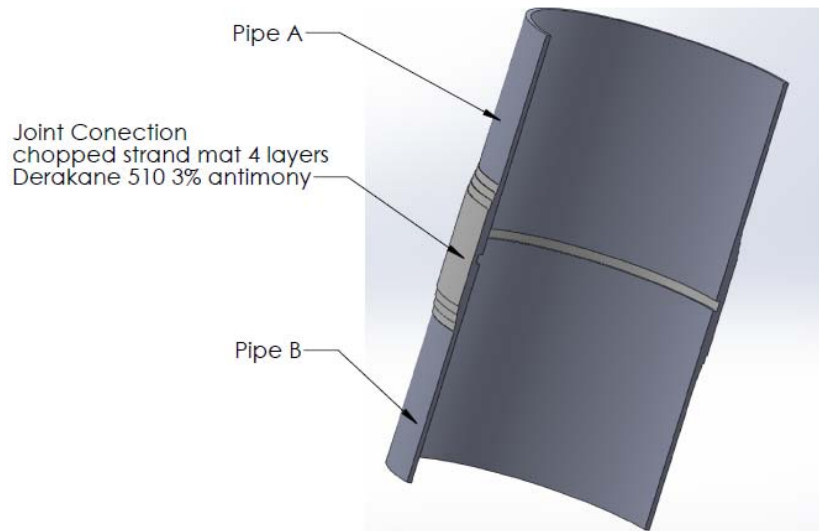


## Duct Laminates:



1. Resin shall be a premium grade of fire retardant vinyl ester with a flame spread rating of less than 25, Derakane 510 3% antimony
2. All supplied duct pipes for PEF-1, 2, 3 systems will be numbered and labeled. Pipe connection sequence shall be as: (PEF-1)-1 connects to (PEF-1)-2 connects to (PEF-1)-3 and follows.
3. Chopped strand mat for duct connection supplied. Each joint has 4 mats supplied, pre-cut at the factory. Pipe ends will be prepared for onsite lamination.

### **What you will need:**

**Paint brush, Mat roller, rubber gloves, measuring cup, mixing stick, sanding block and sandpaper (80 grit), scissors, acetone or lacquer thinner and fiberglass cloth or mat.**

1. **Clean surface area with rag, make sure that it is dust free.**
2. **Align two pipe pieces and fix the pipes such that it does not moves during lamination**
2. **Put on gloves. Each joint will have 4 fiberglass mats supplied**
3. **Mix the liquid hardener:**

**Each joint will require 0.5 lb of resin(supplied by other) to completely saturate the fiberglass cloth or mat. Pour resin into clean container or measuring cup. For every 0.5 lb of resin, use 1% (2.5 mils for each joint) of hardener (refer to resin manufacturer). Mix thoroughly.**

4. **Brush a coat of the resin/hardener mixture onto the pipe connection area, extending 2-3 inches beyond mat size.**
5. **Place fiberglass cloth or mat onto clean non-porous surface such as sheet of aluminum foil. Use paint brush to apply resin/hardener mixture to fiberglass cloth/mat.**

**A dabbing motion will help saturate the material.**

**Place saturated fiberglass material over pipe connection area, flattening and smoothing with a mat roller. Roll out all air bubbles. Brush another coat of resin/hardener mixture over the fiberglass material.**

**Similarly, place subsequent pieces of fiberglass material over the connection area, following the same procedure. Total number of layers:**

4. **Allow material to harden 30 min at 75 Fahrenheit (23.89 degrees Celsius) or above. Curing will take longer at cooler temperatures.**
6. **Sand with 80 grit sandpaper, remove sharp edges, then paint.**

FRP lamination should be carried out as per Standard CGSB 041-0022, see page 4-59