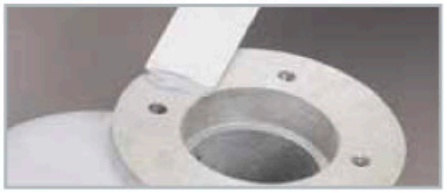
SURFACE PREPARATION

The Key to Successful Repairs

Proper surface preparation and thorough cleaning are essential for the successful application of Devcon repair products and protective coatings.



General Surface Preparation

In general, the following steps will help you properly prepare a surface prior to applying Devcon products:

1) Make sure the surface is completely dry. Moisture will adversely affect the strength of the bond to the surface.
2) Remove all surface contamination (paint, rust, and grime) by abrasive blasting, sanding, or other mechanical means.
3) Degrease with Devcon Cleaner Blend 300.
4) Abrade the surface to roughen it and create a surface profile.
5) Use the appropriate Devcon primer.

For detailed surface preparation procedures, refer to the appropriate substrate category.

Metal

To properly prepare a metal surface:

1) If the surface is oily or greasy, degrease it with Devcon Cleaner Blend 300.
2) Abrasive-blast the surface with 25-40 grit (or coarser) to produce a good surface profile. If you cannot abrasive-blast the surface, use a 60 grit or coarser sandpaper to achieve a similar result.
3) Immediately coat the metal surface with Flexane® FL-10 Primer to prevent it from rusting.
4) Make repairs as soon as possible after blasting the substrate to avoid oxidation or flash rusting.

Aluminum Surfaces

Oxidation on aluminum surfaces reduces epoxy adhesion. This oxidation film must be removed before repairing aluminum with Devcon Metal Repair Epoxies.

To properly prepare an aluminum surface:

1) Remove oxidation by mechanical means such as grit-blasting or by chemical means such as acid etching.
2) Follow the General Surface Preparation guidelines.

Rubber

To properly prepare a rubber surface:

1) Abrade the surface using a rubber rasp or a grinder with a wire wheel to produce a good surface profile. (Oils and contaminants imbedded in the rubber surface are typically released in this process.)
2) Remove all oil and grease from the rubber surface with Devcon Cleaner Blend 300 and an abrasive pad.
3) Wipe the surface with a clean, lint-free cloth continuously until black residue is no longer picked up by the white cloth.
4) Prime the surface as follows:

   Rubber to metal: Coat all metal surfaces (including stainless steel and aluminum) with two coats of Flexane® FL-10 Primer. The primer will significantly improve adhesion of Devcon products to metal.

   Rubber to metal (for immersion service): Coat any metal that will be immersed in an aqueous solution with Flexane® FL-10 Primer and Flexane® FL-20 Primer. First apply the FL-10 Primer and let dry for 60 minutes. Next, coat with the FL-20 Primer. Let dry for 30 minutes before applying the Devcon product.

   Rubber to rubber: Coat all gum rubbers, neoprene, or cured urethanes with a thin coat of Flexane® FL-20 Primer. For ultimate peel strength, use FL-40 Primer (on rubber only).

   Rubber to concrete: Coat concrete with Flexane® FL-20 Primer. Multiple coats may be necessary because concrete is very porous. Let the primer dry for 30 minutes between coats.

   Rubber to wood or fiberglass: Coat these surfaces with Flexane® FL-20 Primer. Soft woods will require a second coat due to their absorption characteristics.

   When bonding rubber to other surfaces, contact Devcon Technical Service for a recommendation on primers and surface preparation procedures.





Concrete

To properly prepare a concrete surface:

1) Degrease the surface with Devcon Cleaner Blend 300 or any water-based emulsifying cleaner and rinse thoroughly. Multiple cleanings may be necessary. Power washers or steam cleaners are very effective and can reduce the number of passes needed to clean the surface. Let the surface dry thoroughly before proceeding.
2) Remove any cap-curing agents that were applied to the concrete when it was poured. These agents form a dense, impenetrable finish, making it almost impossible for coatings to adhere to them.
3) Shot blast (Blastrac) the concrete to create a porous surface profile. This will improve surface "wetting" and coating or repair product adhesion.

Wet Surfaces

In general, Devcon repair products and protective coatings will not adhere to wet surfaces.

To properly repair a wet surface:

1) Review the General Surface Preparation guidelines.
2) Thoroughly dry the surface. (If you are using Devcon Underwater Repair Putty (UW), refer to Underwater Surfaces section.)
3) Stop all leaks or seepage as follows:
   - Shut off the flow or pressure;
   - Fit a wooden peg or a sheet metal screw into the hole; or
   - Stuff wax, cork, plumber's caulk, Mortite, or a cloth into the opening.

   If the leak is caused by corrosion, the sidewall might be weak. Open the orifice until sound metal is exposed and the wall is thick enough to be plugged.
4) Remove surface condensation (sweating) or dampness with a heat gun or similar device.

Underwater Surfaces

To properly prepare an underwater surface:

1) Remove all dirt, barnacles, flaking paint, or algae/seaweed from the surface.
2) Wipe the surface with a clean cloth to remove any film. Although you cannot degrease underwater, wiping and turning a clean cloth will often remove any film from the surface.
3) Abrade the surface if possible. (Use a file or other mechanical means.)
4) Remove oxidation by mechanical means such as high-pressure water or grit-blasting, or by chemical means such as acid etching.

Devcon Technical Service:

If you have questions, please contact Devcon Technical Service:

1-800-933-8266