

GENERAL

- Conduit shall be phenolic fiberglass as manufactured by Champion Fiberglass, Inc. using the single circuit filament winding process.
- Conduit, elbows and fittings shall be manufactured from a phenol based resin and hardener with an appropriate E-glass roving manufactured by the same single circuit filament winding process. Resin shall be free of fillers.
- Conduit shall be supplied with either an integral wound bell and machined spigot or a bonded coupling and a machined spigot.
- Conduit, elbows, fittings, and adhesive are specified for use throughout a temperature range of -60°F **(-51°C)** to 1850°F **(1010°C)**.
- Conduit, elbows, fittings, and adhesive shall be constructed of noncombustible materials in accordance with the requirements of ASTM E136.
- Conduit shall be wound on steel mandrels at a helix winding angle to the longitudinal axis appropriate to produce conduit that meets the physical requirements of this specification. Mandrels shall be straight and true so as to produce a non-tapered conduit. Tapering is allowed at the belled end.
- Conduit shall be free from all defects including indentations, delamination, pinholes, foreign inclusions, and resin-starved areas. The conduit shall be round. The bore of the conduit shall be smooth and uniform. All conduit ends shall be cut at right angles to the axis of the conduit.
- Conduit shall not be manufactured with a condensation reaction of phenol and formaldehyde. This is so that there is no residual formaldehyde or any corrosive by-products.

ELECTRICAL PROPERTIES

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| • Dielectric Strength | 150 volts/mil. (5.9 kv/mm) | ASTM D 149 |
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PHYSICAL AND MECHANICAL PROPERTIES

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| • Tensile Strength (Axial) | 7,000 psi (62 MPa) | ASTM D 2105 |
| • Modulus of Elasticity (4" conduit) | 1.2 X 10 ⁶ psi (8.3 GPa) | ASTM D 2105 |
| • Thermal Conductivity | 1.67 BTU/(ft ²)(hr.)(°F/in) (0.24 mk/W) | ASTM D 5930-01 |
| • Specific Gravity | 1.70-1.75 | ASTM D 792 |
| • Glass Content | 70% ± 5% | API SPEC 15 LR |
| • Water Absorption | Less than 1.0% | ASTM D 570 |
| • Barcol Hardness | 70 ± 2 | ASTM D2583 |
| • Temperature Range | -60°F to +1850°F | ASTM E119 (1850°F 2 hours) |
| • Vertical Flame Test FT4 | Passed | CSA 22.2 |