



# 552 EPOXY MULTIPURPOSE STRUCTURAL ADHESIVE

## INSTRUCTIONS

**DESCRIPTION:** Epoxy 552 is packaged in 450 ml dual cartridges and discharged using the 900-300XL applicator tool. 552 is a medium viscosity, 2:1 mix ratio, room temperature or heat cure epoxy. This product has a room temperature working time of 60-90 minutes, and will cure virtually completely in 24 hours at 72°F. This product has very specifically sized glass beads added to it to ensure proper bond-line thickness, and prevent joint starvation from over-clamping. It can be sanded, drilled and painted, so squeeze out can be handled post cure. This 552 epoxy formulation will bond to wood, FRP, fiberglass, steel, aluminum and masonry that is clean and dry. The product is solvent-free with 100% reactive components and packaged in 450 ml dual cartridges.

**APPLICATION:** Epoxies work best on clean surfaces, so remove any dirt, oils and grease. Mix the two components by using a static mixer, or thoroughly by hand. Caulk or apply into area slowly to avoid air entrapment. Ensure that area to be bonded is completely filled and all parts wetted to obtain optimum performance.

1. Lubricate the applicator (1-2 drops oil) before the first use and after approximately every 10 cartridges, as described on the plastic direction tab which is attached to the tool.
2. **Epoxy 552 can be applied in a temperature range of 35°F-95°F. Prior to applying the epoxy, store the cartridges above 60°F for 1-2 days and or use one of our simple electric caulk warmers for a few hours to maintain warm cartridges even in cold weather.** If the cartridges are cold the epoxy will be harder to use and take longer to cure. When it is necessary to apply the epoxy faster, consider using a larger diameter static mixer. Always use a static mixer like ours that have 20-24 or more mixing elements to ensure parts A and B are well blended.
3. Some static mixers have a small exit hole for fine applications. Cut back the tapered tip for larger voids. This will also lessen back pressure within the cartridge. Leave the small lip or shoulder at the end of the static mixer to keep the mixing element inside.
4. Insert the cartridge into the applicator. Remove the retaining nut and single cap or double caps (depending on cartridge type) from the cartridge tip. Install a static mixer onto the end of the cartridge.
5. Slide the plastic retaining nut over the bell housing type mixer and tighten while making sure not to cross the threads. Direct thread static mixers such as our EURO thread 900-15 don't require a retaining nut.
6. Pull the trigger once or twice and observe the slow speed that this medium viscosity epoxy mixes and moves through the static mixer. This observation will help guide you to understand at what speed the epoxy 552 will travel without creating excess back pressure. **Don't over pressure the applicator. Pause as needed to allow the epoxy time to move through the static mixer and to minimize back pressure.**

### FIBERGLASS REBAR (GFRP) STRUCTURAL APPLICATION

7. When using fiberglass rebar for wood to wood connections, bore the holes 1/4"-3/8" larger than the rebar diameter, and 1/4"-1/2" deeper than the rebar length for each hole.
8. Clean out the holes by gravity, drill bit, vacuum, compressed air or other technique.
9. Verify (by dry fitting or careful measurement) that the rebar pieces fit and allow the wood joint to come together. Take the dry fitted components apart and remove the rebar.
10. Fill the static mixer with epoxy to just short of the tip and place it all the way into the back of the hole. If more length is needed, you can use a snug fitting vinyl tube extension (901-9, 901-11, 901-15 or similar product) tightly fit over the end of the static mixer. CSE sells 3 different ID sizes of tubing which can be matched up to fit securely over the corresponding OD of the 4 static mixers we sell.
11. Pull the trigger one or two complete strokes and wait until you feel the epoxy touching the end of the static mixer or tube extension before you continue. Slowly back out of the hole in small increments and repeat. The goal is to fill the hole from the backside out trying not to encapsulate the mixing tip or create air pockets.
12. Fill the hole to approximately 65% or 75% capacity depending on how much the holes were oversized and leave the remaining front portion of the hole empty.

13. Slowly insert the rebar by twisting it into the center of the hole and stay 1/4"-1/2" shy of the full depth.
14. If too much epoxy comes out of the hole, inject less epoxy into the next hole. If there is a void at the front of the hole, add epoxy around the rebar and fill the next hole more. Marking the depth of the mixer when the volume is sufficient can help as a guide to know when to stop applying epoxy if more holes need filling.

**DISPENSING NOTES:** Two-component epoxy adhesives require good mixing in order to get optimum strength and other properties. Use a 20-24 element static mixer to ensure full mixing and make sure cartridges are equilibrated as to dispensing before applying to parts. Run several ml of epoxy out of a new cartridge to get both sides equal in volume (plungers equal) and dispensing properly. Hand mix and discard this initial material. Alternately, if it will be used in a large area, caulk this initial material deep into the pocket where it will potentially cure given the surrounding epoxy will have a more balanced ratio. When starting a new cartridge, slowly pull the trigger only one or two full strokes at a time and allow the epoxy to move through the static mixer gradually and with very little pressure before pulling the trigger again. You should be able to see how this initial low pressure technique will help to get a more uniform mix of the initial A and B components which helps to minimize waste and promote a more complete blending of the first few ml of epoxy.

If hand mixing without the use of a static mixing tube, caulk the two components together and stir gently until a uniform color is created. Try to avoid air entrapment.

## TECHNICAL DATA

### Uncured Mixed Properties

Viscosity (RV7@2.5rpm)  
Color  
Odor  
Flash point  
Specific Gravity  
Shelf Life  
Mix Ratio

### Resin

190,000 cps  
Black  
mild  
>200°F  
1.07  
12 months at 72°F

### Hardener

210,000 cps  
Amber  
Slightly fishy  
>200°F  
1.01  
12 months at 72°F

2:1 by volume

### Curing Properties

Working Time  
Gel Time  
Set Time  
Effective Cure

### Room Temp (72°F)

60-90 minutes  
90 minutes  
120 minutes  
24 hours

### Heat Cure (200°F)

10 minutes  
15 minutes  
20 minutes

### Cured Properties

Shore D Hardness  
Operating Temp Range  
Chemical Resistance  
Moisture Resistance  
VOC content

70-73  
-60°F to 250°F for cured epoxy  
good  
very good  
less than 1%

### Physical Properties

#### Tensile Shear Strength, ASTM 1002

Steel	3,700 psi
Stainless steel 304	3,900 psi
Polycarbonate	820 psi
Acrylic	600 psi substrate failure
Aluminum, as received	3,350 psi
FRP	940 psi fiber tear
ABS	800 psi

#### Compressive Shear Strength

Wood with GFRP rebar	4,500 psi
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#### Impact, GMC transverse

Aluminum, as received	4.5 Joules/in 2
Steel, as received	5.0 Joules/in 2