Problem solver

This guide is designed to help identify and prevent potential problems you may encounter using WEST SYSTEM Epoxy. If the solutions described here do not resolve the problem, call the Gougeon Brothers technical staff, 989-684-7286.

PROBLEM	POSSIBLE CAUSES	SOLUTION
The epoxy mixture has not cured after the recommended cure time has passed.	Off ratio—too much or too little hardener will affect the cure time and thoroughness of the cure.	1. Remove epoxy. Do not apply additional material over non-curing epoxy. See Removing epoxy note, page 5. 2. Check correct number of pump strokes—use equal strokes of resin and hardener. DO NOT add extra hardener for faster cure! 3. Check for correct pump (5:1 or 3:1 ratio). 4. Check pump metering ratio (see pump instructions). See Dispensing, page 4.
	Low temperature—epoxy mixtures cure slower at low temperatures.	1. Allow extra curing time in cool weather. 2. Apply heat to maintain the chemical reaction and speed the cure. Raise the temperature above the hardener's minimum recommended cure temperature. (NOTE! Unvented kerosene or propane heaters can inhibit the cure of epoxy and contaminate epoxy surfaces.) 3. Use a faster hardener, designed to cure at lower temperatures. See Controlling cure time, page 3.
	Insufficient mixing.	1. Remove epoxy. Do not apply additional material over non-curing epoxy. See Removing epoxy note, page 5. 2. Mix resin and hardener together thoroughly to avoid resin rich and hardener rich areas. 3. Add fillers or additives *after* resin and hardener have been thoroughly mixed. See Mixing, page 4.
	Incorrect products.	1. Remove epoxy. Do not apply additional material over non-curing epoxy. See Removing epoxy note, page 5. 2. Check for proper resin and hardener. Resin will not cure properly with other brands of hardener or with polyester catalysts.
Bond failure.	Insufficient cure.	See above.
	Resin starved joint-epoxy has wicked into porous surfaces leaving a void at the joint.	Wet out bonding surfaces before applying thickened epoxy. Re-wet very porous surfaces and end grain. See Two-step bonding, page 7.
	Contaminated bonding surface.	Clean and sand the surface following the procedure on page 6. Sand wood surfaces after planing or joining.
	Bonding area too small for the load on the joint.	Increase bonding area by adding fillets, bonded fasteners or scarf joints.
	Too much clamping pressure squeezed epoxy out of the joint.	Use just enough clamping pressure to squeeze a small amount of epoxy from the joint. See Clamping note, page 9.
Clear coating turned cloudy.	Moisture from condensation or very humid conditions reacts with components in uncured hardener.	1. Apply moderate heat to partially cured coating to remove moisture and complete cure. See out-gassing caution, page 4. 2. Use 207 Hardener for clear coating applications and for bonding thin veneers where epoxy may bleed through to the surface.
	Entrapped air from aggressive roller application.	1. Apply coating at warmer temperature—epoxy is thinner at warmer temperatures. 2. Apply epoxy in thin coats. 3. Apply moderate heat to release trapped air and complete cure. See Caution, top of page 4.
Waxy film appears on surface of cured epoxy.	Amine blush formation is a typical result of the curing process.	1. Blush is water soluble. Remove with water. See Special preparation—Cured epoxy, page 6. 2. Use 207 Hardener. Blush is not discernable with 207 Hardener.

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Runs or sags in coating.	Epoxy applied too thickly.	1. Use 800 Roller Covers and roll the coating out into a thinner film. A thin film will flow out much smoother than a thicker film after it is tipped off with the foam roller brush. 2. Warm the epoxy to thin it or apply the coating at a warmer temperature. See Epoxy barrier coating, page 12.
	Coating curing too slowly.	1. Apply the coating at a warmer temperature. 2. Warm the resin and hardener before mixing to speed the cure in cool weather. 3. Switch to a faster hardener if possible. See Controlling cure time, page 3.
Fairing compound (epoxy/407 or 410 mixture) sags and is difficult to sand.	Fairing material not thick enough.	Add more filler to the mixture until it reaches a "peanut butter" consistency—the more filler added, the stiffer and easier it will be to sand.
Thick fairing compound (epoxy/407 or 410 mixture) sags.	Fresh epoxy wet-out won't support weight of fairing.	Allow the wet-out coat to gel before applying the fairing material to vertical surfaces. See Fairing, page 10.
Paint, varnish or gelcoat will not set up over epoxy.	Epoxy not completely cured.	Allow the final epoxy coat to cure thoroughly. Allow several days if necessary for slow hardeners at cooler temperatures. Apply moderate heat to complete the cure if necessary. See Controlling cure time, page 3.
	Paint incompatible with epoxy.	1. Use a different type of paint. Some paints and varnishes may be incompatible with some hardeners. If unsure, test for compatibility on a coated piece of scrap material. 2. Use 207 Hardener. It is compatible with most paints and varnishes.
	Epoxy surface not thoroughly prepared.	Remove the amine blush and sand the surface thoroughly before applying paints or varnishes. See Final surface preparation, page 12.
Epoxy became very hot and cured too quickly.	Batch too large, or left in mixing pot too long.	1. Mix smaller batches. 2. Transfer the mixture to a container with more surface area, immediately after mixing. See Controlling cure time, page 3, Dispensing and Mixing, page 4.
	Temperature too warm for the hardener.	Use 206 Slow or 209 Extra Slow Hardener in very warm weather.
	Application too thick.	Apply thick areas of fill in several thin layers.
Bubbles formed in coating over porous material (bare wood or foam).	Air trapped in the material escapes through coating (out-gassing) as the material's temperature is rising.	1. Coat the wood as its temperature is dropping—after warming the wood with heaters or during the later part of the day. 2. Apply a thinner coat, allowing air to escape easier. 3. Tip off the coating with a roller cover brush to break bubbles. See Caution, top of page 4.
Pinholes appear in epoxy coating over abraded fiberglass or epoxy.	Surface tension causes epoxy film to pull away from pinhole before it gels.	After applying epoxy with an 800 Roller Cover, force epoxy into pinholes with a stiff plastic or metal spreader held at a low or nearly flat angle. Re-coat and tip off coating after all pinholes are filled.
Fisheyeing in coating.	Contamination of the coating or surface or improper abrasion for the coating	1. Be sure mixing equipment is clean. Avoid waxed mixing containers. 2. Be sure surface is properly prepared. Use proper grit sandpaper for the type of coating you are applying. (See paint or varnish manufacturer's instructions for proper surface preparation.) After surface is prepared, avoid contamination—fingerprints, exhaust fumes, rags with fabric softener (silicone). Coat within hours of preparation. After wet sanding, rinse water should sheet without beading (beading indicates contamination). Wipe with appropriate solvent and re-rinse until rinse water no longer beads. Contact the Gougeon technical staff if you have additional questions.
Hardener has turned red after several years storage.	Moisture in contact with hardener and metal container.	Red color is a normal condition. It will not affect epoxy handling or cured strength. Avoid using hardener for clear coating or exposed areas where color is not desired.