

## **Blome Thermcrete™ HT Trowel Applied Cementitious Polyurethane Surfacer**

### **TECHNOLOGY DESCRIPTION**

Blome Thermcrete™ is a unique renewable resource technology bio-based polyurethane concrete surfacer and floor topping that delivers superior protection and hygiene for Food, Beverage, Pharmaceutical and chemical processing and packaging environments. It is ideally suited for the protection of concrete floors, pads, curbing, trenches and sumps that are exposed to process and cleaning chemicals. Thermcrete is based on a unique environmentally sustainable formulation utilizing bio-based polyols. This formulation results in a polymer overlay with excellent chemical and moisture vapor transmission (MVT resistance with virtually no absorption, improved adhesion and high flexibility. Blome Thermcrete provides outstanding resistance to thermal shock and mechanical abuse due to its low expansion coefficient and tough, impact resistant characteristics. Thermcrete cures quickly, offering quick turnaround with minimal downtime for maintenance and new construction applications.

### **PRODUCT DESCRIPTION**

Blome Thermcrete HT is a four component trowel applied, heavy duty seamless flooring system typically installed at 1/4" to 3/8" (6-9mm) thickness. Thermcrete HT exhibits very good resistance to a broad range of mineral acids including dilute nitric, sulfuric and hydrochloric. It is well suited for use in most caustic solutions, bleaches, and exposure to many organic acids, including lactic acid and dilute acetic. The material requires no primer and exhibits outstanding bond strength to properly prepared concrete. Thermcrete withstands heavy traffic, physical abuse and temperature excursions up to 250°F in many chemicals and cryogenic applications down to -260°F

Thermcrete HT is formulated with HY-CLENE™, an industry leading proprietary natural additive to provide unparalleled resistance to Fungi growth per industry standard ASTM G-21.

### **TYPICAL USES**

Thermcrete Polyurethane Concrete Surfacer is suitable for use in a variety of concrete flooring applications including:

Food Processing Plants	Pharmaceutical Plants
Beverage and Bottling Facilities	Chemical process Plants
Wet Corn Milling Facilities	Automotive Assembly Areas
Heavy Equipment Manufacturing	Freezers and Coolers
Power Generation Facilities	Pulp & Paper Mills
Cryogenic Facilities	Waste Management Facilities

## HANDLING CHARACTERISTICS

Blome Thermcrete HT Grade is troweled into place at a desired thickness, finished to desired texture & allowed to cure. Thermcrete HT can be back-rolled to bring resin to the surface and broadcast to desired non-skid texture and allowed to cure. A topcoat may be applied to provide a uniform appearance and lock in a broadcast.

## TYPICAL PROPERTIES WET

Wet Components	Four (4): Resin, Activator, Pigment & Aggregate
Wet Density	130 lbs.ft <sup>3</sup>
Mix Consistency	Wet Mortar
Pot Life, 55°F	30 minutes
Pot Life, 75°F	20 minutes
Light Traffic, 55°F	16 - 18 hours
Light Traffic, 75°F	10 - 12 hours
Heavy Traffic, 55°F	32 - 36 hours
Heavy Traffic, 75°F	20 - 24 hours
Full Cure, 55°F	7 - 10 days
Full Cure, 75°F	5 - 7 days

## TYPICAL PROPERTIES CURED

Bond Strength / Adhesion (ASTM D-4541)	400 psi (100% Concrete Failure)
Compressive Strength (ASTM C-579)	8,100 psi
Tensile Strength (ASTM C-307)	1,350 psi
Flexural Strength (ASTM C-580)	2,650 psi
Impact Strength (ASTM D-4226)	≥ 168 in-lbs.
VOC	5 g/L
Coeff. Of Thermal Expansion (ASTM C-531)	1.1 x 10 <sup>-5</sup> in/in/°F

## COLORS

Light Gray, Dark Gray, Red, Black, Tan, Black, Green, Beige Blue, Yellow (others available)

## PACKAGING & STORAGE

Thermcrete is supplied as a four (4)-component product including a Resin, Activator, Pigment and Aggregate. Bulk units are available upon request. Standard Packaging for Thermcrete components as follows:

HT GRADE PACKAGING	HT GRADE PACKAGING	HT GRADE PACKAGING
<b>STANDARD UNIT (1/4" = 24 ft<sup>2</sup>)</b>	<b>STANDARD UNIT (3/8" = 16 ft<sup>2</sup>)</b>	<b>BULK UNIT (1/4" = 12,000 ft<sup>2</sup>)</b>
5.0-lb (Gallon Can) Resin (A)	5.0-lb (Gallon Can) Resin (A)	2,500 lb (IBC Tote) Resin (A)
5.0-lb (Gallon Can) Activator (B)	5.0-lb (Gallon Can) Activator (B)	2,500 lb (IBC Tote) Activator (B)
1 x 1-lb Bag Pigment Powder (C)	1 x 1-lb Bag Pigment Powder (C)	500 x 1-lb Bag Pigment Powder (C)
1 x 52-lb Bag HT Aggregate (D)	1 x 52-lb Bag HT Aggregate (D)	500 x 52-lb Bag HT Aggregate (D)
<b>DOUBLE UNIT KIT (1/4" = 48 ft<sup>2</sup>)</b>	<b>DOUBLE UNIT KIT (3/8" = 32 ft<sup>2</sup>)</b>	<b>BULK UNIT (3/8" = 8,000 ft<sup>2</sup>)</b>
10-lb (2-Gal Pail) Resin (A)	10-lb (2-Gal Pail) Resin (A)	Consult your BLOME International Representative for recommended
10-lb (2-Gal Pail) Activator (B)	10-lb (2-Gal Pail) Activator (B)	Pigment Powder and Aggregate
2 x 1-lb Bags Pigment Powder (C)	2 x 1-lb Bags Pigment Powder (C)	quantities for BULK packaging kits.
2 x 52-lb Bags HT Aggregate (D)	2 x 52-lb Bags HT Aggregate (D)	

Bulk unit pricing is available for large projects and distribution. Shelf life for Thermcrete components is twelve (12) months. Resin must be protected from freezing during shipment and storage. Keep Thermcrete components tightly sealed in original containers until ready for use. Store components in a cool, dry place, out of direct sunlight and on pallets at temperatures between 50°F – 75°F. Protect Thermcrete Resin, Activator, Pigment and Aggregate from water and weather while in storage and on job site.

#### ESTIMATED COVERAGE

Blome Thermcrete HT- Standard Unit Packaging covers the following surface area at stated thicknesses:

HT Grade (0.50 cu. ft. units)	24 ft <sup>2</sup> @ 1/4" thickness
HT Grade (0.50 cu. ft. units)	16 ft <sup>2</sup> @ 3/8" thickness

#### BID SPECIFICATION GUIDE

Use Blome Thermcrete HT Polyurethane Concrete Floor Surfer as manufactured by Blome International, O'Fallon, MO.

#### JOB SITE ENVIRONMENTAL CONDITIONS

Do not install Thermcrete in direct sunlight. Blome Thermcrete must be applied while ambient temperatures are between 50°F and 80°F. Components and substrate temperatures must also be maintained in this range. For best results, store Thermcrete components below 75°F, for 24-36 hours prior to installation. Installations of Thermcrete must be protected from water and weather during placement and until cured.

#### SURFACE PREPARATION

Concrete substrates to which Blome Thermcrete will be applied should ideally be cured for a minimum of 14 days. Thermcrete may be applied after 7 days cure or when concrete reaches a minimum compressive strength of 3,500 psi to allow for proper surface preparation. Concrete cured less than 14 days, however, may lead to early curing movement, shrinkage or cracking that could reflect through the final floor topping. Minimum tensile strength of concrete must be 300 psi when tested using a Schmidt Hammer. Concrete must be dry in accordance with ASTM-4263 Plastic Sheet Test Method. Concrete surfaces must be free of all laitance, oil, curing compounds and any dust or other loose materials prior to installation of Thermcrete.

To prevent lifting or delamination, keyways (min. 5/16" W x 5/16" D) must be cut at all terminations, joints, columns, doorways, and drains.

Concrete shall be mechanically prepared to a CSP-5 or greater surface profile, meeting International Concrete Repair Institute (ICRI) technical guideline No. 03732 for coating concrete. Concrete surface irregularities, cracks, fissures, discontinuities, expansion and control joints, and terminations should be addressed with proper corrective measures prior to application of Thermcrete flooring systems. Concrete movement, shrinkage, cracking and joints will reflect through the finished Thermcrete flooring.

## SAFETY PRECAUTIONS

Thermcrete Resin, Activator, Aggregates, Pigments, and mixes of them, present various health hazards if handled improperly. Wear respirator suitable for silica dust, safety glasses with side shields, gloves and long sleeve shirts to prevent all contact with skin and eyes. After working with Thermcrete, wash thoroughly before eating, drinking, smoking or other activities.

## APPLICATION EQUIPMENT

Thermcrete is best mixed with a paddle type mortar mixer, KOL type bucket mixer, or in a pail using a drill motor driven paddle blade. BLOME recommends the use of PORTAMIX Mega-Hippo mixer or MAN-U-FAB M-61 mixer. All mixing and application equipment must be clean, dry and free of any contaminants. When mixed, Thermcrete is transferred to placement area using a clean, dry wheelbarrow or buckets. Thermcrete is screeded into place using a clean, dry screed board to reach desired thickness. When placed, Thermcrete is finished using a clean, dry, steel-finishing trowel to desired surface texture.

## MIXING AND APPLICATION

1. With the mixer running, add Resin (Part A) into the barrel or pail.
2. Slowly add the supplied color pack and mix for a **minimum of 1 minute** to distribute desired color throughout.
3. Add Activator (Part B) and mix together with a paddle mixer and blend thoroughly for a **minimum of 1 minute**.
4. Once this mixture is thoroughly blended, slowly add Aggregate (Part D), without dumping, to the mixer and **mix to a uniform consistency**. Do not reserve any of the aggregate (Part D), using the entire contents of the bag(s). The amount of aggregate must not be reduced as this will potentially lead to foaming or swelling during cure.
5. Mix all four (4) components slowly and thoroughly for an **additional 1-2 minutes**, making sure there are no lumps or dry pockets of powder on the paddles or in corners of mixer. During this operation, **scrape the sides and bottom of the mix container** with a blade or flat trowel to ensure complete mixing.
6. Immediately after mixing (within 3 minutes), spread the mixed Thermcrete HF onto the floor at a thickness slightly greater than the desired finish, using a screed box or move by hand trowel.
7. Finish lightly as screeded material will show screed and trowel marks after placement.
8. Trowel the surface lightly, using a steel finish trowel to smooth the surface. Finish trowel strokes should all be in the same direction. Do not overwork the mortar. The material should be troweled to a finished thickness of at least 1/4" to 3/8", for thicknesses greater than 1" add 25 lbs. of clean, dry 3/8" pea gravel to the mixture to help reduce the heat generated during cure.

9. Immediately roll the surface lightly in no more than two passes with a mohair roller. Excessive rolling or use of loop roller will reduce slip resistance. Late or heavy rolling may induce pinholes.
10. Lay abutting edges within 10 minutes, or less depending on temperature, to ensure a clean edge. A “wet edge” installation is imperative during large placements to avoid lines and ridges in the finished floor.
11. Some grades of Thermcrete allow for a broadcast of silica sand, and/or varying grades of color quartz or aluminum oxide grit into wet material for non-skid texture.

## **CLEANUP**

All tools, mixing equipment, gloves and application equipment should be cleaned up immediately using a citrus or biodegradable cleanser, with hot water, while material is still wet. If material begins to cure, solvent-based cleaners will be required for removal.

## **WARRANTY**

We warrant that our goods will conform to the description contained in the order and that we have good title to all goods sold. Our material data sheets and other literature are to be considered accurate and reliable, but are used as guides only. WE GIVE NO WARRANTY OR GUARANTEE, WHETHER OF MERCHANT ABILITY OR FITNESS OF PURPOSE OR OTHERWISE, AND WE ASSUME NO LIABILITY IN CONNECTION THEREWITH. We are happy to give suggestions for applications; however, the user assumes all risks and liabilities in connection therewith regardless of any suggestion, we may give. We assume no liability for consequential or incidental damages. Our liability, in law and equity, shall be expressly limited to the replacement of non-conforming goods at our factory, or at our sole option, to repayment of the purchase price of the non-conforming goods.

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Supersedes ALL