

Complex Shapes Lined With ETFE, PP, and PVDF

Melt-processable resins such as ETFE (ethylene tetrafluoroethylene), PP (polypropylene), and PVDF (polyvinylidene fluoride), in conjunction with rotational lining, allow Resistoflex to provide lined steel piping products with custom or complex dimensions - with the same excellent quality the CPI has come to expect, at a price lower than expensive alloys.

We can supply your corrosive resistant lining requirements for large diameters and custom-dimension fittings, valve bodies, pump casings, flowmeters, and vessels. In fact, our capabilities are limited only by your imagination.

- ETFE has better chemical resistance to 300 deg F than any plastic except PTFE.
- PVDF is rated to 275 F on most chemicals, and is well-suited for halogenated compounds
- PP is rated to 225 F on a wide variety of chemicals, and is excellent in HCl service to 200 F with no permeation issues.
- ETFE and PP large diameter capability up to 24" NPS.
- Liner is seamless with uniform thickness.
- Liner is mechanically bonded to metal substrate.
- Standard liner thickness is .200" nominal, with thicker liner available.
- Resistoflex can line customer-supplied housings.

The Process: Rotational lining is an ideal method to line the interior surfaces of complex metal fabrications:

- A pre-weighed amount of resin in place inside the part.
- With the flanges sealed, the fitting is heated in a forced-air oven while being rotated on two axes simultaneously.
- The bi-axial rotation transfers the heat evenly to the fitting, until the resin's melt temperature is reached. As the resin melts, it uniformly coats the interior, regardless of the geometry of the fitting.
- The heat is turned off and the fitting continues to rotate as it cools, allowing the resin to set.
- The result is a seamless, heavy-duty plastic lining with available thicknesses up to .250".
- Prior to shipping, all complex shapes must pass a 12,500 volt electrostatic test or 425 psig hydrostatic test.

No expensive tooling or molds are required. The lining is continuous and homogeneous, with no seams, welds or stresses. The thick lining also allows for machining of critical flare faces and o-ring grooves. Rotational lining is superior to sheet linings, powder coatings, fluidized bed coatings and spray coatings.

