GUIDE TO ELECTRICAL CONDUIT COST SAVINGS

for Engineers & Contractors

Optimize project planning and specifying for success

CHAMPION FIBERGLASS®

THE CONSTRUCTION OUTLOOK IS POSITIVE, DESPITE CHALLENGES

Overall, the industrial construction outlook is optimistic, say insiders. The good news is that spending on construction projects is expected to increase in the coming year.

According to the American Institute of Architects, the organization's Consensus Construction Forecast anticipates spending on nonresidential building construction to accelerate 6.1% in 2023. Industrial construction is poised for growth at 9.9%, writes EC&M. Further, "By 2023, all the major commercial, industrial and institutional categories are projected to see healthy gains," reports the publication.

Additionally, the Inflation Reduction Act is expected to boost the EV, solar and construction markets as improvements are made to critical infrastructure. The legislation is predicted to provide billions of dollars in tax credits and other financial incentives in renewable power production and to the industrial, construction and electric vehicle markets, says EC&M.

But the industrial construction market has not been spared from inflation. Cost of goods across the sector are rising, increasing overall project costs significantly. Now is the time to scrutinize material and installation costs to squeeze out savings.

When it comes to electrical conduit, engineers, contractors and project managers have an array of products to select from including EMT, PVC, aluminum, stainless steel, GRC, PVC-coated steel and fiberglass (RTRC) conduit.

For your next project, learn how lightweight fiberglass conduit offers the most cost-efficient option while providing a strong, durable, easy-to-install electrical conduit across a variety of applications.

HOW FIBERGLASS CONDUIT PROMOTES PROJECT SAVINGS

When specifying electrical conduit for a project there are many considerations and options. Each application has distinct nuances. Fiberglass conduit has been successfully used in many applications including bridges, tunnels, petrochemical plants, data centers and wastewater treatment facilities. Here's how fiberglass conduit saves project dollars across applications:

1 LOWER MATERIALS COST

Fiberglass conduit is consistently less costly than other electrical conduit types such as PVC, GRC and PVC-coated steel.

In a recent pharmaceutical project requiring prefabricated electrical rooms, fiberglass conduit offered the following engineering benefits: lower weights for installation, lower coefficient of friction and higher tensile strength.

These benefits also contributed to substantial cost savings. For example, lower conduit weights saved installation time and required fewer products like structural steel and hangers. Lower coefficient of friction allowed for lower pulling tensions, less stress on conductors and less installation time. Higher tensile strength provided heat resistance and no burn-through in 90-degree bends. These factors resulted in a much more cost effective option as Champion Fiberglass electrical conduit was 90% less than galvanized rigid conduit at the 4" size, a massive cost-saving opportunity for the customer.

This example shows a comparative estimate of 4" Standard Wall fiberglass conduit to PVC SCH 40 and GRC:

MATERIALS COST			
Conduit Type	**GRC**	**PVC SCH 40**	**Fiberglass Conduit**
Total feet	**100**	**100**	**100**
Material net cost	**$2,928.47**	**$653.00**	**$511.00**
Total material net cost	**$2,928.47**	**$653.00**	**$511.00**
Difference vs. Fiberglass Conduit	**+ $2,417.47**	**+ $142.00**	

Total Materials Savings

$2,417.47

Total Materials Savings

$142.00

As you can see, Champion Fiberglass conduit saves $142.00 over PVC SCH 40 and $2417.47 over GRC. (All costs are compared to 100 feet, 4" Standard Wall conduit.)

For an easy, customized comparison based on your project specs, simply visit our conduit calculator to see a head-to-head comparison.

COMPARE PROJECT MATERIALS COSTS NOW

2 FEWER MATERIALS REQUIRED

Projects using Champion Fiberglass conduit typically require fewer materials such as supports and duct banks compared to other types of conduit, saving project dollars.

In 2016, Champion Fiberglass worked closely with Underwriters Laboratories (UL) to clarify requirements and update the code around longer support spacing distances for Champion Fiberglass conduit. The result was longer support spacing distances for Champion Haz Duct® conduit in 2016. Champion Duct® Standard Wall (SW), Medium Wall (MW) and Heavy Wall (HW) conduit followed suit in 2017.

Champion Fiberglass conduit's UL Listed support spacing distances have doubled (and in some cases, tripled) for many conduit diameters. For projects, cost savings are realized in that fewer hangers and strut are required.

For another project, fewer duct banks were required. Champion Fiberglass conduit's low coefficient of friction allows for longer cable pulls, eliminating the need and costs required for duct bank installation. Savings of $3 million was realized for the Edwardsport Power Plant over PVC SCH 80 conduit because the distance between concrete vaults was increased to every 750 ft, instead of 250 ft.

Finally, Champion Fiberglass provides BIM models that facilitate collaborative project planning. Our BIM models can help identify clash detection. They support precise purchasing of parts to help prevent overspending.

GAIN ACCESS TO BIM MODELS

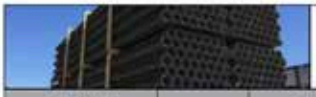
3 FASTER INSTALLATION

Thanks to light weight and easy connections, fiberglass conduit is faster to install than most other conduit types. In fact, it is documented in NECA's *Manual of Labor Units*.

Here's a snippet of the chart:

NECA Manual of Labor Units

The field is busy – but there's only one spot for number one. See how the installation time for fiberglass conduit and elbows stack up to PVC (SCH 40 and 80), GRC, PVC Coated Steel and Aluminum conduit and elbows.



CONDUIT

CONDUIT DIAMETER	EMT	PVC SCH 40	PVC SCH 80	ALUMINUM	STAINLESS STEEL	GALVANIZED RIGID STEEL	EPOXY FIBERGLASS*	PVC-COATED STEEL
3/4"	5	4.5	5.4	5.5	7.5	6	5.5	8
1"	5.5	5.25	6.3	6	8.75	7	5.75	10
1-1/4"	6.2	6	7.2	6.5	10	8	6	12
1-1/2"	7	7	8.4	7	11.25	9	6.35	15
2"	8	8	9.6	8	13.75	11	6.75	18
2-1/2"	9.5	9	10.8	10	18.75	15	7.1	21
3"	11	10	12	12	25	20	7.5	26
3-1/2"	13	12	N/A	15	31.25	25	7.85	32
4"	16	14	16.8	19	37.5	30	8.25	38
5"	N/A	18	21.6	24	47.5	38	8.6	45
6"	N/A	24	28.8	30	60	48	9	60

Average installation man/hours per 100 ft.
REF: 2021-2022 NECA Manual of Labor Units (normal installation men/hours per/100 ft.)
* Reduce labor units by 10% for 20 foot lengths

You can see across EMT, PVC, aluminum, stainless steel, GRC and PVC-coated steel, fiberglass conduit installs the fastest for most conduit diameters. And faster installation saves significant project dollars.

That was the case with a recent data center project. The contractor was able to install three miles of conduit in underground duct banks in one day. Thanks to the unique gasketed connection conduit that requires no adhesive to connect the straight lengths and elbows, the installation took half the time as the same installation with PVC conduit.

Here's what installation costs look like when comparing 100 feet of PVC SCH 40 compared to fiberglass conduit at the 4" size, with an $80/hour labor rate:

INSTALLATION COST		
Conduit Type	**PVC SCH 40**	**Fiberglass Conduit**
Total feet	**100**	**100**
Install hours (per NECA Manual of Labor Units)	**14**	**8.25**
Install cost	**$1,120.00**	**$660.00**
Difference vs. Fiberglass Conduit	**+ $460.00**	

That's a savings of nearly $500 per 100 feet when working with Champion Fiberglass conduit.

COMPARE INSTALLATION COSTS WITH THE CONDUIT CALCULATOR

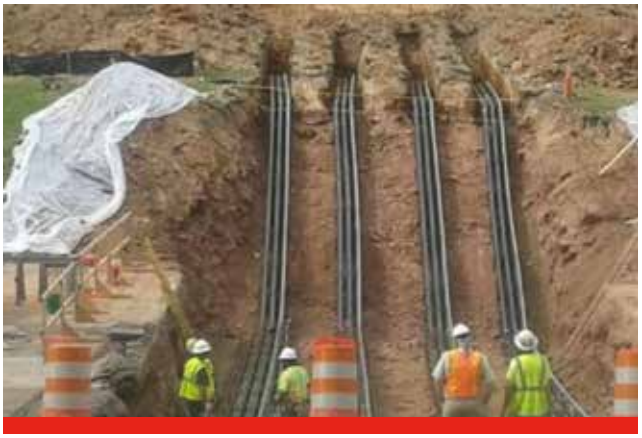
KEY PROJECT BENEFITS

Champion Fiberglass conduit advances projects with these benefits:

- Light Weight
- Installation Savings
- Corrosion Resistance
- Lower Materials Cost
- Low Coefficient of Friction
- No Burn-Through
- Fault Resistance
- Impact Resistance
- Toxicity/Halogen Free
- Wide Temperature Range
- Customized Solutions
- Innovative Industry Leader

4 PRODUCT LONGEVITY

Fiberglass conduit is strong and durable. It is corrosion resistant to many chemicals. It offers UV resistance, mechanical strength and fault resistance that minimize replacement costs compared to other types of conduit. It is long-lasting in the field which lowers project costs over time.



CHAMPION FIBERGLASS HAS 30+ YEARS OF INNOVATION, PROJECT EXPERTISE AND SUCCESS IN THESE APPLICATIONS:

SPECIFYING MADE EASY

Select the right conduit for your job by taking the next steps for project success.

Compare electrical conduit products with these tools:

BUYER'S GUIDE

DOWNLOAD

PRODUCT CATALOGS

DOWNLOAD

BIM MODELS

REGISTER

See how fast and easy installation with Champion Fiberglass conduit can be:

VIDEO INSTALLATION GUIDE

WATCH

Get a project estimate for materials and installation:

ESTIMATING CALCULATORS

ESTIMATE

GET IN TOUCH

Find a Rep in your area.

CONTACT

Contact us with product or project questions.

281.655.8900

info@championfiberglass.com

GET STARTED PLANNING YOUR PROJECT ON THE NEXT PAGE >>

ELECTRICAL CONDUIT PROJECT PLANNING CONSIDERATIONS

USE THIS PAGE TO ORGANIZE YOUR PROJECT.

Project name:
Application:
Comparative electrical conduit:
Type of supports required - hangers or strut:
Will there be expected corrosion or degradation from UV sunlight in the project environment?
Is cable fault a concern?

Budget:
Deadline:
Type of installation - direct buried, encased buried or installed above ground:
What are potential challenges (i.e. procurement, installation, corrosion, tight deadlines, etc.) ?
Is burn-through an issue?

Additional Notes: