



The furan resin system is a furfuryl alcohol based acid catalyzed resin developed for the manufacture of fiberglass reinforced plastic (FRP) equipment. Furan laminates exhibit a broad range of solvent and chemical resistance combined with excellent physical, flame spread, and smoke development properties that are unique among FRP systems.

Comparable corrosion resistance generally can be found only in much more expensive materials of construction such as specialty metals, alloys, and fluorocarbon polymer or glass-lined steels. In instances where lower flame spread and smoke development properties are required, furan composites can be produced with values of less than 25 and 50, respectively, as measured by the ATM E-84 Tunnel Test.

Furan composites provide the fabrication characteristics and physical properties needed to make durable, reliable, high performance equipment. More and more corrosion engineers are finding that furan FRP equipment is cost effective in providing corrosion control in a broad spectrum of corrosive media.

It is important that material specifiers and/or potential users of FRP equipment know when, where, why, and how to utilize furan composites. Substantial cost savings and many other benefits can be realized when furan equipment is specified for your plant, including:

1. Excellent resistance to most chemical media including solvents, acids, bases, and their various combinations.
2. Resistance to chemical attack at elevated temperatures.
3. Excellent retention of physical properties at upset temperatures to 400°F (204°C).
4. Resistance to a broad spectrum of chemical media combined with stability at elevated temperatures provide versatility to accommodate process changes, unanticipated spills and thermal upsets.
5. Outstanding flame spread and smoke development properties for ducting, stacks, scrubbers, and other related applications.
6. Suitability for large structures and pressure vessels.

Furan FRP equipment is often specified for handling liquid or gaseous effluent where aggressive combinations of acids or bases and strong solvents such as ketones, ethers, or chlorinated organic types are present. Typical equipment includes: tanks, reactors, pressure vessels, distillation columns, piping, scrubbers, ductwork, hoods, stacks, fans, and sumps.



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## ***Furan Composites Overview***

02-04-2002

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Engineers in many industries have utilized the benefits of furan FRP equipment. Among the processes employing furan equipment are those manufacturing pesticides and other agricultural chemicals, vinyl chloride monomer, other chlorinated organics, isocyanates, rayon, and other cellulosic fibers and films, dye-stuffs, and esters such as acrylates. Furan composites are widely used in the pharmaceutical industry because of their ability to handle a wide range of solvents and solvent fumes - including methylene chloride, tetrahydrofuran, etc. Furan equipment is also used throughout the chemical processing industry for the recovery of solvents and for waste effluent systems and in the metal treatment industry