Manufacturing

Fiberglass conduit systems are manufactured from quality thermoset epoxy resins and glass fiber reinforcement. The fiberglass reinforcement is applied in continuous and unbroken filaments throughout the product by the use of a manufacturing technique known as filament winding. This continuous reinforcement technique produces conduit with exceptional strength-to-weight characteristics and outstanding installed performance.

UV Resistance

Fiberglass conduit systems are specifically formulated for resistance to ultra violet-rays. This is achieved by blending a carbon black pigment with the epoxy resin during the manufacturing process. The pigment acts as a screen for the ultra violet rays and gives the fiberglass conduit its uniform black color.

Thermal Expansion

Fiberglass conduit's low thermal expansion is on 40% of that of PVC conduit hence reducing the number of expansion joints required. It is expected that regardless of conduit run length, the conduit assembly will exhibit different expansion characteristics than the bridge structure, therefore every bridge crossing installation of fiberglass conduit will require at least one expansion joint per conduit run. Fiberglass conduit's coefficient of thermal expansion is a low 1.25 x 102 in/in/0F. A simplification of this data is that for a temperature change of 10ºF, a 100 foot length of conduit will expand or contract of 0.015 inch. The table below offers some typical installation conditions.

Fiberglass Conduit Thermal Expansion

Ambient	Conduit Length Change
Temp Change (F)	Inches/100 ft of conduit
1 degree	.015"
40 degrees	.600"
80 degrees	1.200"
120 degrees	1.800"
160 degrees	2.400"

Chemical Resistance

Thermoset resins such as the epoxy material used in the manufacture of fiberglass conduit are extremely resistant to degradation from corrosive agents. Fiberglass conduit is unaffected by rain, snow, road salts, seepage and spillage of hydrocarbon fuels, high concentrations of most acids or airborne pollutants and hence is maintenance free.

Weight

Considerable savings in conduit hangers and supports can be realized due to fiberglass conduit's light weight and high flexural strength. Fiberglass conduit is less than 1/2 the weight of PVC conduits and many times lighter than steel or aluminum.

Conduit Banks

The planning of the conduit bank should include extra capacity to accommodate future requirements either for additional cables or possibly additional conduit runs. It is generally found to be more economical to initially allow for vacant conduits than to repeat the conduit installation procedure at a later date.