



## FIBERBOND® Series Descriptions

### Chemical Process, Pulp & Paper, and Petrochemical Applications

Series	Description
20HV	Series 20HV is a general purpose GRP piping product suitable for design pressures up to 200psig (2" - 12") and design temperatures up to 150 deg F. Sizes 14" - 18" can be rated up to 150psig and 20" - 24" up to 100psig. 20HV was formerly known as 20FW-HV.
20FR-E	Series 20FR-E is a fire-retardant, low flame spread product that also meets the L3 fire endurance standard in IMO A.753(18). 20FR-E has the same pressure ratings as 20HV. Design temperatures up to 200 deg F are suitable for some applications. 20FR-E would be used where low flame spread and fire endurance are a requirement.
20HV(FDA)	Series 20HV(FDA) is identical to 20HV except that specific manufacturing and fabrication processes are followed according to 21 CFR 177.2420. When used in freshwater services, 20HV(FDA) should be specified. Pressure and temperature ratings are the same as 20HV.
110FW	Series 110FW is a GRP piping product designed for more corrosive services. It uses a resin-rich 110mil liner (0.110") and a premium grade epoxy vinyl ester resin. Usage on deepwater and marine projects would be those services requiring a higher level of corrosion resistance. Ratings are 150psig for sizes 2" - 18" and 100psig for 20" - 24" up to 200 deg F. 110FW is also known as 110.
Variables for Custom Products	<p>Liner Thickness: Normally 0.020" to 0.250" (20 to 250mils)</p> <p>Cure system: CoNap/MEKP, CoNap/CHP, or BPO/DMA.</p> <p>Veil glass: C-glass, synthetic veil, or ECTFE veil.</p> <p>CSM glass: E-glass, Boron-free E-glass, ECR-glass, or AR-glass.</p> <p>Resins: See resin family below.</p> <p>Structural glass: E-glass, Boron-free E-glass, ECR-glass, or AR-glass.</p> <p>Other: Post-cure.</p>
Typical Glass Family	<p>C-glass veil (standard in 20HV &amp; 20FR-E liners)</p> <p>Synthetic polyester veil (standard in 110FW liners)</p> <p>E-glass</p> <p>Boron-free E-glass</p> <p>ECR-glass (also Boron free) (standard in all liners &amp; structural cages)</p> <p>AR-glass (alkali-resistant)</p>
Typical Resin Family	<p>Bisphenol A (bis-A) epoxy vinyl ester</p> <p>Bis-A, low styrene epoxy vinyl ester</p> <p>Novolac epoxy vinyl ester (standard in 110FW)</p> <p>Brominated bis-A epoxy vinyl ester (standard in 20FR-E)</p> <p>Brominated novolac epoxy vinyl ester</p> <p>Chlorendic polyester</p> <p>Isophthalic polyester (standard in 20HV)</p>