

TROWELED OVERLAY SYSTEM

PRODUCT DESCRIPTION

Thermal-Chem's Troweled Overlay System was designed to provide high strength overlays utilizing a blend of aggregates combined with an epoxy polymer matrix. Troweled overlays provide a smooth, dense finish that protects and enhances impact resistance, abrasion and chemical resistance greater than that of concrete. Troweled overlay systems are typically installed at a minimum thickness of 3/16" to 1/4" but may be installed thicker if required.

ADVANTAGES

- Superior surface protection
- Extremely durable and long wear
- Easy to clean
- Chemical resistant
- Customizable surface profile
- Exterior or Interior
- All products are VOC compliant
- Moisture insensitive

TYPICAL USES

- Repair deteriorated concrete
- Areas exposed to heavy industrial usage
- Commercial kitchens and food prep areas
- Pitching/sloping floors
- All areas of food processing

LIMITATIONS

- Concrete slab on grade or below-grade requires vapor/moisture testing. If a vapor drive in excess of 3 lbs. per 1,000 sq. ft. per 24 hours (ASTM F 1869) is present, an epoxy vapor barrier coating must be installed below the Troweled overlay system for proper performance.
- Do not install system if the ambient temperature and/or concrete substrate temperature is below 40° F or above 90° F. Product cure times are significantly affected by temperatures and can have a major affect on working time.
- Allow epoxy to cure for 24 hours prior to exposure to water and 2 days before the use of cleaning chemicals.
- A UV resistant Urethane must be applied to all exterior surfaces.

COLOR

Select from twelve standard solid colors

PHYSICAL PROPERTIES

Color	To be selected
Solids	100% Epoxies
VOC	Compliant urethanes
Cure Rate @73° F	Dry to touch: 5-8 hrs Recoat: 8-16 hrs Auto traffic: 24 hrs
Hardness, Shore D ASTM D 2240	80-85
Elongation ASTM D 638	4.8% +/-1
Tensile Strength ASTM D 638	9,900 psi
Compressive Strength ASTM D-2240	13,500 psi
Bond Strength ACI 503	>350 psi (100% concrete failure)
Impact Resistance ASTM D 2794	160 in/lbs
Thermal Compatibility	Passes
Abrasion Resistance ASTM D 1044, CS-17 wheel, 1000 cycles	32-33 mg
Flammability	Self-extinguishing over concrete

ASTM C = Mortar System
ASTM D = Resin only

OPTIONS

- Various texture degrees ranging from smooth, medium, to aggressive can be achieved. The contractor should submit a texture sample and sign off approval by customer should occur before installation.
- EXPANSION AND CONTROL JOINTS MUST BE TREATED TO ALLOW FOR MOVEMENT. Prior to installation, different methods of treatment and repair should be discussed and agreed to by the manufacture and end user prior to installation.
- Optional finish wear coats can be applied such as a polyurea or urethane that will provide improved wear, chemical, and UV resistance.

SURFACE PREPARATION

Proper surface preparation is essential for proper system installation. New concrete should be cured a minimum of 28 days. The substrate must be dry, clean, and sound. All surface contaminants such as dirt, oil, grease, paint, fats, wax, and concrete laitance should be removed.

GENERAL SUBSTRATES

Thermal-Chem systems can be applied to a variety of substrates if the surface is properly prepared. It is always recommended that the coating system be applied directly to concrete. After selecting the surface preparation method, adhesion testing should be performed using an ACI 503 test method or a Simple Cup test method. Typically no adhesion warranty is offered regarding the continued adhesion of the old coating to the concrete.

CONCRETE SUBSTRATE

To insure proper system adhesion, concrete surfaces can be prepared by shot blasting, scarifying, or diamond grinding. Refer to Installation Guide # 2001-IG for proper floor prep recommendations.

SYSTEM INSTALLATION**Primer**

Premix the A component of the primer, then pour both A and B components together into a clean mixing container and mix for 2 minutes. Immediately pour the entire mixed material onto the substrate in a ribbon pattern and spread with a flat squeegee using overlapping two-direction squeegee passes. For edges and hard to reach areas use a paintbrush. Cross roll with a ¼ inch mohair roller at a spread rate of **160 – 200 square feet per gallon**. Overlap roller passes to remove squeegee line and roller marks.

Trowel Mix

Premix the resin as described above then slowly add two (2) 33 lb. bags of Thermal-Chem A106 Trowel Silica #5 to one (1) mixed gallon of ArmorClad Product 735. Mix until a homogenous blend and color is observed. Place the mixed product into a screed box and place at 1/16" greater than the desired finished floor. For example, if a ¼" floor is specified, then place the material at 5/16". Finish with a power trowel machine or by hand insuring the floor is smooth, without trowel marks and "closed" properly. The mixed material will cover 25 square feet at ¼" in depth.

Grout Coat

Premix the Grout Coat Resin, ArmorTred Resurfacer Product 728, as described above. Immediately pour the entire mixed material onto the substrate in a ribbon

pattern and spread with a flat squeegee using overlapping two-direction squeegee passes. Cross roll with a ¼ inch mohair roller at a spread rate of **110 - 120 square feet per gallon**. Overlap roller passes to remove squeegee line and roller marks.

Optional Top Coats

Should a thicker topcoat for longer wear be desired, apply a second coat of ArmorBond Resurfacer Product 731 at the rate of 140-150 square feet per gallon. Should a UV resistant or additional resistance to staining be required apply either ArmorFinish E81 Product 1061 (NO ODOR) urethane OR DecoFinish E57 Product 1057. Application rates for either urethane is 300 square feet per gallon.

FINISHED TEXTURE

Texture is typically achieved through a combination of quartz granule sizes, and the thickness and number of topcoats.

One of Thermal-Chem's aluminum oxide sizes (fine, medium, coarse or extra coarse) may be use to enhance an aggressive texture. The use of approximately 3 pounds per 100 sq. feet may be applied into the wear coat and bank rolled while still wet.

CLEANUP

Clean up mixing and application equipment immediately after use. Use xylene and be careful to observe all fire and health precautions when handling or storing solvents.

Safe and proper disposal of excess materials shall be done in accordance with applicable federal, state, and local codes.

SYSTEM MAINTENANCE

Thermal-Chem's Troweled Overlay Flooring System when properly maintained will retain its wear surface for several years.

GENERAL CARE

If the Troweled Overlay or its topcoat is gouged, it should be patched immediately.

Always clean up chemical spills to avoid possible staining.

Refrain from dragging heavy loads, sharp objects or equipment across the floor surface.

CLEANING SCHEDULE

Floors can be swept using ride on commercial sweepers. Heavy soil load environments may require auto scrubbing. Dirt, grease, oil, spills, and other surface contaminants represent a safety issue and should be addressed by a regular floor-cleaning schedule. Facility soil loads, safety and appearance, all contribute to frequency and what type of cleaning is

required. Consult Thermal-Chem's Care and Maintenance Guide for polymer floor systems.

DISCLAIMER

The data on this sheet represent typical values obtained by the methods indicated. Since application variables are a major factor in product performance, this information should serve only as a general guide. Such information and recommendations are subject to change and pertain to the products(s) offered at the time of publication. Published technical data is subject to change without notice.

SYSTEM APPLICATION

	Material	Mix Ratio	Theoretical Coverage	Packaging
Primer Coat	734 ArmorPrime 100	2:1	160 sq. ft. / gal	3 or 15 gal units
Troweled Overlay	735 ArmorClad A106 Troweled Aggregate	2:1	1/4" thickness yields 24 SF per 1gal/2bag mix	3 or 15 gal units 33 lbs bag
Grout Coat	728 ArmorTred Resurfacer	2:1	150 sq. ft. / gal	3 or 15 gal units
Top Coat (Optional)	731 Armor Bond Resurfacer	2:1	100 sq. ft. / gal	3 or 15 gal units
Finish Coat (Optional)	1057 Deco Finish E-57 or 1061 Armor Finish E81 No odor urethane	1:1 3:1	300 sq. ft. / gal	2 or 10 gal units