to bridge platform structures.



## FIBERGLASS CONDUIT FACILITATES FASTER INSTALLATION

Consider any special installation concerns in your bridge project. Will the installation require equipment such as cranes? What are the conduit joining requirements and the cutting and bonding procedures for the conduit materials you've selected? With fiberglass conduit, ease of cutting, integral bell and gasket connections facilitate faster installation. Based on the NECA Manual of Labor Units, most sizes of fiberglass conduit install faster than PVC, galvanized rigid steel, PVC-coated steel and aluminum. Plus installation teams will benefit from a library of training videos and additional guidance for first time installers.



## CORROSION-RESISTANCE PROTECTS CONDUCTORS

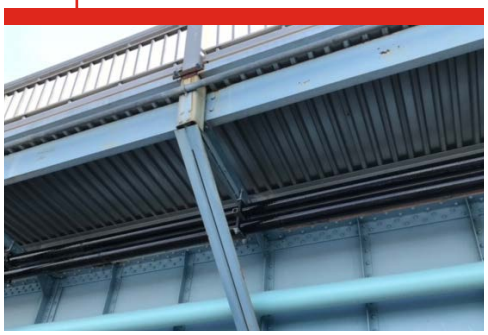
Roadways are subject to salt throughout the winter and oil and gas from motor vehicles. It can be a harsh environment. Superior corrosion resistance protects cable in bridge projects from the elements and chemicals that are common on the road. Ensure the materials you've selected protect cable and wires for years to come. Fiberglass conduit is corrosion resistant to many chemicals and withstands heat and cold with a temperature range of -60° to 250° F.

## UV STABILITY PROMOTES LONGEVITY

Unstable outdoor environments are a consideration with bridge projects. Champion Fiberglass conduit provides corrosion and UV resistant conduit for electrical cabling, which helps prevent premature deterioration. Champion Fiberglass conduit is strong and UV resistant so that it will not break down over time. This durability provides an additional bonus of service life longevity.

## SAVE TIME AND MONEY IN INSTALLATION WITH EXTENDED SUPPORT SPANS

Champion Fiberglass is the only fiberglass (RTRC) manufacturer to offer extended support spacing on a full complement of conduit sizes. This means projects require fewer struts and hangers – and you save on costs.

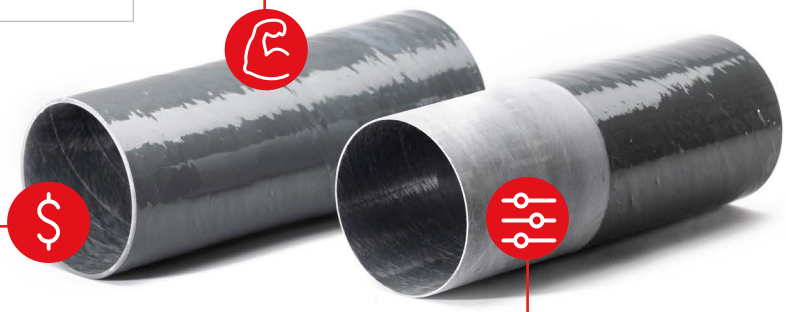


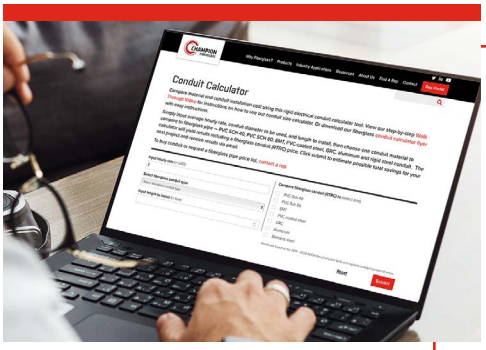
## CHAMPION FIBERGLASS OFFERS AN EASY-TO-INSTALL, CORROSION-RESISTANT HANGER SYSTEM

For bridge projects, hanger systems are a key component. In addition to conduit, Champion Fiberglass manufactures a complementary system of non-corrosive bridge hangers to complete your bridge project. These fiberglass conduit hangers are available in two standard configurations: the popular Intermediate Hanger and our Anchor Hanger (an Intermediate Hanger with side bracing). Champion Hangers® also come in alternate configurations so you always have the right fit installing conduit for bridge-related projects.

## IMPACT RESISTANCE PROVIDES ENHANCED DURABILITY

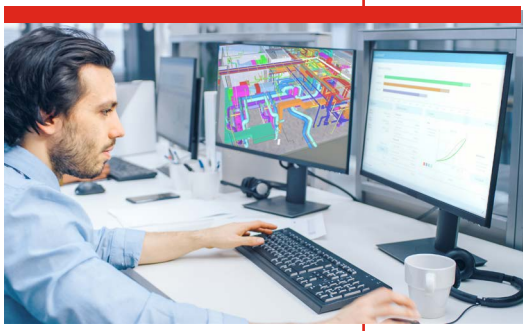
As bridge projects are subject to cars and trains, impact resistance remains a critical factor. Electrical conduit for bridge projects must be able to withstand accidental impact from debris caused by moving vehicles including cars, trucks, trains, even boats. Not many conduit types can boast that they are lightweight and durable to withstand impact, but Champion Fiberglass XW conduit can.






## COMPETITIVE PRICING BENEFITS PROJECT BOTTOM LINE

Because of its light weight, easy installation, and lower upfront costs, fiberglass conduit typically translates into significant cost savings. Some sizes of fiberglass conduit offer a whopping 80% savings when compared to PVC coated steel conduit. To see customized cost comparisons, visit our electrical conduit calculator, where you can input job details and get a comparative estimate for various conduit types.



## GET CUSTOMIZATION AND VALUE-ENGINEERED SOLUTIONS FROM AN EXPERIENCED TEAM

Our team handles frequent custom requests. Champion Fiberglass accommodates custom conduit color requests as well as incorporating added UV protection as another layer of defense from the elements. We've also executed on special handling and packing requests to accommodate unique customer and project requirements.

# CHAMPION FIBERGLASS® HELPS MAKE A COMPLEX INSTALLATION SEAMLESS, SAFE AND ON-SCHEDULE

The Frederick Douglass Memorial Bridge in Washington, D.C. is a new through arch bridge that carries South Capitol Street over the Anacostia River. The bridge is 1,472 feet long and serves to increase pedestrian and vehicular safety, improve multimodal transportation options, increase community access and support economic development on both sides of the Anacostia River.

## CHALLENGE

Recent construction of the bridge involved the installation of two under-bridge duct banks that would provide a protected pathway for buried electrical and data cables. When working at such great heights, installation requires efficiency which helps minimize the high cost of necessary equipment. And lightweight products help to keep installers safe throughout the project.

The installation of the duct banks was challenging with customized requests and specific timelines. Accurate take-offs were critical, as was the ability to handle the specific logistics for the order size, lead times, and customization like preassembly. Due to the complexity of the installation, the contractor needed a reliable partner that could not only customize the product and delivery but also stay on schedule.

## SOLUTION

Not only did this contractor need a lightweight electrical conduit to facilitate a safe installation, they also required a partner experienced in providing customized solutions. This project was loaded with special requests and specifics such as preassembly of duct banks and detailed shipping with tight deadlines. Champion Fiberglass® went above and beyond to coordinate the complex installation by customizing the preassembled duct banks with special packaging. Specifically, customization included pre-drilled and pre-assembled ducts and hangers, expansion joints built into the duct packages, and specialized duct crating and packaging. Finally, shipping was expedited for on-time delivery.

## RESULTS

Champion Fiberglass met specific project assembly and shipping requirements for the contractor and hit deadlines without a hitch. By using Champion Fiberglass lightweight conduit which facilitated an easier installation, the risk to the installers was substantially minimized. The seamless installation led directly to savings without losing quality or sustainability. In addition to hitting installation timelines, the contractor and customer experienced peace of mind knowing the conduit materials are corrosion-, UV-, and impact-resistant and temperature tolerant for longevity in the field.

The strength and durability of Champion Fiberglass conduit and customization solutions afforded by 30+ years of project expertise helped this bridge project reach a successful conclusion.

## VALUE ENGINEERING GUIDES COMPLEX BRIDGE PROJECT

For this project, lightweight fiberglass conduit saved material costs. And in a special collaboration with the contractor, Champion Fiberglass offered pre-assembly, custom packaging and precise delivery meeting project timelines with specifications that made installation easier and successful.

## QUICK FACTS

**PROJECT NAME**
Frederick Douglass Memorial Bridge
Washington, D.C.

**APPLICATION**
Transportation

**CHAMPION FIBERGLASS PRODUCT(S)**
Champion Duct®

**PROJECT HIGHLIGHTS**

- Challenging, yet safe and seamless installation with specific preassembly and delivery requests of two under-bridge duct banks provides a protected pathway for buried electrical and data cables
- Customized delivery of conduit helped the project stay on schedule
- Overall project results: lower materials and installation costs plus shorter lead times

# CHOOSE THE RIGHT CONDUIT FOR YOUR BRIDGE JOB BY TAKING THE NEXT STEPS FOR PROJECT SUCCESS

## GET AN ESTIMATE

See how fiberglass conduit compares in price to PVC SCH 40, PVC SCH 80, PVC-coated steel, GRC, EMT and aluminum with your project specs.

GET AN ESTIMATE

## DOWNLOAD BIM/REVIT MODELS

BIM/Revit models help promote efficiency among all teams while collaborating on a project.

GAIN ACCESS

## QUESTIONS?

Got specific questions about how our fiberglass conduit can benefit your projects?

CONTACT US

## READY TO MOVE FORWARD ON A PROJECT?

Our manufacturer's rep network offers experience in helping engineers and contractors solve complex project challenges.

FIND A REP