

Tin-Zinc-Lead Galvanizing Repair Solder

HUB Industrial Supplies' galv bar solder has been the structural steel industry standard for galvanizing repair for years. Our galv bar is simple, effective and easy to use, in both manufacturing and field applications. Just like the original galvanizing, this galv bar forms a molecular bond to the steel for a seamless protective barrier. HUB's galv bar exceeds performance standards as specified by ASTM standard A780-09 for repair of galvanized coatings.

HUB galv bar has been designed to accomplish three important objectives:

- Provide excellent cathodic and barrier protection, far superior to Zinc paints and alternative solders in ductility, adhesion and longevity.
- Allow easy application at low temperatures with any heat source.
- Provide the most cost-effective solution to galvanized coating repairs.

Benefits and Uses

As a Galvanizing Repair Solder

Galv bar has a broad slushy range of 450°F to 600°F (232°C to 315°C). When heated, the slurry can be shaped and spread easily to blend seamlessly with the existing galvanized coating. The slurry can be built to a substantial thickness, even on vertical surfaces.

As a Repair Rod for Hot Dip Galvanizers

Small defects in the surface of freshly galvanized steel can be easily repaired with galv bar solder. Typically, residual heat is sufficient to melt and apply the bar. The high zinc content provides excellent cathodic protection and the repair blends and bonds with the original galvanizing.

As a Repair Rod for Fabricators and Welders

In the shop and field, galvanized surfaces are often damaged by cuts and welds. Due to its moldable nature, HUB's galv bar can be applied to a substantial thickness in almost any orientation. The solder penetrates deep into cracks and imperfections to provide a seamless protective barrier.

Galv Bar Physical and Mechanical Properties			
Melting Range	450 to 600°F / 232 to 315°C	Elongation	18% in 2 inches
Tensile Strength	4,900 psi	Linear Expansion Coefficient	25.4 x 10 ⁶ / °C
Compression Strength	6,000 to 7,000 psi	Electrical Conductivity	20.9 (%IACS)
Shear Strength	4,000 psi	Thermal Conductivity	.097 cal / cm-sec-°C
Impact Strength (Izod)	18 Joules	Flux	Copper Flux
Ductility	Good	ASTM Specifications	Exceeds A780-09
Density	.3353lbs./cu. in.		

Instructions for Galvanized Surface Repair with Galv Bar

1. Pre-clean the parent metal using a stainless steel (SS) brush, emery cloth, sandblasting, etc. A clean SS brush may be used to pre-clean the area, and then spread the molten solder during repair. To ensure even protection, surface preparation should include roughing up the surrounding undamaged galvanized coating. Breaking the oxide layer by agitation is an important key to successful galv bar application.
2. If the area to be repaired includes welds, all weld flux residue and weld spatter shall be removed by wire brush, chipping, grinding or power scaling.
3. Use a soft flame, heat gun or soldering iron to heat the parent metal repair area to at least **600°F/315°C**. **Do not heat the surface over 750°F/400°C or allow the surrounding galvanized coating to burn.** If you use a direct flame, please keep it moving. A direct flame held on the repair area is likely to overheat the solder. Wire brush the surface during heating. Pre-flux if there is an adhesion problem. NOTE: Most applications don't require flux.
DO NOT DIRECTLY HEAT THE SOLDERING ROD!
4. Hold the torch tip 4 to 6 inches away from the parent metal. If it is necessary to apply the flame directly to the rod to get it started, pull the torch tip back even farther from the work surface and keep it moving.
5. Drag the rod over the area to be soldered, until it begins to flow. **ONCE THE ROD FLOWS, STOP APPLYING THE HEAT!** Deposit the desired thickness of galv bar. The stainless steel brush works well to spread the solder and ensure it is adhering. If additional layers are needed, continue to drag the rod over the area. **Bring back the heat only to keep the surface, NOT the rod, hot enough to push the solder around to where you want it.**
6. Sometimes it is necessary to heat the tip of the rod with the flame to help start the solder flow onto the repair area. **DO NOT HEAT THE ROD TO THE MELTING POINT!**
7. **Blend the repair into the undamaged galvanized coating.** The most common oversight in repairing galvanized is failing to feather the galv bar layer into the undamaged galvanized coating. If they don't join in sufficient thickness to form a seamless barrier (skin), corrosion will occur right where they meet.
8. Observe the solder deposit. The solder should bond smoothly. **DO NOT OVERHEAT!** The solder rod will melt if overheated, but will not bond properly. Spread the solder deposit evenly over the repair area. A stainless steel brush works well for this step.
9. If you stopped soldering and want to apply more solder or flow out the deposit more, let the area cool below the solid temperature of 390°F/200°C, and reheat. The existing galv bar solder will help the bonding process, whether adding more solder or just flowing out the previous deposit. If substantial time has elapsed since the original galv bar was applied, pre-clean the repair area again to remove any oxide coating that will impair bonding. Again, a stainless steel brush works well for this step.
10. Smooth the repair area and remove any excess galv bar solder with a wire brush.
11. Repeat these steps to build up additional layers of galvanic protection.