

FIELD WET JOINT INSTALLATION INSTRUCTIONS FOR INDUSTRIAL AIR DUCT

TOOLS and SUPPLIES

The following items are required to be on hand before attempting the field assembly of duct joints: Metal or plastic lamination roller, rubber gloves, paint brushes, measuring container and plastic pails for mixing resin and catalyst, goggles or other protective eyewear, utility knife or scissors, disc or belt sander with 24-grit abrasive, heat gun, wax paper or mylar and solvent such as acetone for cleanup of equipment.

PRECAUTIONS

Although most polyester and vinylester resins are quite stable, extended storage at elevated temperatures above 80° F (26.7°C) can decrease the reactivity of the resin or cause it to gel even without the use of catalyst. Be sure and read the resin data sheets that come with every shipment. Temperature extremes must be avoided for proper curing of the resin. See table 1 for mixing ratios at varying temperatures. Work must be done in a dry, well-ventilated area. A wide flat surface should be available to wet-out the glass mat strips. This surface should be covered with a disposable covering. Anyone coming into contact with resin or catalyst must wear rubber gloves and protective eyewear.

JOINING PROCEDURES

Cut the duct to the desired length using a circular saw with a carbide grit, metal cutting or masonry blade, making sure that the cut ends are cut squarely to butt closely as per the tolerances specified in S.M.A.C.N.A. STD. 7.26.3. With a disc sander, min. 24-grit disc, roughen the ends of the duct to be joined, removing the resin rich surface. The width of abraded surface for each duct end is 1 to 2 inches more than half the width of the mat that will be used on the joint. Duct diameters will use different joint material schedules depending on thickness, liner type and pressure ratings. See External Field Joint Schedules for each standard specification in this catalog section.

Cut the glass mats to length using number of layers and widths as indicated. Each mat length should be 3.2 times the normal duct diameter plus 2". This will allow for a slight overlap. Where two layers of mat are used, stagger the two layers outward so that the overall width of the joint is about 1/2" to 1" wider than the mat layers used. On diameters over 36" or mat laying lengths exceeding 10', it can be cut in half or thirds (adding extra for overlap) and then laid up in sequence. If this is done, allow for a minimum overlap of 3".

Mix resin with catalyst in a disposable plastic, paper or metal container using only as much as you can work with in 15 to 20 minutes.

On a flat disposable surface covered with release film (such as wax paper or mylar®), lay the first (widest) section of fiberglass mat, chop strand side down, and wet out the woven side with catalyzed resin mix, see fig's 1 & 2 on the following pages.



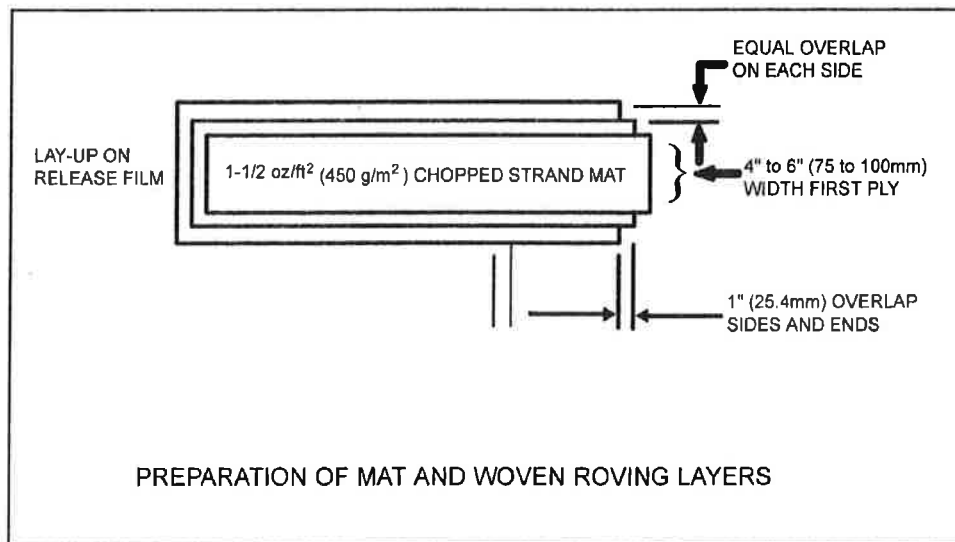


FIGURE 1

Work the resin up through the dry fiberglass mat to minimize air entrapment. Once completed, turn the mat over and coat the chopped strand side. Place additional layers of mat for the joint onto the coated mat with the woven side down and wet it out also. Repeat second step as required for the proper number of layers as listed in table 2. For SMACNA specs requiring separate layers of mat and woven roving, proceed as above using the sequences in table 2 and table 3 on pages 28 and 29 of this catalog section.

Begin the lay-up of the joint wrap by placing the chop strand side of the mat down against the duct. Use a 3" to 4" wide brush and laminating roller to work the resin in. Continue working the joint by rolling the resin from the center of the joint to the outer edges. Use moderate force with the roller to expel trapped air out of the laminate. Be careful not to remove too much resin. Each layer of fiberglass should overlap the layer beneath it (1/2" to 1") and bond directly to the duct in order to achieve secondary bonding. If the joint looks dry use additional mixed catalyzed resin during rolling. Place the rollers and paint brushes in solvent after each use, swirling them around them to ensure the resin is dissolved.

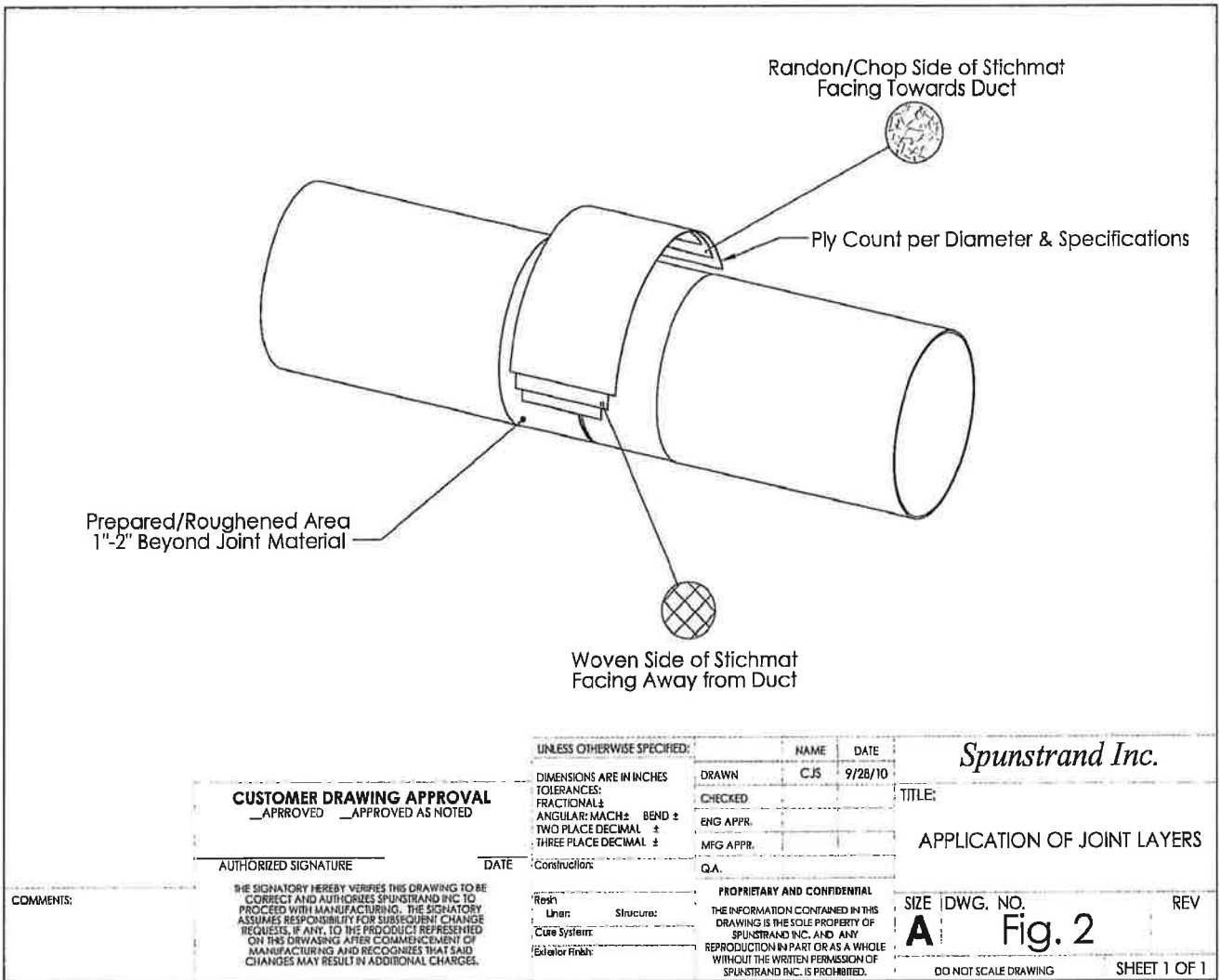
Note

All solvent must be collected in a D.O.T. approved metal container at the end of each day. After the job is completed, the collected solvent that has not evaporated, should be disposed of through a licensed hazardous waste treatment storage and disposal facility.

When internal joints are required, the inner surface should be prepared prior to joining the two sections. Any gaps between the two sections should be filled with a catalyzed resin putty and overlaid with a minimum of two layers of 4" wide "C" veil. When called for in the specifications, the c-veil may be preceded with 2 layers of 4" or 6" wide 1.5 oz chopped strand mat. See Table 6 on page 32 of our Section 3 Industrial Duct for Putty Details.

Saddle Taps

FRP saddle taps are attached using the same wet joint procedure as described above. First cut a hole in the duct where the saddle tap is to be attached. The hole should be slightly smaller than the saddle tap opening. Use a carbide chip or a metal cutting blade on a sawsall or jigsaw taking care to remove the piece that is being cut out. Abrade the tap flange and the duct for 3" outside the tap flange perimeter. Place a 6" wide section of mat that has been saturated with resin so it is centered half way on the flange and the duct. Use brushes and laminating rollers to work out any air bubbles until mat is in total contact with the flange and duct surfaces.



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AUTHORIZED SIGNATURE _____

DATE _____

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COMMENTS:

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL ±
 ANGULAR: MACH ± BEND ±
 TWO PLACE DECIMAL ±
 THREE PLACE DECIMAL ±

Construction:

Resin: _____
 Lamin: _____ Structure: _____
 Cure System: _____
 Exterior Finish: _____

NAME	DATE
CJS	9/28/10

DRAWN	CHECKED
ENG APPR.	MFG APPR.
QA	

Spunstrand Inc.

TITLE:

APPLICATION OF JOINT LAYERS

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SIZE	DWG. NO.	REV
A	Fig. 2	

DO NOT SCALE DRAWING

SHEET 1 OF 1

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TABLE 1: GUIDE TO MIXING RATIOS

RESIN	CATALYST	AMBIENT TEMPERATURE
NOT RECOMMENDED BELOW 50° F (10° C) WITHOUT AN EXTERNAL HEAT SOURCE		
1 Pint (472 cc)	.34 oz (10 cc)	*50-60° F (10-16° C)
1 Pint (472 cc)	.27 oz (8 cc)	60-70° F (16-21° C)
1 Pint (472 cc)	.17 oz (5 cc)	70-80° F (21-27° C)
1 Pint (472 cc)	.14 oz (4 cc)	80-90° F (27-32° C)
1 Pint (472 cc)	.10 oz (3 cc)	90+° F (32 +° C)

Mix resin thoroughly before adding catalyst into the mixing container. The above catalyzation table will allow for a pot life of about 20 minutes.

**Call Spunstrand® Inc. for special recommendations - a heat gun or external heat source may be necessary.*

WET JOINT MATERIAL

Jobsite Hazards and Precautions

While the materials provided to complete this project are all very stable and simple to use, there are some precautions that must be taken to assure that hazardous conditions do not develop on the jobsite. This information is all in the MSDS information provided, but this is for clarifications of crucial parts of these data sheets. Always follow OSHA and jobsite regulations with joint lay-up materials.

Please be sure to read all MSDS information for the chemicals being used and adhere to all personal protective equipment recommendations and storage information.

