

FRP Saturant 220 C

Chemically-Resistant Composite Saturating Resin

Description

Advanced FRP Systems' **FRP Saturant 220 C** is a 100% solids, epoxy saturating resin designed to impregnate carbon, glass or Kevlar fibers. This innovative resin system was engineered to provide the best possible chemical resistance, especially to aggressive solvents like acetone, dichloromethane, toluene, and methanol. **FRP Saturant 220 C** together with a reinforcing fabric provides structural enhancement and leak repairs even in the most aggressive service environments.

Product Advantages

- Zero VOC system
- Excellent all around chemical resistance
- Max Operating Temp. 215 °F
- Moisture Tolerant epoxy
- Excellent Thermal Shock resistance
- Ambient Temperature Cure
- Low Coefficient of Linear Thermal Expansion

Suggested Application

FRP Saturant 220 C is an excellent product for repairing damaged pipes, rebuilding pressure vessels, reinforcing tanks, and protecting concrete containment areas. It is especially pipes, tanks and vessels that contain or are nearby to aggressive chemicals like solvents, acids, caustics or oxidizers.

Performance Data

With CF-500 BD Carbon Fiber Reinforcement

	Test Method	Results
Flexural Strength	ASTM D790	59,100 psi
Flexural Modulus	ASTM D790	2,390 ksi
Tensile Strength	ASTM D638	95,600 psi
Young's Modulus	ASTM D638	4,296 ksi
Rockwell Hardness	ASTM D2583	40
Adhesion to Concrete	ASTM D4541	>750 psi
Adhesion to Steel	ASTM D4541	3000 psi
Heat Distortion Temperature	ASTM D648	245 °F
Maximum Operating Temp.		215 °F

Product Characteristics

Finish: High Gloss

Color: Clear

Volume Solids: 100%

Mix Ratio (by wt.): 2.1:1

Mix Ratio (by vol.): 1.9:1

Density: 1.10 g/mL

Approx. Coverage: 70 sqft/ gallon with CF-500 BD

Maximum Film Build: N/A

Working Time: 30 minutes at 75 °F

Application Temperatures: 50 - 120 °F

FRP Saturant 220 C is sold in ½, 1, 2, and 4 gallon units. Other unit sizes may be available.

Sold FOB Weymouth, MA

Cure Schedule

Cures for Application	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)
Dry to Touch	9 hours	5 hours	2 hours
Dry Hard	24 hours	12 hours	6 hours
Overcoat Window	9 - 168 hours	5 - 96 hours	2 - 72 hours
Cures for Service	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)
Handling	24 hours	12 hours	6 hours
Return to Service	N/A hours	48 hours	24 hours
Full Mechanical Strength	N/A hours	96 hours	72 hours

Contact Advanced FRP Systems for Elevated temperature post-cure information. Elevated temperature cures will increase chemical resistance, raise heat distortion temperature, and reduce return to service time.

Application Information

All Advanced FRP Systems products should be installed by a certified applicator or with direct oversight by Advanced FRP Systems, Inc. This data sheet provides general application guidelines for FRP Saturant 220 C.

Contact Advanced FRP Systems for more information if your project has detailed coating specifications.

Ensure air and substrate temperatures are between 50 - 120 °F and relative humidity is below 95%. Follow surface preparation guidelines below prior to coating.

Prior to applying composite reinforcement, the surface to be reinforced must be smooth and free of pits, voids, or other imperfections. Repair and rebuild damaged substrates with **Advanced FRP Repair Putty**, **FRP Tack Coat 110 HT**, or **Steel-Stik**.

Pour all of Part A – Hardener into Part B – Base and mix with low speed power agitator for 2-3 minutes. Using a paint stick or spatula, thoroughly scrape sides and bottom of unit. Mix with power mixer for an additional 2 minutes. Do not dilute Advanced FRP products.

Ensure surface is properly prepared and vertical and overhead areas have **Tack Coat 110 HT** applied as directed.

Hand Saturation: Pre-saturate the reinforcing fabric by rolling it out onto a saturation table, then pouring the mixed 220 C directly onto the fabric. The liquid should be moved around the fabric until the entire surface is visibly saturated. Flip the fabric over and saturate from the back side, then roll up onto an application roll.

Saturation Machine: Saturation machine shall not be used by a contractor that has not been trained in its proper use by Advanced FRP Systems. The saturation machine can only be used for fabrics up to 25 inches in width. Larger width fabrics must be hand saturated. Contact Advanced FRP Systems for information on technical oversight and use of saturation machine.

Surface Preparation

Steel (Immersion Service): Remove all oil and grease from surface with an SSPC-SP 1 Solvent Wipe prior to blasting. Abrasive Blast to an SSPC-SP 10 Near white metal blast with a sharp angular profile of 2 – 3 mils (50 – 75 microns).

Steel (External Reinforcement): Remove all oil and grease from surface with an SSPC-SP 1 Solvent Wipe. Minimum surface preparation of SSPC-SP 2 Hand Tool Cleaning must be performed. For enhanced performance, an SSPC-SP 6 Commercial Blast Cleaning with an angular surface profile of 1.5+ mils should be used.

Concrete (Immersion/Secondary Containment): Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. Surface should be thoroughly cleaned and dry. Concrete and mortar must be cured at least 28



days @ 75 °F. Surface must be free of laitance, concrete dust, dirt, form release, curing aids and other foreign material. **Advanced FRP Sealer 200** should be applied prior to coating at 3-5 mils to increase adhesion and reduce outgassing.

Concrete (Atmospheric Corrosion): Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. **Advanced FRP Sealer 200** is not required but recommended for improved adhesion and aesthetics.

Previously Coated Surfaces: Consult with Advanced FRP to ensure previous coating is compatible. If compatible and previous coating is in good condition, remove all loose coating and foreign materials. Brush blast or grind all glossy areas to a uniform dull finish. Remove dust, oil and debris with SSPC-SP 1 Solvent Wipe prior to coating.

Storage and Shelf Life

FRP Saturant 220 C must be stored between 45 – 110 °F, out of direct sunlight. If stored in these conditions, the product will have a 24-month shelf life.

Safety Precautions

Please consult up-to-date Safety Data Sheets (SDS's) prior to use. An SDS should be available on site whenever Advanced FRP products are being used.

Warranty Information

Advanced FRP Systems, Inc. warrants that our products are free of manufacturing defects in accordance with applicable Advanced FRP quality control parameters. Liability for products proven defective, if any, is limited to replacement of defective product or refund of purchase price as determined by Advanced FRP Systems. Additional warranties and protection are available. Contact Advanced FRP for more information.

Disclaimer

The information and recommendations set forth upon this data sheet are based on years of laboratory and field analysis. This information is intended to be used as guidance only as many factors affect the performance of polymeric systems. Actual exposure conditions are the best test of suitability and Advanced FRP Systems will generally provide complimentary samples for field testing.

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