



MADISON CHEMICAL INDUSTRIES INC.

APPLICATION INSTRUCTION BULLETIN

FERROGRIP™

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INTRODUCTION

FerroGrip is a user-friendly surface preparation compound which, when applied to steel surfaces, dissolves mill scale, corrosion, oily films and other contaminants. This proprietary product is a foamy gel that is easy to use, water soluble and environmentally-friendly. It contains a rust-dissolving agent, a powerful degreaser, an industrial-grade surface penetrating compound and Madison's proprietary AP-50 Adhesion Promoter. All of these ingredients work to create a surface which is pristine and ready to be protected by any coating which also contains AP-50. FerroGrip, when mated with the appropriate Madison topcoat (see next paragraph), will work synergistically to create adhesion comparable to that achieved with near-white sandblasting. In this way, all the hassles associated with abrasive blasting are avoided: the capital and operating costs, the disposal problems, the logistical complexities and the inconsistent results, just to name a few.

For light-to-medium duty applications, topcoat FerroGrip with one of Madison's water-dispersible technologies such as the FusionClad series of acrylic and polyurethane primers and topcoats. For medium to heavy duty, prime the prepared surface with AlumiZinc "S", our next-generation Zinc Rich Primer, then finish off in the shop or at the job-site with the interior or exterior grade Madison topcoat of your choice, for example CorroCote "S" or AcrylaThane. Alternatively, you can simply apply two coats of AlumiZinc "S" for a galvanized look. All of these products are paint-like and are available with the same AP-50 Adhesion Promoter that is in FerroGrip. For rapid turnaround or for severe service conditions, many of Madison's plural component, instant-setting coatings now come with AP-50 as a standard ingredient, so as to work in conjunction with FerroGrip as a one-coat high-build system. Depending on the topcoat system chosen, the finished product is suitable for immersion and embedded service as well as atmospheric service.

This Application Instruction Bulletin refers to the gel version of FerroGrip. A low viscosity version is also available, ideal for spraying hard-to-reach areas such as electrical transformer radiators or for dipping small parts.

STORAGE AND HANDLING OF PRODUCT

FerroGrip is a non-hazardous and environmentally "green" product. Store in tightly sealed polyethylene or polypropylene (NOT metal) containers. This material is corrosive to Aluminum only. Do not store at temperatures above 50°C/120°F. Do not freeze. The recommended shelf life of the material is 12 months, but, when stored indoors, should remain acceptable for up to 2 years. In the event that the material is stored beyond 12 months, a Madison Representative should be consulted to determine usability.



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APPLICATION EQUIPMENT

Plastic pump-up style hand sprayers (such as a garden weed sprayer) are suitable for occasional use. For commercial usage a pressure pot with a spray gun attachment is recommended. The pressure should be kept low (40-50 psi) and use a 0.015"-0.019" spray tip. An acceptable alternative to the pressure pot is a 1:1 transfer pump and a regulator set to 40-50 psi. Do not increase pressure in an attempt to atomize FerroGrip, as it may run off the surface; the goal is to spatter it on to the surface in such a way that it does not run.

SURFACE PREPARATION

(A) For Atmospheric (Non-immersion) Conditions

Bare Steel – File or grind any burrs, weld spatter or other surface roughness that may protrude through the subsequently-applied coating. Welds and other sharp edges should be rounded. Remove loose rust and scale by manual or power wire brush. Then apply FerroGrip as detailed in the Application Procedures section below, followed by the Madison polymer coating of your choice.

Previously Painted Surfaces - Remove loose paint (sanding, scraping, grinding). Abrade entire surface with coarse sandpaper or equal to achieve a surface profile (also called "anchor pattern"). Then apply FerroGrip as detailed in the application section below.

(B) For Severe Service, Embedded or Immersion Conditions

All Surfaces – FerroGrip is now approved for some immersion conditions (e.g., water at moderate temperatures). Proceed as above. As always, blasting is also a suitable method of surface preparation and is the preferred method of surface preparation when remediating an existing failed coating system or there are other reasons why FerroGrip is not able to reach the substrate in order to dissolve corrosion. Also, abrasive blasting is recommended where the service conditions involve aggressive fluids or elevated temperatures. Check with your Madison rep for details.

APPLICATION PROCEDURE

Do not apply FerroGrip at temperatures below 10°C/50°F, as it works very slowly at cold temperatures. FerroGrip should be applied full strength; do not dilute. Prior to use, FerroGrip must be thoroughly stirred. DO NOT DILUTE. Use a power agitator such as a Jiffy mixer. Spray apply FerroGrip to a thickness of approximately 6-8 mils for maximum effectiveness, and allow it to penetrate into the surface for at least 30 minutes (for immersion service, leave it for 45 to 60 minutes). We do not recommend application by brushing or rolling as it is difficult to achieve the thickness that is necessary for best results. Avoid applying FerroGrip in direct sun or to hot metal as it may dry out before completely dissolving the rust and mill scale. If it does dry out, apply another light coat to keep it moist. Rinse with a high pressure stream of straight tap water using a power washer with a rating of 1,000 psi or higher. Thoroughly and immediately dry with clean compressed air to remove all traces of moisture. Once dried, apply Madison recommended primer and topcoat. For light to medium duty, water-dispersible systems such as FusionClad are most often used. For medium to heavy duty service, solvent dispersible systems such as AlumiZinc "S" (Zinc Rich Primer) and AcrylaThane (near-automotive grade topcoat) are preferable. Indoors or where chemical fumes are present, consider CorroCote "S" (formulated for superior chemical resistance). For high speed applications, use a fast set plural component product from our CorroCote II family. Make sure the one you specify contains our AP-50 Adhesion Promoter, which works synergistically with FerroGrip.

Some products contain AP-50 as a standard ingredient. With most others, it can be specified as an optional extra. Speak to your Madison representative for recommendations. After being dried as above, metal should be coated before it starts to flash rust; this will vary, but is typically 4 to 8 hours after FerroGrip removal at moderate temperature and humidity. Equipment should be well rinsed after use and the tips cleaned to prevent build up and plugging.

NEUTRALIZING RINSE WATER

Runoff is safe for ground absorption or sanitary sewer disposal (assuming the surface being prepared is not contaminated with a hazardous substance requiring special disposal precautions). Note however, that the rinse water will have a pH of about 4 to 5. If further neutralization is required by local regulations, it is recommended to add 5% by volume of baking soda or caustic soda to the rinse water prior to power washing. Alternatively, gather the rinse water in a containment chamber and neutralize with soda prior to flushing into the municipal sewer system.

TOPCOATING WITH NON-MADISON COATINGS

FerroGrip is intended to work synergistically with coatings that contain Madison's proprietary AP-50 Adhesion Promoter. You may wish to explore using it with other brands of coatings; results will be less satisfactory (lower adhesion and lower resistance to undercutting, for example) and we cannot guarantee that this will work with coating systems from other manufacturers, but the result may be adequate for your particular needs.

HEALTH AND SAFETY

FerroGrip is non-hazardous and environmentally "green". It can be used indoors or out. Take all normal precautions associated with handling mild industrial chemicals and operating a pressure washer; for example wear safety glasses or goggles, rubber gloves and protective clothing. If swallowed, do not induce vomiting, give 3-4 glasses of water to dilute and get immediate medical care. Consult the MSDS for detailed information.

NOTE: the words Madison, FerroGrip, AP-50 Adhesion Promoter, FusionClad, AlumiZinc, CorroCote and AcrylaThane are exclusive trade marks of Madison Chemical Industry Inc.

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