

How To Use Patcher® To Repair Damaged Metal



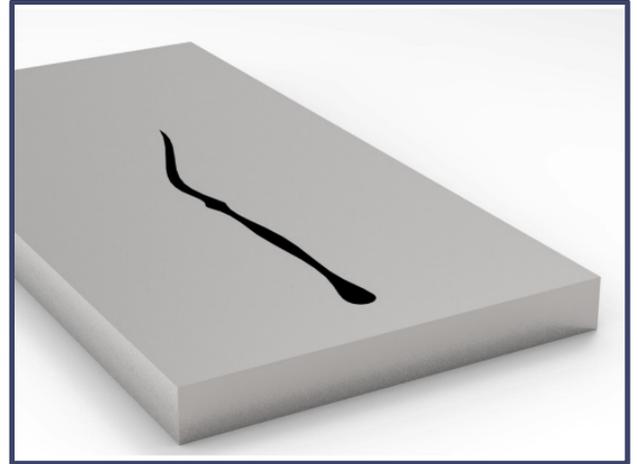
Kevlar® Epoxy Metal Repair Compound

Problem Area:

This “How-To” covers repairs for damaged metal not due to stress or fatigue. This procedure will work for filling and rebuilding damaged metal surfaces.

These repairs are commonly found in pump casings, bearing housings, tanks, valve bodies and gearboxes.

For high temperature equipment, use Patcher® HT



Make sure your surface is ready!

Step One: Clean The Surface



Patcher® is a surface tolerant epoxy and will bond to wet and oily surfaces and underwater. This does not mean some surface preparation is not necessary.

If the conditions permit, clean the surface with a cleaner/degreaser. Ideally, the surface would be dry, free of leaks, dirt, rust and other coatings..

If the surface is extremely oily, a heat gun may be used to sweat out the oil. Patcher® will still bond to the surface, but attempt to remove as much oil as possible for maximum adhesion.

If applying underwater, try to wipe clear all deposits on the surface.

Step Two: Create An Anchor Profile

An anchor profile will create a surface for the epoxy to “cling” to for maximum adhesion.

For best results, abrasive blast the surface with an angular grit like silicon carbide or aluminum oxide. When this is not possible, use a coarse grinding wheel. An anchor profile of 0.003 to 0.005 inches (75-125 microns) is desirable. If neither of these methods can be performed, then coarse sandpaper or a metal file can be used.

If applying underwater, a metal file or brush is recommended.



For strength, reinforce with a metal patch. Be sure to clean and prepare as noted above!

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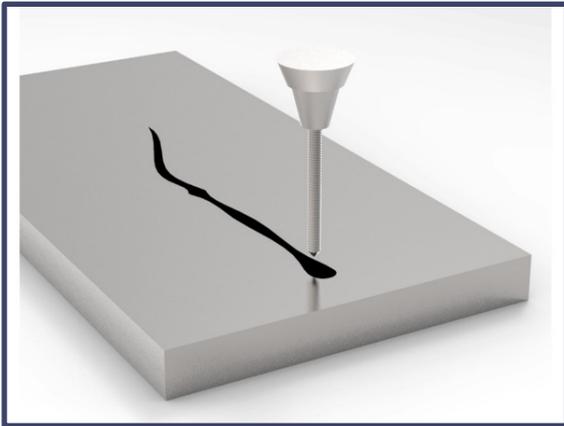
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Repairing the Damage With Patcher® !

Step One: Stop The Damage



- ❑ Stop any leaking by turning off the flow or fitting with a peg or screw. Use a crack detection system to highlight all cracks
- ❑ At the end of each crack, drill holes that are about 1/8" larger than the crack.
- ❑ If the crack is longer than 3 inches, drill holes alongside the crack at one inch intervals and insert studs into these holes. Cut the studs flush to the casing.

Step Two: For Better Bonding



- ❑ Use an abrasive wheel to drill or edge grind in order to "Vee" out the cracked area. If there is corrosion damage, open the crack to where the original metal thickness is free of corrosion. Clean and prepare the surface as per surface preparation instructions.

Step Three: Repair The Damage



To ensure maximum adhesion, first pre-coat the area by rubbing the material thoroughly into the repair area to fill all the crevices. This is called "wetting"

- ❑ Using a trowel, force material into the damaged area and overlap by 1 inch on all sides.



- ❑ Reinforce the repair with a metal patch or fiberglass mesh or wire screening. If using mesh or wire, imbed into the epoxy, then apply another layer about 1/16" thick over and trowel until smooth.
- ❑ If using a metal patch, apply epoxy to the reinforcement patch, and then press firmly into position over the already filled area. Trowel the excess material to smooth the edges or completely cover the patch.



See Product Data Sheet for cure times. To force cure, the area should be heated with a heat gun. Do not leave unattended. Do not use an open flame.

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