



LAMINATING  
EPOXY

ADHESIVES

PROCESS  
EQUIPMENT

## Technical Data

# M1011 Resin/276 Hardener

## Toughened Black Adhesive

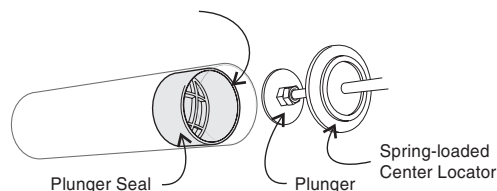
PRO-SET Adhesives are pre-thickened, two-part epoxy adhesives formulated for secondary bonding of laminated composites as well as steel, aluminum, cast iron, concrete, stone, and most wood species. PRO-SET Adhesives will bond these materials to one another in any combination. This versatility fits the requirements of the marine and composites industries, as well as the architectural, transportation, and civil engineering fields.

### MIXING

The two-cartridge system provides accurate and convenient dispensing of the adhesive. Manual or air-powered dispensing guns force resin and hardener through the static mixing wand and makes application of a uniform bead of mixed adhesive fast and easy. The M1011 Black Resin eliminates the color change available with the yellow 176 Resin, so exercise extra care to ensure thorough mixing.

### DISPENSING

1. Place the cartridge set in the gun—push the back of the cartridges against the spring-loaded center locator, and drop the front of the cartridge set into the vertical slot at the head of the gun. Push the plungers in to contact the back of the plunger seals inside the cartridge barrels. Be sure the plungers are seated against the centers of the seals and not caught on the seal lip.



2. Remove the locknut and plugs from the cartridge spouts. Equalize the level of resin and hardener in the cartridges by squeezing the trigger until a small amount of both resin and hardener are dispensed. This assures that the first adhesive through the mixing wand will be at the correct ratio. Mix the waste resin and hardener and dispose of it after it has cured.

3. Place the mixing wand over the spouts and secure it with the locknut. Cut the tip for the appropriate sized bead.

4. Dispense the adhesive as needed. **CAUTION:** The cartridge dispensing system is very reliable. However, if the adhesive is cold or is curing in the mixer, increased back-pressure may cause the adhesive to blow by the seal and be dispensed off-ratio. Dispense adhesive at 60° or above to assure the proper mix ratio. Refer to the cartridge labels or the Technical Data information for cure times and additional information. Refer to the MSDS for additional safety information. See the PRO-SET 176/276 literature for physical properties information.

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*August 2005*



# M1011/276

## APPLICATION

Apply the mixed adhesive to one or both mating surfaces of the joint. Spread the mixture evenly over surfaces. Use enough adhesive to ensure complete filling of any gaps along the joint. Allow the adhesive to cure thoroughly before stressing the joint.

The gel and cure times are affected by ambient temperature and epoxy mass, or bead thickness. Curing data is based on 72°F (22°C) ambient temperature. Warmer temperatures and a larger mass will increase cure speed, reducing working time. Cure time is reduced by approximately one half with every 18°F (10°C) increase in temperature. A smaller mass or cooler temperature will increase the cure time. Always dispense the adhesive at 60° F or above to assure the proper mix ratio.

We recommend testing any product using proposed materials and procedures to confirm working and curing characteristics under your shop conditions.

## HANDLING CHARACTERISTICS *(not for specification purposes)*

### Coverage

One cartridge set dispenses approximately 47 ft of 1/4" bead, or 17 ft of 1/2" bead.

<b>Mix Ratio</b>	<b>M1011:276</b>
by volume . . . . .	2:1
by weight . . . . .	2.24:1
<b>Mixed Density (lb/gal)</b>	<b>9.2</b>
<b>Pot Life of 100g mass @ 72°F</b>	<b>30 minutes</b>
<b>Dwell Time in mixer @ 72°F</b>	<b>45 minutes</b>
<b>Working Time* (1/2" bead) @ 72°F</b>	<b>90 minutes</b>
<b>Minimum cure temperature</b>	<b>60°F</b>
<b>Clamps off cure time</b>	<b>10 hours</b>
(1/16" bond line @ 72°F)	

\* Working time may be extended by applying adhesive to both surfaces of the bond line