

Clean Wrap Bonding System



for **Dual Guard**
Non-sprinkled
Smoke Removal Duct



DualGuard 2000[®]
Fluoropolymer Barrier FRP Duct/Pipe

and

Standard Class 1 FRP
Sprinkled Duct



Composites USA
A Critical Process Systems Company



DUAL GUARD AND CLASS 1 FRP INSTALLATION INSTRUCTIONS

Read all the instructions and familiarize yourself with the materials before starting the bonding procedure. A standard complete bond kit includes the following:

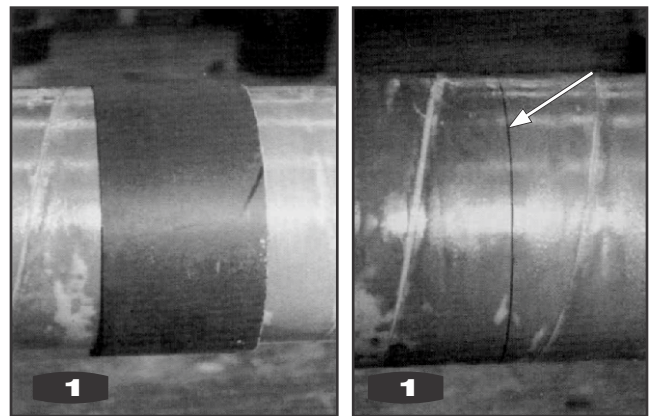
1. **Material Safety Data Sheets (MSDS)** for the resin and hardener. Familiarize yourself with the material you will be working with and if necessary notify any appropriate safety personnel.
2. **Wet raw material:** Clean Wrap resin and Clean Wrap hardener.
3. **Dry material:** milled fiberglass and silica beads for making paste, strips of Halar surfacing veil and fiberglass cloth for completing wraps.
4. **Accessory items:** brushes serrated rollers, and mixing cups for working with the raw materials.

The installer will need to supply the following to complete installation: acetone for clean up, saber saw with fine tooth blade for cutting, grinder with 24 grit replacement pad for deburring, scale, hot glue gun with glue sticks, or straps for mechanical clamping of individual pieces during assembly, safety glasses, dust mask, rubber gloves, protective clothing and cardboard or paper to protect the floor.

PROCEDURE:

1 MEASURE AND MARK

Use a tape measure to mark off the length of the duct to be cut. Take a flexible flat strip of material and wrap around the duct surface and align the ends of the strip. Then draw a line completely around the duct.



2 CUT & CHECK FIT

Using a saber tooth saw with a fine tooth bimetal blade or a circular saw with an abrasive blade, carefully cut the duct on the mark. After cutting the mating pieces check for proper fit up. Make sure there is not more than a 1/8" gap between sections.

3 DEBURR

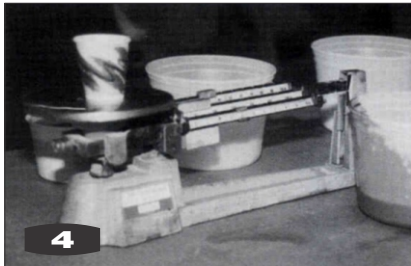
Using a grinder, with 24 grit replacement sanding pad or 16 grit sandpaper, remove any rough edges, then remove any dust with a cloth. Pieces when done should be square cut, clean and free of any grease, dirt or jagged edges.



4 WEIGH & MIX

Clean Wrap resin and hardener, using a scale accurate to fractions of a gram. The proper ratio of resin to hardener is 100 parts resin by weight to 15 parts hardener by weight. Mix no more resin than can be comfortably applied and completed in a 15 minute period. Follow all safety precautions and wear protective gloves and glasses.

Note: Mixing must be accurate, 100 parts by weight resin to 15 parts by weight hardener, (or 100:19 by volume).



5 COAT ENDS

Using a brush, coat all cut ends of the duct or fittings with mixed resin.

6 FIT & TACK

Fit the two pieces into position using any convenient means to assure the pieces will remain rigid throughout the rest of the procedure. Hot glue guns or mechanical strapping have been successfully used in the past.

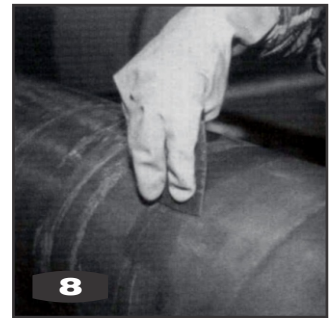
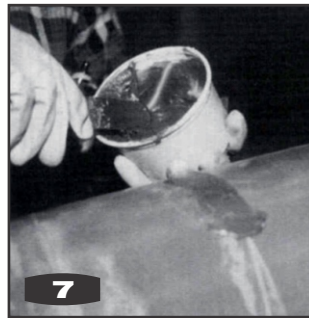


7 MIXING THE PUTTY

Prepare a resin putty to fill the seam. Mix resin and hardener as usual, increasing the amount of hardener (for putty formation only!) to 15-25 parts hardener per 100 parts resin. To the resin mix, blend in equal volumes of (first) silica and (second) milled glass fibers to double the overall volume of the resin mix alone. Mix thoroughly until a peanut butter consistency is obtained. Quantities of silica or milled glass may be altered slightly as required to achieve the desired consistency.

8 FILL THE SEAMS

Using a putty knife, spread the resin putty mix around the duct, filling the seam. Provide as smooth a surface as possible, wiping the putty joint with a piece of cardboard or rubber to smooth. If necessary, wipe any excess resin putty from the inside of the duct with a clean rag.



9 CUT REINFORCEMENT

While waiting for the resin putty to cure, cut the Halar surfacing veil to overlap the circumference by at least 2". Cut the cloth to overlap the Halar by 2" on the first layer and increase by 1" on each subsequent layer, using the joint widths shown in Table 1 (provided separately) as a guide.

10 APPLY THE VEIL

Apply a coat of Clean Wrap mixed resin and hardener to the exterior of the joint. Wrap the Halar surfacing veil around the duct, centered over the joint. Apply additional resin to the Halar with a brush, saturating completely.



11 WETTING THE CLOTH

Lay the next (inside) layer of cloth on a flat work table covered with cardboard or mylar. Saturate the cloth with mixed resin and hardener using a brush.

12 APPLY THE CLOTH

Carefully lift the saturated cloth from the work table and place over the Halar veil on the duct. Overlap all seams evenly.

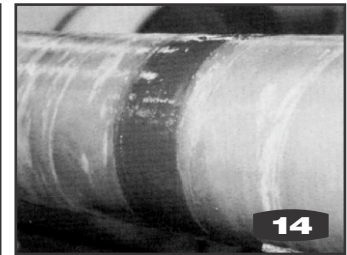
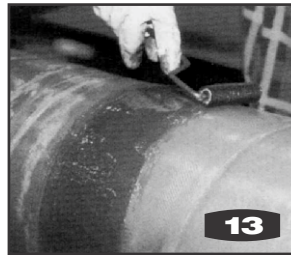


13 ROLL OUT

Remove any entrapped air under the veil and cloth using the serrated roller. Take your time, all entrapped air must be removed to provide a quality joint. The cloth must be fully saturated with resin.

14 COMPLETION

After the resin is tack free the finished joint should look like the duct shown above.



NOTES:

1. Read all MSDS sheets prior to working with resin and hardener.
2. Wear all required safety protection equipment, including rubber gloves, safety glasses, and where required, dust masks.
3. Dispose of all waste materials properly.
4. Store resins and hardener at room temperature. Under certain conditions the resin may crystallize. If this occurs, heat the resin until all crystallization disappears.
5. For best results the temperature should be 50°F or higher.



Clean Wrap bonding system bears Factory Mutual Approval #2DOA7.AM for Dual Guard duct systems.



U.L. listed for use in bonding Dual Guard duct systems.



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