



# SPECIFICATIONS

## RIGID EPOXY REPAIR 600

### SECTION 06630 STRUCTURAL EPOXY REPAIRS

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#### **PART 1 GENERAL**

##### **1-1 Description:**

The work in this section consists of epoxy for making structural repairs to wood timbers.

##### **1-2 Quality Assurance:**

##### **1-3 Submittals:**

- A. Submit manufacturer's product instructions and technical data sheet and product specifications.
- B. Submit a small sample of epoxy paste 600 to the Project Manager for approval prior to application.
- C. Submit manufacturer's Safety Data Sheet (SDS) for A, B & D components.

##### **1-4 Product Storage & Handling:**

- A. Deliver epoxies in manufacturer's original, unopened containers and store inside at room temperature or as recommended by manufacturer.
- B. Do not use epoxies which have exceeded manufacturer's shelf life.
- C. Epoxy stored below freezing (it won't freeze), should have a small sample mixed to test the cure prior to use.
- D. Follow safety precautions of epoxy as defined by manufacturer or product associations or OSHA. Observe good housekeeping practices when working with epoxies.
- E. Flammable solvents may not be stored in or brought within 20'/6m of an historic structure.
- F. Store washed sand and washed gravel in a dry and clean area.

##### **1-5 Project Conditions:**

- A. Epoxy applications are to be performed in favorable weather conditions.
- B. Wood that is to receive epoxy must be dry and have moisture content below 20% by weight at the time of application. Protect area from moisture until epoxy has completely cured.
- C. Area is to be secured from public use during epoxy application. Do not spray epoxy within 30 feet of public access. Secure areas as necessary to prevent intrusion of unqualified personnel.

##### **1-6 Cleanup:**

- A. Following application leave all areas free and clean of epoxy. Discard unused epoxy, containers, tools and paper towels in accordance with local, state and federal Environmental Protection Agency regulations.

#### **PART 2 PRODUCTS**

##### **2-1 Materials:**

- A. Epoxy Adhesive: Epoxy should be of a type which has regular and proven use for repairing and attaching damaged wood. Use a low viscosity rigid epoxy. Tensile strength must have a minimum value of 4000 psi. Epoxy must be easy to apply.
- B. Sand: Fines to be sharp washed aggregate conforming to ASTM C-33. Sand shall be free of organic matter.
- C. Pea Gravel: ASTM C-404. Washed and graded natural aggregate with not more than 5% passing the No. 8 sieve and with 95% to 100% passing the 3/8"/9.51mm sieve.
- D. Fumed Silica: See available products below.

## 2-2 Available Products:

- A. Epoxy Adhesive: ConServ Rigid Epoxy Repair 600  
ConServ Epoxy LLC [conservepoxy.com](http://conservepoxy.com)
- B. Fumed Silica: Thickening Agent 200D  
ConServ Epoxy LLC [conservepoxy.com](http://conservepoxy.com)
- C. Sand: Local source
- D. Pea Gravel: Local source

## 2-3 Mixes: Follow manufacturer's instructions.

- A. Avoid excessive working of epoxy which might cause settling or separation of aggregate from liquid epoxy.
- B. Allow epoxy to cure a minimum of 48 hours at temperatures above 60°F/16°C or for 72 hours at temperatures in the 50°F/10°C range.
- C. Do not mix epoxy in direct sunlight or allow epoxy that is curing to be exposed to direct sunlight at air temperatures above 60°F/16°C.

## PART 3 EXECUTION

### 3-1 Inspection:

In most cases it is necessary that all decay be removed to determine if structural integrity in the member has been lost or compromised. Actual parameters may vary for each situation. Verify conditions, proposed treatment and design criteria for individual structural repairs with the Project Manager.

### 3-2 Preparation:

- A. Refer to Section 06620 if timber is to be spliced to the structural repair area or if the structural repair contains fiberglass rebar for reinforcing.
- B. Provide temporary structural support and relieve structural load as necessary.
- C. Remove all wood decay. Attempt to remove decay down to good wood. Use a mechanics pick, chisel, drill, rotary rasp, etc. Verify standard for performance with Project Manager. If not visible, 3/16"/5mm diameter holes may be drilled into the decay zone approximately 1-1/2"/38mm apart for better penetration of the epoxy. Remove all wood fragments and vacuum out or blow out all dust.
- D. Protect treatment areas from moisture until all epoxy has cured.
- E. Protect vegetation and surrounding surfaces from epoxy spills or drips.

### 3-2 Installation/Application:

- A. First prime decayed surfaces with liquid epoxy consolidant without any aggregate or thickener. This may be applied by pouring, brushing or spraying (by experienced personnel only using professional equipment and following strict safety guidelines). Saturate the treatment area for a minimum of one hour duration.
- B. Mix epoxy liquid A&B then add thickening agent to make a paste. Alternately, add aggregate and a small amount of thickening agent according to manufacturer's instructions to make epoxycrete. Use epoxy at the lowest workable viscosity. For vertical or upside down applications use more fumed silica as a thickening agent. Epoxy must be thick enough to hold in all cavities until the epoxy cures. Avoid entrapping air during the mixing process. Read all manufacturer instructions, cautions, and technical data.
- C. The epoxy may be contained during the curing process by constructing temporary forms. Use clear packing tape or other release agent to inhibit the bond. Potters clay may be used to seal small openings or checks.
- D. Epoxy may be applied by pouring into upward facing cavities or forms or by pressing a thickened epoxy into vertical or downward facing cavities using a trowel or putty knife. For hard to reach areas use a typical builders caulk tube arrangement with extension tube if needed to inject epoxy into damaged areas.
- E. Epoxy and aggregate must not exceed 75°F/24°C at time of mixing and application. Ideally, wood should be within a range of 45°–90°F/7°–32°C during application. Ideally, the epoxy is not subjected to freezing temperature within 48 hours of application. Shade the substrate from direct sun in warm weather.

### 3-4 Cleanup:

Following application leave all areas free and clean of epoxy. Discard unused epoxy, containers, tools and paper towels in accordance with local, state and federal EPA regulations.

*“From hands-on professionals...For hands-on preservationists”*

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