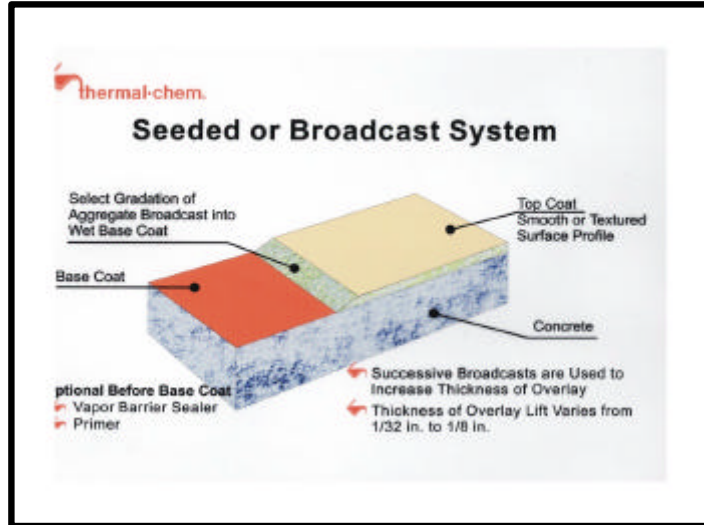


Thin Mil Coatings and Topcoats

Definition of a Thin Mil Coating System or Topcoat

A Thin Mil System is a neat or seeded coating with a DFT [Dry Film Thickness] of between approximately 3 mils to 30 mils thickness. Thin mil coatings and topcoats are typically applied with a squeegee and a short nap roller in one (1) to three (3) coats depending on finish and final thickness desired and/or specified.

The following is intended as a general purpose guide *only* and may not be an appropriate installation method for every specific project. Please contact Thermal-Chem Corporation with specific questions regarding product applications and/or recommendations.



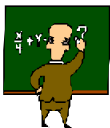
Applicable Products

Thermal-Chem epoxy resurfacers, urethanes, and/or polyurea materials can be applied as a topcoat over a slurry or troweled basecoat. These products may also be used as an optional topcoat over a thin mil application of an epoxy primer or basecoat material. Always refer to individual Product Description Sheets and/or chemical resistant charts for the appropriate product selection, or contact Thermal-Chem Corporation for additional product assistance.

Typical Spread Rates

- To determine spread rate (square feet per gallon):
Divide 1600 by mil thickness = square feet per gallon
- To determine mil thickness:
Divide 1600 by square feet per gallon = mil thickness

EXAMPLES: 1600 square feet per gallon (theoretical) / 100 % solids resin = 1 Mil (DFT)
160 square feet per gallon / 100 % solids resin = 10 Mil (DFT)
160 square feet per gallon / 50 % solids resin = 5 Mil (DFT)



(Refer to individual Product Description Sheets for solids content of specific products.)

Determining Dry Film Thickness (DFT)

The Dry Film Thickness (DFT) of the finished coating is dependent upon percentage of solids in the applied material. Always consider the solids content of the product being applied when calculating the finished mil thickness of the material.

Thermal-Chem Epoxies	-	100% solids (except SteelPrime - 92%)
Urethanes	-	Typically 25% to 60% solids
Polyureas	-	Typically 90% to 100% solids

NOTE: All coverage rates are theoretical. No guarantee of results is possible due to the specific nature and numerous variables present in individual projects. Variables include, but are not limited to: substrate conditions, installation techniques, material temperature, and surface and air temperatures at the time of application.



Application of Thin Mil Coatings and Topcoats

Surface Preparation

Refer to *Installation Guide #2001-IG* for recommended substrate preparation and cleaning procedures for concrete, or contact Thermal-Chem directly.

Temperature - Ambient, Substrate and Material

Temperature is critical for a successful application when using 100% solids epoxies. Material, ambient and substrate temperatures directly impact the spread rate and workability of the material as well as cure time. A 20°F decrease in temperature can result in a doubling, or tripling in some cases, of material viscosity, entirely changing spread rates and coverage. More importantly, cure times will almost double. One additional factor, material thickness (mass), also directly impacts cure time. As a general rule, the warmer the temperatures and the thicker the material, the faster the cure.

Concrete is a cold sync material and will assume the lowest temperature to which it is exposed. Always determine the substrate temperature, particularly for slab-on-grade installations, and do not assume that an ambient temperature of 70°F will produce a substrate temperature of 70°F. In most cases, substrate temperatures are cooler than ambient air temperatures.

For installations where the substrate and ambient temperatures are below 65°F to 70°F, it is best to pre-condition the epoxy material to approximately 80°-85°F. Aggregate should be preconditioned to the same temperature as the epoxy.

NEVER GUESS AT TEMPERATURE! RECORD IT WITH A THERMOMETER!



Refer to individual Product Description Sheets for basecoat and topcoat recoat and viscosity information.

Thin Mil Coatings

1. A two-coat application (epoxy primer or basecoat with a topcoat) is highly recommended for any thin mil coating application. Caution should always be exercised when applying a thin mil coating over a porous substrate. A single coat may be subject to bubbles or out-gassing and/or the overall consumption rate may increase due to the porosity or irregularities in the substrate.
2. After the surface has been thoroughly prepared and cleaned, mix the primer or basecoat resins (components A & B) together in a clean mixing vessel for approximately 2 minutes. Mix only the amount of material that can be placed in approximately 30 minutes.

CAUTION: Thermal-Chem rapid cure materials such as ArmorPrime 100 Rapid Cure, ArmorBond PLUS 3.0, or Resurfacer PLUS 3.0 will have a reduced potlife of less than 15 minutes, depending upon the mass, and must be mixed and placed more quickly than normal cure materials. For more specific information, refer to individual Product Description Sheets or contact Thermal-Chem Corporation prior to mixing and application.



NOTE: When cutting-in material, mix smaller quantities and utilize smaller containers. Materials cut-in from a large container of mixed material will reduce potlife, and material left "in mass" will start to cure prematurely.



3. Once material has been mixed thoroughly, pour the entire contents onto substrate in a ribbon, leaving material in mass will dramatically shorten potlife, and spread by means of a flat or notched squeegee. Always squeegee the material in two directions. This is usually accomplished by a 50% squeegee overlap on each back-and-forth pass. Moving the material in two directions helps to insure air is not entrapped in the tiny voids and surface imperfections but that they are, instead, filled with material. When material has been spread and has had an opportunity to flow-out for several minutes, backroll with a " nap mohair roller for thinner coatings or a porcupine or loop roller for thicker coatings to remove squeegee marks, release any entrapped air, and help material to self-level. Always verify applied thickness with a mil thickness gauge and/or periodically check spread rates during the application process, to insure and maintain the required finished thickness.

BEFORE

PROCEEDING: If a heavy or coarse slip-resistant texture is desired, or function performance criteria requires a sand-filled system, the first coat or mid-coat can be broadcast with an appropriate aggregate while it is still wet. Refer to Step B below under **TOPCOAT FINISHES**.



4. As soon as the prime or basecoat has cured sufficiently to be walked on, a second or mid-coat, for a three (3) coat application, can be applied prior to the finish or topcoat.

CAUTION: Any additional coats **MUST** be applied before the re-coat window has elapsed. Failure to complete material applications within the specified time frames will require additional surface preparation.



As a general rule, re-application time is approximately 24 hours for normal cure materials. Rapid or fast cure materials have a shorter re-application window that may be as short as 4 to 6 hours depending upon temperature. Check individual Product Description Sheets or contact Thermal-Chem Corporation for specific information.

Topcoat Finishes

A. Application Over a Non-Broadcast Basecoat:

Smooth Texture: Allow the material to cure, sand the surface to remove any imperfections and apply the finish or topcoat. Typical spread rates will be 160 to 170 sq. ft. per gallon of mixed resin.

Slip-Resistant Texture: Allow the first application of material to self-level and cure, sand the surface to remove any imperfections, and apply the topcoat material. While the topcoat is still wet, broadcast the surface with the appropriate fine or medium aggregate, and backroll to lock-in aggregate and distribute evenly. Typical spread rate for this topcoat is 150 to 160 sq. ft. per gallon of mixed resin.

B. Application Over a Seeded Basecoat:

Heavy/Coarse Texture: Immediately after the application of the basecoat **and while the material is still wet**, broadcast the surface with TC #6 Broadcast Sand to the point of rejection and allow the material to cure. Once cured, remove any excess broadcast aggregate, sand the surface with a regular floor buffing machine to remove any imperfections, and apply the topcoat by means a squeegee and short nap roller. Depending on size of broadcast aggregate, typical spread rates for a topcoat is between 80 to 90 sq. ft. per gallon of mixed resin.

Before You Begin - Precautions, Limitations, and Notes

- To achieve optimum installation results, refer to individual Product Description Sheets for specific product limitations such as: application temperature, suitability for the application, chemical resistance, cure times, substrate requirements, and available colors.
- No solvents of any kind should be used to place, mix, or thin any Thermal-Chem resin materials. Solvents can adversely affect the overall integrity and/or performance of the finished product.
- Always refer to individual Product Description Sheets and/or the chemical resistant chart for product recommendations and for specific performance characteristics of each product.

- Caution should always be taken when applying any Thermal-Chem product over a substrate that may be subject to hydrostatic or moisture vapor transmissions. When in doubt, a quantitative moisture test should be taken to determine suitability.
- Always wear appropriate eye protection, non-absorbent gloves, and protective clothing when handling any of the products and/or chemicals referred to in this *Installation Guide*. Always read and refer to package labels, warning labels, and MSDS sheets carefully prior to use.
- In case of contact with skin by any Thermal-Chem products, immediately remove the material with soap and water; and follow all written instructions on the appropriate MSDS sheets for exposure to the material and with regard to any Medical Emergency Procedures.
- Work areas should always be adequately ventilated, especially in low and confined spaces.
- It is the responsibility of the user to be aware of and comply with all the appropriate regulations for discarding of material waste and/or chemical waste; and further, it is the user's responsibility to handle and dispose of this waste within appropriate local, state, or federal guidelines.

Manufacturer

Any questions or comments regarding the contents of this *Installation Guide*, for technical questions or assistance, and/or questions with regard to specific installation procedures, contact the manufacturer:

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