



MADISON CHEMICAL INDUSTRIES INC.

APPLICATION INSTRUCTION BULLETIN

ACRYLATHANE® 55 & 85

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SCOPE

This Application Instruction Bulletin applies to Madison's AcrylaThane 55 and AcrylaThane 85, both of which are 1:4 ratio aliphatic polyurethane coatings. These two products use similar resins but AcrylaThane 55 has lower solids, a longer pot life (about 4 hours) and a satin finish, while AcrylaThane 85 has higher solids (less solvent), a pot life of 1 to 1½ hours and a higher gloss.

STORAGE AND HANDLING OF PRODUCT

These products are not paints. They consist of resins that will react with humidity and moisture. Store material in a warm, dry and enclosed area that is out of direct sunlight and well ventilated. Care should be taken in handling of coating containers to prevent puncture, freezing, inappropriate opening or other action that may lead to product contamination. Material should be stored above 50°F (10°C). The recommended shelf life of the material is 6 months, but some products may remain acceptable for up to two (2) years. Should the material be stored beyond 6 months, a Madison Representative should be consulted to determine usability.

APPLICATION EQUIPMENT

Airless Spray – At room temperature (see above), this product has a paint-like viscosity. Its high solids content (low solvent) is achieved by using extra resin, not by adding fillers that negatively affect sprayability. The most common method of application is airless spray. Ideal pressure is in the 2,000 to 2,500 psi range. A Graco Bulldog pump (30:1 or 45:1) configuration is available and is common for this application. Start with a .015" tip having a medium-to-wide fan pattern; a reverse-a-clean tip is desirable. Remember that larger tips increase speed of application but cause dramatic increases in waste and overspray.

Other Forms of Application – These products may also be applied with some conventional and air-assisted airless systems, electrostatic systems and pressure pot systems. For conventional spray, air must be bone dry. Brush or roller may also be used to apply aliphatic coatings in the same manner as oil-based paint. Once applied, however, they become tacky very quickly; therefore, brush painting of larger structures will likely result in poor aesthetics.

The operator of the equipment should be trained as per Madison's Approved Applicator Training Program. For further details on the required configuration of the heated airless spray unit or for specialized application equipment, please consult a Madison Representative.

SURFACE PREPARATION

General – This section applies to ALL substrates. The surface must be completely dry and free of any traces of oil, grease, dust, and other possible contaminants. If you will be preparing the surface with full strength Madison FerroGrip Surface Conditioner / Adhesion Promoter, this will automatically remove all grease, oxidation and contaminants as part of the conditioning process. If you are planning some other form of surface



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preparation such as power tool cleaning or abrasive blasting, grease and similar contaminants must first be removed by solvent wiping or by scrubbing with hot water and an industrial grade cleaner/degreaser or 2 to 5% FerroGrip added or by hot water high-pressure wash (1,000 p.s.i. or greater) with an injection of industrial cleaner/degreaser or FerroGrip. Do not proceed with application of product if dew or condensation is present or if stormy weather is imminent. Humidity over 85% may impair adhesion and/or ruin the finish. Check the weather channel or online for dew point temperature and humidity. Make sure that ambient temperature is at least 5°F (3°C) above dew point.

On previously painted surfaces, remove loose coating with hand or power tools, then test for compatibility and adhesion. If prior coating lifts or appears to be incompatible in any way or if adhesion is poor, completely remove prior coating. When using over an aromatic base coat or primer, apply within the recoat window or roughen prior coating with coarse (60 or 80 grit) sandpaper to achieve a 2.0 mil (50 micron) profile in the prior coating.

When using AcrylaThane 55 or 85 as the topcoat of a multi-coat system, apply within the specified recoat window or roughen prior coating with medium (80 to 100 grit) sandpaper before proceeding with this product.

Galvanized metal surface – Ensure that all weld splatter, heavy oxidation and other surface irregularities are removed with hand or power tools, as appropriate. For all galvanized metal purposes, including severe service, no blasting is required. Instead, soak the surface with Madison GalvaGrip Surface Conditioner / Adhesion Promoter. This compound will remove oxidation and contamination and will deposit a layer of Madison AP-50 Adhesion Promoter. After Madison GalvaGrip is removed by high pressure water wash and surface has been force dried, it is completely ready to be coated. See Application Instruction Bulletin for GalvaGrip. For aggressive environments, abrasive blasting is an accepted alternate method of surface preparation. For light to medium duty atmospheric service, power tool cleaning may be adequate; evaluate your needs before proceeding. In all cases, prime with Madison CorroPrime (light to moderate duty) or Madison Alumizinc "S" (heavy duty) prior to applying AcrylaThane to yield best long term results. Both primers contain AP-50 Adhesion Promoter and will adhere tenaciously to surfaces prepared with GalvaGrip. Welds and corners require stripe coating (i.e., pre-coating of those areas).

Non-Galvanized metal surface – Ensure that all weld splatter, heavy oxidation and other surface irregularities are removed by scuffing surface with hand or power tools, as appropriate. The most cost effective method of preparation is to apply FerroGrip Surface Conditioner / Adhesion Promoter as detailed in its Application Instruction Bulletin. On steel, copper and aluminum, FerroGrip will eliminate the need for abrasive blasting. For light duty, scuffing entire surface as above may be adequate as an alternative to FerroGrip. For heavy duty, abrasive blasting is an appropriate alternative to FerroGrip. For critical areas where ponding conditions or immersion service will occur (e.g. swimming pools and holding tanks), FerroGrip is not recommended; instead, a near-white blast with a minimum 2.0 mil profile is recommended. Either way, the blasting medium should be a sharp angular material such as sand or steel grit. The use of steel shot is recommended. In all cases, priming as described in above paragraph will yield best long-term results. For light to moderate duty service, AcrylaThane 55 & 85 is considered self-priming and can be applied directly to the substrate without priming. For direct-to-metal applications, a special version of AcrylaThane 55 & 85 is available which contains AP-50 in the formula. Welds and corners require stripe coating (i.e., pre-coating of those areas).

Concrete, atmospheric service – Concrete must be fully cured. The use of FerroGrip will eliminate the need to sandblast or acid etch the concrete. After removing "spent" FerroGrip by power wash or floor scrubber, allow surface to dry before coating. Depending on porosity, concrete may need to be filled. Where bug-eyes exist, Madison PrepCrete should be used to fill same before proceeding. To fill smaller holes, use a thin mixture of PreCrete or MG-220 Epoxy Sealer/Coating. On concrete floors, use MG-201 Penetrating Epoxy Sealer for best long term results. As a less-desirable alternative, thin first coat of AcrylaThane 55 & 85 with 10–20% VR-2 Viscosity Reducer before applying to prepared concrete surface. Use only Madison VR-2 Reducer, as any other reducer or solvent, whether from Madison or third party, will ruin the product.

Concrete - immersion service – For immersion service, previously painted concrete must be abrasive blasted. In all cases, seal concrete with MG-201 penetrating epoxy before applying AcrylaThane 55 & 85. For rough or pitted concrete floors, a self-leveling base coat, such as MG-220 may be used. Vertical surfaces such as poured-in-place concrete and concrete block can usually be coated as-is; however, for a pinhole-free result, fill bug-eyes with a cementitious grout such as Madison PrepCrete, let dry for 2 or more days and then coat the entire surface with MG-201 or heavier-bodied MG-220 self-priming base coat before applying AcrylaThane 55 & 85.

Wood – On most new wood, a thorough sanding with 80 to 100 grit sandpaper is required to open up the pores of the wood (square-pad vibrating power sander is best or use belt sander on large surfaces). Do not coat green or damp wood. For best results, use 10–20% VR-2 Viscosity Reducer in the first coat of AcrylaThane 55 & 85, then apply subsequent coat(s) full strength. Alternatively, seal wood with MG-201 Penetrating Epoxy before proceeding with topcoat (this is the preferred option where wood will have pedestrian traffic or similar direct contact). For previously painted surfaces, see “General” above. On old wood, painted or not, pressure wash at 1,000 p.s.i. or greater with FerroGrip or industrial degreaser injection, then sand thoroughly and wipe clean with VR-2 Reducer to eliminate saw dust before proceeding.

Drywall – On most drywall, a light sanding will suffice including between coats. For previously painted drywall surfaces, see “General” above.

MATERIAL PREPARATION

If the system has been supplied in kit form, please note that the "B" container is under-filled in order to make room for the addition of the "A" component. The "A" is clear and unpigmented. The pigment is in the "B" side. Stir the individual components first (particularly the "B" side), then add "A" to "B". Continue to stir for 5 minutes to assure homogeneity. Product may be used immediately upon completion of stirring. If product is not in kit form, mix 1 part "A" and 4 parts "B" (by volume) in a clean dry container, after first stirring the individual components. Viscosity will gradually start to rise.

For detailed application temperatures and equipment configuration requirements, please refer to Madison’s “Operating Specifications” pamphlet for required temperatures, filter sizes, and spray tips. Most material application problems are material temperature related. Please ensure that steps are taken to adhere to the operating specifications. If problems still persist, contact a Madison Representative.

APPLICATION PROCEDURES

Pot life is 3-4 hours for lower solids systems such as AcrylaThane 55 and 1-2 hours for high solids systems such as AcrylaThane 85. "Pot life" is the time after which the coating viscosity has doubled, but it may still be sprayable for a further time. If you are reaching the end of the pot life and wish to extend it, add only Madison VR-2 Brush Grade Viscosity Reducer (slow evaporating) or VR-1 Spray Grade Viscosity Reducer (fast evaporating). Do not use any other solvents or reducers, whether from Madison or a third party; they will probably ruin the adhesion, appearance, curing or performance of the product. The use of about 5% by volume of VR-1 or VR-2 will extend the pot life by 30 to 60 minutes. The use of VR-2 Reducer will also make conventional and brush application easier. *WITH AIRLESS SPRAY, DO NOT THIN MATERIAL UNLESS IT IS STARTING TO THICKEN UP AT THE END OF THE POT LIFE AND THE SPRAY PATTERN IS "FINGERING"; OTHERWISE RUNS WILL OCCUR. ADDING REDUCER WILL RETARD CURE SOMEWHAT.*

Airless Spray – On a smooth surface, such as new steel, the first step is to apply a “fog” coat of about 2 to 3 wet mils (50 to 75 microns) on the body of the steel and a “stripe” coat of 3 to 4 wet mils (75 to 100 microns) on welds, lifting lugs and projections. Wait until the fog coat becomes tacky. Then follow up with a full coat of an additional 5 wet mils or so. The fog coat may tack up in a few minutes in hot weather or upwards of an hour under cold conditions. Use a wet mil gauge as this product “builds” very quickly; overall consumption is much less than with older technologies because of the higher solids content and correspondingly higher yield. The above overall coating thickness (7 to 8 wet mils) should provide total coverage. If it does not, make the fog coat slightly heavier as you proceed. On rough surfaces such as concrete, the specification may call for a base coat of an epoxy (see above) or an aromatic polyurethane product to be applied at 8 to 10 mils, followed by 3 – 4 mils of an aliphatic product like AcrylaThane 55 & 85. Recoating should be within 24 hours for best adhesion. However, recoat window varies depending on the spray equipment temperature setting, the ambient conditions, product temperature/thickness, and the temperature of the substrate being coated. All above references are to wet mils. If runs occur, allow more time for the fog/stripe coat to become tacky.

Brush or Roller – Apply like an oil-based paint. See Application Equipment above.

For detailed repair and touch-up application instructions, refer to the Touch-Up Application Instruction.

CLEAN UP

Unreacted Coating Components – Products of this type will react with humidity and moisture. Keep containers tightly sealed. For clean up, use only VR-1 or VR-2. Other solvents may react with the resins and damage equipment.

Reacted Coating – Reacted coatings are inert and non-toxic. Overspray and other reacted coating can be disposed of in a regular landfill. Check with local officials.

COATING INSPECTION

The finished polyurethane coating should be generally smooth and free of sharp protrusions. A minor amount of sagging and dimpling on a coating which otherwise meets specification requirements does not cause the coating to be classified as a failure. Holiday inspection may be conducted at any time after the polyurethane material has reached initial cure; this time will vary depending on the coating, but generally should be after 4-6 hours.

HEALTH AND SAFETY

AcrylaThane 55 & 85 might build up pressure in the can over time. To avoid any sudden burst of gas, open the container carefully, thus allowing the gas to escape slowly. Avoid dropping or subjecting the container to strong force or temperature extremes.

AcrylaThane 55 & 85 is intended for industrial and professional use only. Generally, the user should take the same precautions as with any Mix-and-Apply or PreCatalyzed polyurethane or epoxy, for example marine and automotive coatings. When brushed or rolled, product contains no detectible levels of monomeric isocyanates (a potential irritant found in some polyurethanes). However, the product contains strong industrial solvents, the fumes from which will cause temporary respiratory discomfort, particularly in confined spaces. The product has no known long term adverse effect. AcrylaThane 55 & 85 is flammable and is intended for outdoor use only. Do not use indoors except in a controlled well-ventilated environment using a fresh air mask or a cartridge-type breathing mask rated for organic vapors. If spilled on skin or elsewhere, remove AcrylaThane 55 & 85 immediately with VR-2 Reducer, as product will become extremely solvent resistant and difficult to remove when it begins to cure. If splashed in eyes, wash liberally with clean water and contact physician; temporary irritation of eyes may last several days. Long pants, a long-sleeve shirt and disposable rubber gloves are recommended. If product is accidentally swallowed, do not induce vomiting, as this will cause additional throat irritation; contact physician. MSDS is available upon request. The finished product is inert and environmentally friendly and leftover material can be disposed in the same manner as ordinary paint.

General safety precautions applicable to flammable oil-based paint should be observed. Professional coating applicators should keep the following on hand for reference by staff. These are published by the Steel Structures Painting Council.

SSPC-PA3
SSPC-PS17.00

Guide to Safety in Paint Application
Section 8 – Safety

NOTE: The following are Trademarks and/or Registered Trademarks of Madison Chemical Inc.: Madison Chemical, AcrylaThane, FerroGrip, GalvaGrip, CorroPrime, AP50 Adhesion Promoter, AlumiZinc, PrepCrete, MG-201 & MG-220 & VR Reducers

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