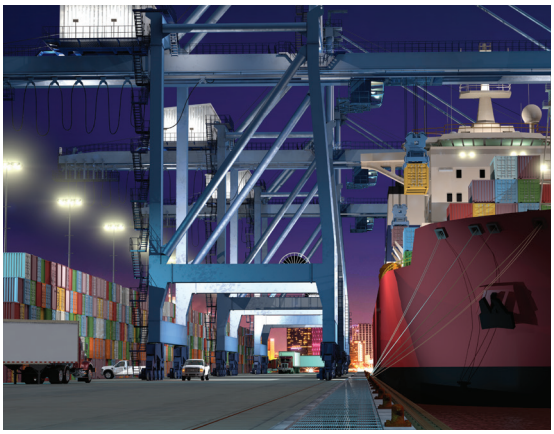
CHAMPION FIBERGLASS®

THE PVC SHORTAGE GUIDE

WHAT'S GOING ON WITH PVC ELECTRICAL CONDUIT?

Everyone in the construction industry is well aware of the current worldwide PVC shortage and its ramifications.

It began with the pandemic as some businesses closed or slowed operations while employees quarantined and isolated. Then, an active hurricane season hit Louisiana particularly hard and forced chemical plants to shut down.



If that was not enough, Winter Storm Uri forced chemical plants making resin base materials for PVC to go offline, slowing production and adding another wrinkle to the PVC shortage already in place.

In fact, Winter Storm Uri could be responsible for the loss of 5 billion pounds or more of resin production, estimates ThePlasticsExchange.com.

With strong demand and decreased production, prices of PVC products like SCH 40 and SCH 80 electrical conduit used in construction have soared and delivery times greatly increased. *The Wall Street Journal* reports that analysts have said it could be months more before all petrochemical plants along the Texas Gulf Coast are fully back in operation.

But there's a solution. Projects don't have to suffer through long delays and skyrocketing prices, exceeding deadlines and budgets. You don't have to wait for PVC electrical conduit.

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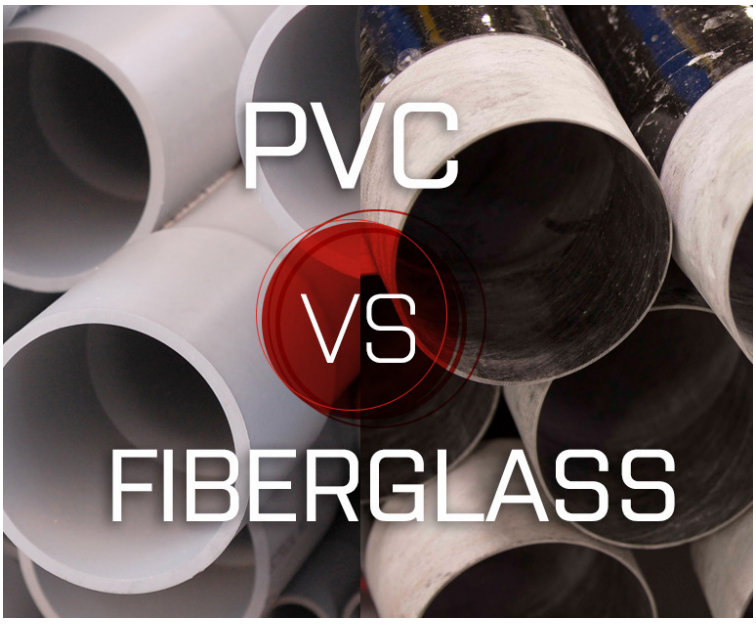


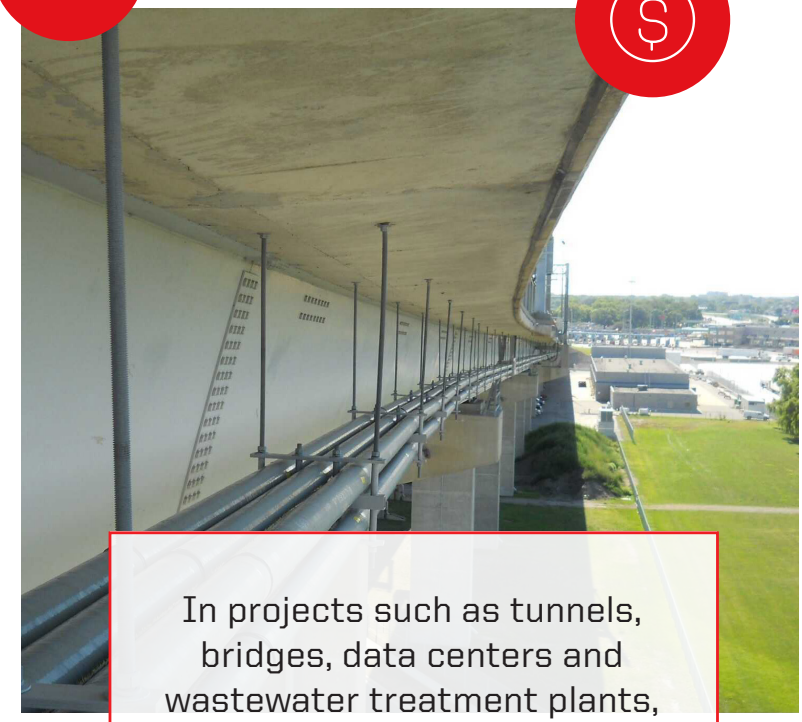
The Solution is Champion Fiberglass® conduit.

Unaffected by the PVC shortage, Champion Fiberglass® conduit is available with shorter lead times and competitive pricing.

In many cases, fiberglass conduit (RTRC) can be used in place of PVC conduit with great success. Across many applications, projects using fiberglass conduit benefit from:

Light Weight

Lower Installation Costs



In projects such as tunnels, bridges, data centers and wastewater treatment plants, Champion Fiberglass conduit can replace PVC conduit.

Superior Compression and Impact Strength

Learn more in this eGuide

- Get questions answered in our most popular fiberglass vs. PVC FAQs
- See a head-to-head product comparison between PVC SCH 40, PVC SCH 80 and PVC-coated steel
- Find engineering specs and details in data sheets
- See how easy installation can be
- Read success stories where fiberglass conduit was used instead of PVC
- Learn about BIM/ Revit models for project planning and calculators to get project estimates fast

POPULAR PVC RELATED FAQs

Got questions about fiberglass electrical conduit? Get answers to our more popular PVC electrical conduit related questions – about applications, weight and installation – and how fiberglass conduit can be used instead of PVC electrical conduit.

Used Across Many Industries and Applications

Q. In what industries can fiberglass conduit replace PVC conduit?

A. Fiberglass conduit can replace PVC conduit in a variety of applications including commercial, industrial, construction, bridges, tunnels, data centers, utilities, and mining. Its corrosion resistance to many chemicals makes it ideal for wastewater treatment, chemical plants, and port authority/coastal environments. Not only is it lightweight for faster installation, it is also strong and durable with superior impact resistance.

The Weight Issue

Q. How does fiberglass conduit compare in weight to PVC conduit?

A. One hundred feet of 4" SW fiberglass (RTRC) conduit weighs 72 pounds, significantly lighter than comparable PVC SCH 40 at 231 lbs. Because of its lightweight nature, fiberglass conduit does not add as much weight to supporting structures as other conduit systems.

The Scoop on Easy Installation

Q. Who fares better in terms of installation rates – PVC or fiberglass conduit?

A. The NECA Manual of Labor Rates states that to install a 100-foot length of 6" diameter conduit it takes just 9 hours for fiberglass conduit. For PVC SCH 40, it takes 24 hours. This means fiberglass conduit installs faster, in one-third the time as PVC SCH 40.

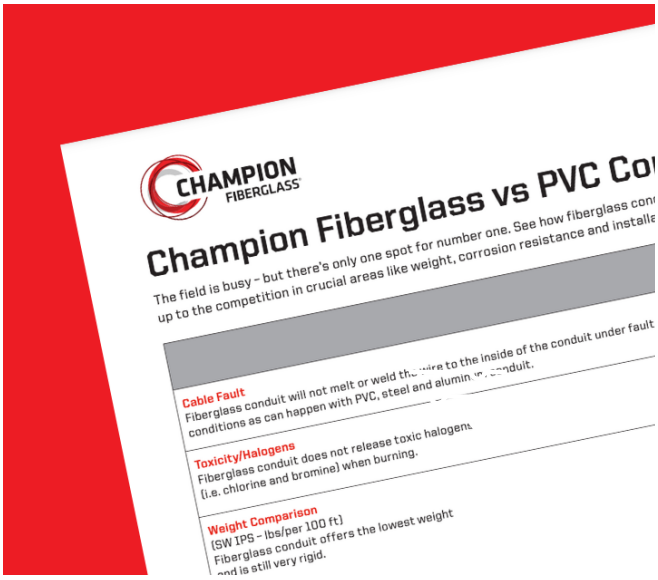
Read more FAQs here.

SEE A HEAD-TO-HEAD ELECTRICAL CONDUIT PRODUCT COMPARISON

To illustrate how PVC and fiberglass conduit systems compare, we've detailed product features across fiberglass, PVC SCH 40, PVC SCH 80 and PVC-coated steel in an easy-to-read chart format.

See head-to-head how they stack up regarding installation times, halogen release, cable fault, UV resistance and more.

Download the full chart **here.**



9 Reasons Fiberglass Conduit Performs Better than PVC

1. Competitive pricing
2. Shorter lead times
3. Light weight
4. Lower installation costs
5. Superior compression and impact strength
6. Lower cable coefficient of friction
7. No elbow burn-through
8. Broader temperature range
9. Safety – no toxic halogens are released

DATA AND SPEC SHEETS

Find the right engineering data and information details for your project's application.

If you are unfamiliar with fiberglass conduit, allow us to help guide you in your search for details. For engineers, contractors and project managers, we offer helpful data and specs to determine whether fiberglass conduit satisfies your project requirements.

Here's a sampling of technical and engineering specs and information you will find:

- Specifications for Fiberglass Conduit Below Ground
- Specifications for Fiberglass Conduit Above Ground

Both of these documents offer a wide range of information such as specific dimensions and wall thickness of conduit and electrical characteristics like dielectric strength and surface resistivity. Mechanical characteristics include tensile and compressive strength. Additionally, there are impact resistance weights by conduit size and toxicity information. You will find even more data including environmental and manufacturing information and fittings and accessories details.

Chemical Resistance Guide, where you can view results of testing by specific chemical

Safety Data Sheets for standards, guidelines and recommendations

Engineering Requirements for UL and factory ISO information

Champion Duct® catalog

For engineers, contractors and project managers, we offer helpful data and specs to determine whether fiberglass conduit satisfies your project requirements.

Installation Information

Discover how easy (and cost-efficient) installation can be with fiberglass conduit.

Projects using fiberglass conduit install faster than most other conduit types. Our conduit's light weight contributes to a streamlined process that makes installation simple and easy-to-follow.

Faster installation saves not only time but money. In fact, the NECA Labor Rates state that to install a 100-foot length of 6" diameter conduit takes just 9 hours for fiberglass conduit, compared to 24 hours for PVC SCH 40, 29 hours for PVC SCH 80, and 60 hours for PVC-coated steel. Faster installation means safer, more cost-effective projects.

Get all the installation details – guidelines, how-to videos and installation FAQs – in our online installation guide.

Our conduit's light weight contributes to a streamlined process that makes installation simple and easy-to-follow.

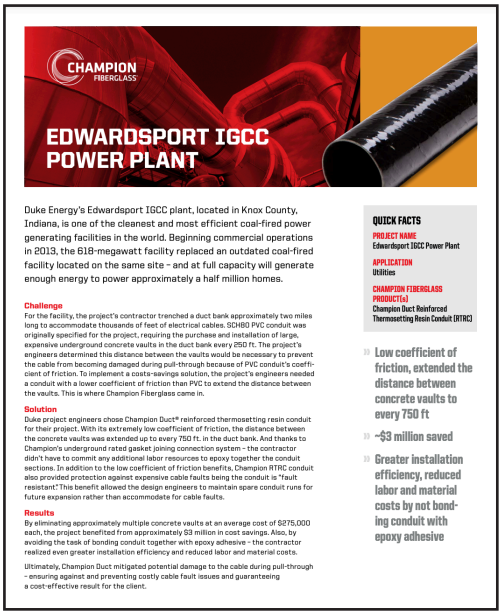
Watch installation videos.

Success Stories

Read case studies where fiberglass conduit was selected over PVC SCH 40, PVC SCH 80 and PVC-coated steel. Learn more about why customers selected it and and how the product contributed to favorable outcomes.

Edwardsport IGCC Power Plant

Using Champion Fiberglass conduit instead of PVC SCH 80 streamlined installation and provided savings since it eliminated the need for expensive concrete vaults.
[Read More]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EDWARDSPORT IGCC POWER PLANT

Duke Energy's Edwardsport IGCC plant, located in Knox County, Indiana, is one of the cleanest and most efficient coal-fired power generating facilities in the world. Beginning commercial operations in 2013, the 618-megawatt facility replaced an outdated coal-fired facility located on the same site – and at full capacity will generate enough energy to power approximately a half million homes.

Challenge
For the facility, the project's contractor trenched a duct bank approximately two miles long to accommodate thousands of feet of electrical cables. SCH80 PVC conduit was originally specified for the project, requiring the purchase and installation of large, expensive underground concrete vaults in the duct bank every 250 ft. The project's engineers determined this distance between the vaults would be necessary to prevent the cable from becoming damaged during pull-through because of PVC conduit's coefficient of friction. To implement a costs-savings solution, the project's engineers needed a conduit with a lower coefficient of friction than PVC to extend the distance between the vaults. This is where Champion Fiberglass came in.

Solution
Duke project engineers chose Champion Duct® reinforced thermosetting resin conduit for their project. With its extremely low coefficient of friction, the distance between the concrete vaults was extended up to every 750 ft. in the duct bank. And thanks to Champion's underground rated gasket joining connection system – the contractor didn't have to commit any additional labor resources to epoxy together the conduit sections. In addition to the low coefficient of friction benefits, Champion RTRC conduit also provided protection against expensive cable faults being the conduit is "fault resistant." This benefit allowed the design engineers to maintain spare conduit runs for future expansion rather than accommodate for cable faults.

Results
By eliminating approximately multiple concrete vaults at an average cost of $275,000 each, the project benefited from approximately $3 million in cost savings. Also, by avoiding the task of bonding conduit together with epoxy adhesive – the contractor realized even greater installation efficiency and reduced labor and material costs.

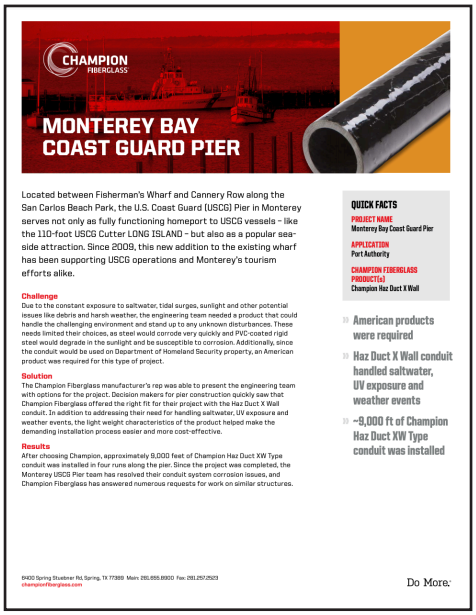
Ultimately, Champion Duct mitigated potential damage to the cable during pull-through – ensuring against and preventing costly cable fault issues and guaranteeing a cost-effective result for the client.

QUICK FACTS
PROJECT NAME
Edwardsport IGCC Power Plant
APPLICATION
Utilities
CHAMPION FIBERGLASS PRODUCT(s)
Champion Duct Reinforced Thermosetting Resin Conduit (RTRC)

- Low coefficient of friction, extended the distance between concrete vaults to every 750 ft
- ~$3 million saved
- Greater installation efficiency, reduced labor and material costs by not bonding conduit with epoxy adhesive

Monterey Bay Coast Guard Pier

Haz Duct® X Wall conduit withstands UV exposure, saltwater and weather.
[Read More]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MONTEREY BAY COAST GUARD PIER

Located between Fisherman's Wharf and Cannery Row along the San Carlos Beach Park, the U.S. Coast Guard (USCG) Pier in Monterey serves not only as fully functioning homeport to USCG vessels – like the 110-foot USCG Cutter LONG ISLAND – but also as a popular seaside attraction. Since 2009, this new addition to the existing wharf has been supporting USCG operations and Monterey's tourism efforts alike.

Challenge
Due to the constant exposure to saltwater, tidal surges, sunlight and other potential issues like debris and harsh weather, the engineering team needed a product that could handle the challenging environment and stand up to any unknown disturbances. These needs limited their choices, as steel would corrode very quickly and PVC-coated rigid steel would degrade in the sunlight and be susceptible to corrosion. Additionally, since the conduit would be used on Department of Homeland Security property, an American product was required for this type of project.

Solution
The Champion Fiberglass manufacturer's rep was able to present the engineering team with options for the project. Decision makers for pier construction quickly saw that Champion Fiberglass offered the right fit for their project with the Haz Duct X Wall conduit. In addition to addressing their need for handling saltwater, UV exposure and weather events, the light weight characteristics of the product helped make the demanding installation process easier and more cost-effective.

Results
After choosing Champion, approximately 9,000 feet of Champion Haz Duct XW Type conduit was installed in four runs along the pier. Since the project was completed, the Monterey USCG Pier team has resolved their conduit system corrosion issues, and Champion Fiberglass has answered numerous requests for work on similar structures.

QUICK FACTS
PROJECT NAME
Monterey Bay Coast Guard Pier
APPLICATION
Port Authority
CHAMPION FIBERGLASS PRODUCT(s)
Champion Haz Duct X Wall

- American products were required
- Haz Duct X Wall conduit handled saltwater, UV exposure and weather events
- ~9,000 ft of Champion Haz Duct XW Type conduit was installed

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Do More.

Fox Metro Wastewater Treatment Plant

When the PVC coating on the rigid steel conduit in this facility's waste pits began to separate and corrode, Champion Fiberglass provided a custom solution and an installation assist.
[Read More]


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FOX METRO WASTEWATER TREATMENT PLANT

Over the past eight decades, the Fox Metro Wastewater Treatment Plant has provided responsible and efficient pollutant removal from the raw wastewater of seven Illinois cities. Serving nearly 300,000 residents and business stakeholders, the treatment plant strives to surpass federal and state water quality standards for final effluent – allowing it to be safely returned to the Fox River.

Challenge
In the facility's waste pits – or large tanks used to treat wastewater with a variety of chemicals – much of the existing PVC-coated rigid steel conduit was corroding due to constant exposure to the caustic environment. Specifically, a large portion of the PVC coating had begun separating from the underlying rigid steel conduit itself, allowing corrosion to take place. The plant's engineers needed a solution that would stand up to the environment, while offering the flexibility and easy-to-adjust qualities needed for installation over the pits.

Solution
Despite a lack of familiarity with fiberglass conduit, the Fox Metro team chose Champion Duct standard wall above ground conduit and fittings for the job. The Champion Fiberglass staff was able to guide Fox Metro through the initial steps of the installation process. Shortly after, the team was able to install roughly 8,000 feet of product, making kicks and bends in the field to create a custom solution for the facility. Champion Fiberglass often works closely with clients to develop customized solutions ranging from conduit color to creating conduit to project specifics.

Results
With over 80 years of operation, the Fox Metro Wastewater Treatment Plant is no stranger to facility upgrades. With Champion Fiberglass on the project, the plant now has the versatility, flexibility and corrosion resistance to ensure immediate performance – and ongoing value for years to come.

QUICK FACTS
PROJECT NAME
Fox Metro Wastewater Treatment Plant
APPLICATION
Wastewater Treatment
CHAMPION FIBERGLASS PRODUCT(s)
Champion Duct® Reinforced Thermosetting Resin Conduit (RTRC)

- Fox Metro serves ~300,000 residents and stakeholders
- Helped guide initial steps of installation
- Created a custom solution with roughly 8,000 ft of product

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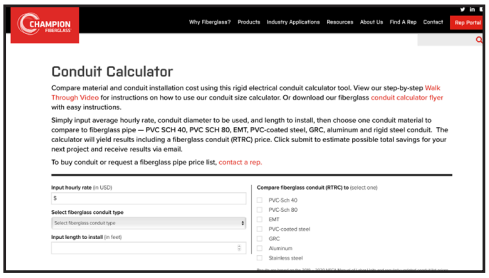
Ready for more information or to get in touch?

Get an estimate.
Check out our conduit calculator where you can plug in numbers specific to your job and get a detailed estimate comparing fiberglass conduit to PVC SCH 40 and PVC SCH 80 and PVC-coated steel.



Download BIM/Revit Models
BIM/Revit models help promote collaboration and project efficiency. Get access to our library here.

Find a Manufacturer's Representative
Our Find a Rep tool will guide you to a rep firm in your area, when you are ready.

Get in Touch
Got a specific question not answered here or a challenging job you want to talk about? Contact our helpful team: Contact us.

Visit **championfiberglass.com** to see how Champion Fiberglass outperforms the competition.