

Field Adhesive Weld Instructions for Bonding FRP Equipment

Read the following instructions completely before making an adhesive joint with FiberSystems' field weld adhesive. Pay special attention to the notes and cautions at the end of these instructions.

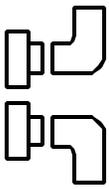
NOTE: Keep bulk adhesive container closed whenever not in use. Store materials in cool (65 degrees to 75 degrees F) area.

Procedure

- 1.0 All fittings and surfaces to be bonded must be sanded with 26 to 32 grit sandpaper or a hand grinder just before assembly. Sand or grind enough to remove all surface gloss, any oxidation, and contaminants. Surfaces to be bonded should have a dull, rough finish after preparation.
- 2.0 Match mark the two mating pieces for correct placement and alignment. Do not touch mating surfaces with hands or allow mating surfaces to come in contact with other contaminants such as dirt, oil, grease, water, etc. Do not prepare joining surfaces more than 60 minutes prior to bonding. If surface remains sanded and un-bonded for much longer - re-sand before bonding.
- 3.0 Remove the sanding dust with a clean, dry cloth or brush. The prepared joint surface must remain free of dirt, grease, water or other foreign substances to provide a good joining area. Do not use solvent to remove dust!

NOTE: Under humid conditions, the joining surface may be wiped with a solvent (acetone or methylene chloride) dampened cloth to assure a dry bonding surface. If this procedure is followed, it is important to allow adequate time for complete evaporation of solvent before beginning the joining process. Do not use contaminated or recycled solvent.

- 4.0 Adhesive Mixing:
 - a. Mix or stir bulk adhesive base in the original container before pulling any material out. Weigh eight ounces (approximate) of adhesive Part A (300 grams) into a mixing cup.
 - b. Measure the catalyst using the small measuring cup or graduated cylinder (syringe). This may be adjusted, if required, for warm or cold temperatures. Pour the pre-measured amount of catalyst into the mixing cup containing the adhesive. Mix all ingredients thoroughly until the



adhesive reaches a uniform consistency. Continue mixing for one to two minutes before using. Be certain that **no** liquid remains unmixed.

The ratio of the catalyst (Part B) is 2cc to 100 grams of bulk adhesive (Part A). In warm temperature environments, catalyst maybe reduced to 1cc. In cold environments, catalyst may be increased to 3cc. **Never use less than 1% or more than 3% of the catalyst.**

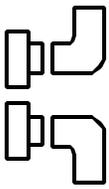
- c. Once mixed, the working life of the catalyzed adhesive is approximately 10 to 20 minutes, depending upon the ambient temperature.
- d. Compensation for Temperature Variations:

FiberSystems' adhesive is sensitive to temperature variations not only in curing time, but also in workability. In an atmosphere of 75 to 90 degrees F, FiberSystems' adhesive should appear as a stiff, but workable paste. Although it is recommended that all fabrication work be done within this temperature range, various measures may be taken to effectively compensate for cooler or warmer atmospheres.

Cooler temperatures cause the individual components of the adhesive to stiffen. This will cause difficulty in mixing and "wetting" the surfaces to be bonded. Gentle warming of the individual cans (with a heat belt if no oven is available) will drop the viscosity sufficiently to permit proper mixing and application of the adhesive. Warm the adhesive to approximately 70 degrees F. Never apply heat to the liquid peroxide (Part B) catalyst.

Avoid overheating the adhesive, as this will cause the adhesive to drop excessively in viscosity; and react more quickly, shortening its pot life. The adhesive should be thick enough to remain where it is spread without sagging. At higher temperatures, the pot life of an adhesive will shorten to 5 to 10 minutes. A silica thickener can be added; contact us for type and instruction. Do not decrease catalyst ratio beyond recommendations.

- 5.0 Apply a thin layer of adhesive, approximately 1/32" thick, to **both** of the surfaces to be bonded using a wood stirring stick. Work the adhesive into the surfaces thoroughly with a troweling action.
- 6.0 Without delay, adhere parts onto each other. Make certain "match marking" and alignment are exact. A weight or external force must be applied to hold both parts together. Do not disturb the assembled joints. Hose clamps, straps, come-alongs, or stands may be used to hold saddle pads onto pipe to allow the joint to cure.
- 7.0 Excess adhesive should be wiped from the joint area, making a fillet, or bead, at the external joint of the connection. Be certain to always remove excess material from internal areas to prevent flow obstructions. The entire sanded area of each part should be coated with adhesive.



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- 8.0 Before moving the joint, the adhesive must be completely hard. To accelerate the cure so that the joint may be moved - after the joint has been made, apply non-contact forced warm air heat. Never apply direct heat elements to "wet" or un-gelled adhesive.
- 9.0 Safety , Disposal & Handling
- a. Keep lid tightly on the adhesive container whenever adhesive is not being removed from the container.
 - b. When adhesive becomes stiff, lumpy or increases in temperature, throw it away! **Use Only Fresh Adhesive Mix!** If excess catalyzed adhesive left in the mixing cup should start to "heat up" and smoke - the cup can be put in a bucket of water to cool off the exotherm.
 - c. Wear adequate eye and skin protection when mixing two part adhesive.
 - d. To dispose of unwanted, unmixed adhesive, mix both parts and dispose as a normal solid.