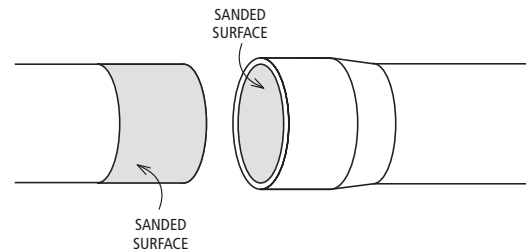


### Adhesive Joint

The design engineer may elect to specify that the Conduit joint be adhesive bonded for greater strength requirements (approximately pullout (Lb.) = diameter (in) x 1000 Lb. or (Kg) = diameter (cm) x 200 Kg), when excessive vibration occurs in the environment, or under prolonged exposure to water. A detailed applications procedure, as well as all the necessary tools and materials, is included with the FRE® Adhesive Kit for the user's reference. Note, we recommend that if the TriSeal™ gasket is removed or not incorporated into the conduit bell, the joint be adhesively bonded. The Bell and Spigot is not designed to withstand a significant pullout based on a friction fit joint only. Usage of the FRE® Adhesive Kit varies with diameter of the conduit - 18 joints per kit for 2" (51 mm), 10 joints for 4" (102 mm), and 6 joints for 6" (152 mm) conduit.

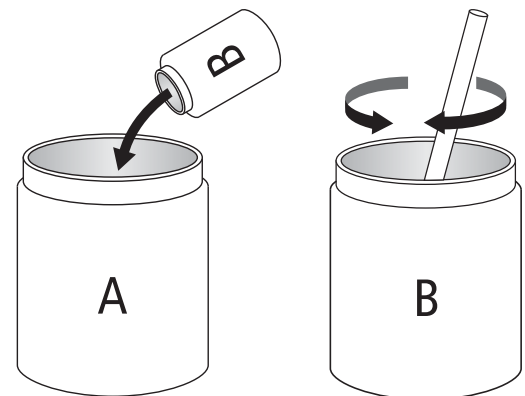
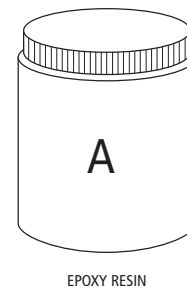
### 1. Preparation

- 1.1- All the surfaces to be bonded must be clean and dry.
- 1.2- The internal face of the bell (female end) and the external face of the spigot (male end) must be sanded just to remove the glossy finish with 80 grit sand paper.
- 1.3- To prevent contamination of the surfaces to be joined, avoid any further contact after cleaning.



### 2. Mixing the adhesive

- 2.1- For 68°F (20°C) or higher ambient temperatures, the glue pot can be kept at a lower temperature, from 59°F to 64°F (15°C to 18°C), with a such temperature the pot life will be a little bit longer.
- 2.2- For cold ambient temperature, from 10°F to 59°F (from -12°C to 15°C), the glue must be heated gradually up to a minimum temperature of 59°F (15°C) prior to mixing. This will assure an easier and more homogeneous mixture.
- 2.3- Take a resin pot (A) and a hardener small bottle (B).
- 2.4- Pour the hardener in the epoxy.
- 2.5- Attentively mix the resin and hardener for 2 minutes, will being careful not to leave any unmixed areas in the pot, be attentive at the bottom.

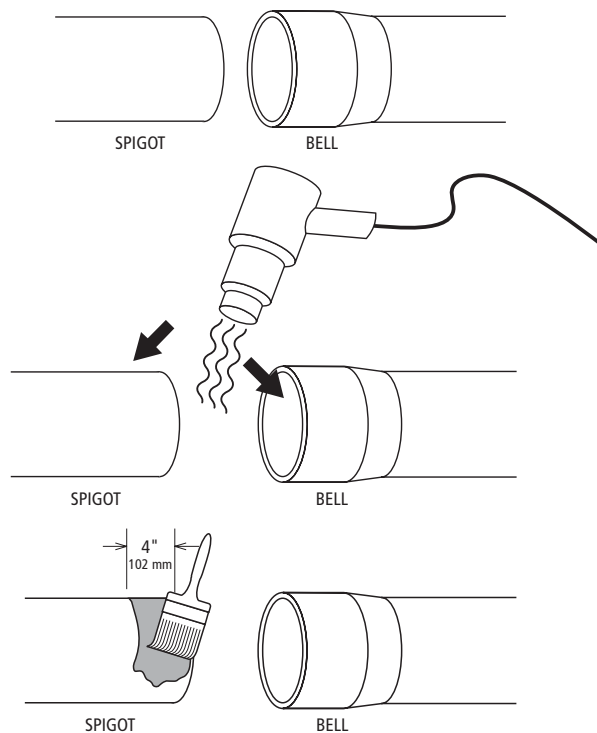


### 3. Apply the adhesive on the conduit

3.1- The two parts (bell and spigot) have to be side by side.

3.2- For a cold temperature, from 10°F to 59°F (from -12°C to 15°C) ambient temperature, the conduit surface to bond must be gradually heat up to a 59°F (15°C) minimum, before application of the adhesive. To heat up the spigot and the bell, use a heat gun, but be careful, the conduit must not be damaged with a flame or a too high temperature (maximum acceptable temperature: 194°F (90°C)).

3.3- When the conduit (bell and spigot) are hot enough, pour the mix and spread it on the spigot side with a brush, for 4" (102 mm) wide.



### 4. Bonding the bell inside the spigot

4.1- When the spigot is totally covered of glue, push it in the bell.

4.2- When the spigot is pushed inside the bell, smooth out the glue at the joint to form a chamfered edge at the bell.

4.3- Curing the joint

When the joint is made at a low ambient temperatures, from 10°F to 59°F (from -12°C to 15°C), the joint must be cure, before it is move (see below recommended cure times)

| Cure temperature | Cure time |
|------------------|-----------|
| 77°F (25°C)      | 24 hrs    |
| 194°F (90°C)     | 1.5 hrs   |

