



ICO HI Guard Trowelled

Product Data Sheet

Product Description

ICO-Hi Guard™ is a solvent-free, 100% solids, three part epoxy novolac floor system hand trowelled in one pass in any thickness down to 3/16". It has excellent chemical resistance to many concentrated acids, including 98% sulfuric acid, as well as most alkalis and some solvents. The enhanced toughness of the formulation allows for better resistance to thermal and mechanical shock compared to harder, more brittle conventional materials. Applied at a typical quarter inch thickness, **Hi Guard™** will withstand frequent heavy mechanical wear without need of constant maintenance.

ICO-Hi Guard's™ resin rich formulation eliminates the need for a top sealer coat, thereby reducing the downtime and improving resistance to moisture penetration. Its high gloss facilitates cleaning. Anti-slip characteristics can be enhanced by the addition of silica quartz or aluminum oxide. **ICO-Hi Guard™** is particularly effective in damp conditions, even on slab-on grades.

Typical Application

ICO-Hi Guard™ is particularly recommended for chemical plants, secondary containment, chemical storage rooms in food and beverage plants, and other high corrosion areas. It is our recommended product for withstanding 98% sulfuric acid. Its resin-rich formulation provides a dense, impermeable barrier to liquid penetration, even if the top surface is gouged. Its excellent wettability allows it to adhere to both damp and dry concrete, metal, wood, brick and tile.

Chemical Resistance

ICO-Hi Guard™ has excellent resistance to virtually all caustics and such acids as 98% sulfuric, 85% phosphoric, 30% chromic, 30% nitric and 37% hydrochloric. A more complete list of chemical resistance is available in the **Milamar Coatings Chemical Resistance Chart** or contact **Milamar** Technical Assistance.

Physical Properties

Tensile Strength (ASTM C-307):	1285 psi	Bond Strength to Quarry Tile:	>1000 psi
Tensile Elongation (C-307):	5%	Vapor Transmission Rate (E-96):	.07 perms
Hardness, Shore D (D-2240):	80	Water Absorption (D-5790):	0.1% in 24 hours

Gardner Impact Strength (D-2794):	160 in./lbs.	Flexural Strength (C-580):	1940
Compression Strength (C-579):	6165 psi	Flammability (D-635):	Self-Extinguishing
Coefficient of Thermal Expansion (D-696):	5.9×10^{-5} per °F		

Physical Characteristics

Density, lbs. /gal.		Viscosity @ 77°F, cps	
Part A	9.8	Part A	450
Part B	8.8	Part B	600
A&B Mixed	9.5	A&B Mixed	500
Mixing Ratios			
By Volume		By Weight	
Part A : Part B	2:1	2.2:1	
Aggregate : Liquid	2.8:1	4.5:1	

Curing Times @:	50°F	77°F	90°F
Pot Life:	35 min.	30 min.	25 min.
Work Time:	35 min.	45 min.	30 min.
Hard, Foot:	24 hrs.	10 hrs.	5 hrs.

Shelf Life

1 year at 77°F in unopened containers.

Maximum Hardness achieved after 7 days @77°F.

Color Availability

Standard colors: gray, dark gray, beige, red, brown, black.

Packaging and Coverage Rates

Basic Kit	27 SF at 1/4"
Bulk Pack	270 SF at 1/4"
Drum Kit	2700 SF at 1/4"

Installation

Please refer to our **Application Specs** for detailed instructions. Particular care must be taken to follow those instructions precisely to assure proper installation.

1. New concrete should be allowed to cure a minimum of 28 days or be checked with a rubber mat or plastic sheet to insure adequate curing time has occurred.

2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a ph. of 7.

3. The three ingredients should be mixed in the prescribed ratios, using a low speed paddle style mixer (maximum 750 rpm), until uniform in color and consistency. Mix Part A and Part B and then slowly add the aggregate and pigment.
 4. Do not mix less than the prescribed amount of any ingredient or add any solvent to the mix.
 5. ICO-Hi Guard is a self-priming mix. However, to reduce chances for out gassing, seal the concrete with ICO-Primer LV or ICO-Primer LV FC prior to application. Allow to dry.
 6. The prepared mix may be spread using screed strips, gauge rakes or notched trowels to insure a nominal 1/4" average depth.
 7. Allow the rough spread material to set a few minutes before finish troweling to allow the resin to come to the surface which facilitates the smoothing action of the trowel.
 8. After the finish troweling the surface may be back rolled with a short nap roller to remove blemishes. The roller can be slightly damp with ice water, xylene, toluene or alcohol to prevent pickup.
 9. A suitable aggregate may be broadcast onto the surface after back rolling to provide more anti-slip profile to the finished surface. It is advisable to test various types and sizes of aggregate to achieve the desired finish profile.
- NOTE: Failure to follow the above instructions, unless expressly authorized by a Milamar Technical Service Representative, will void our material warranty.**

Precautions

1. Do not apply below 50°F.

Product Specification

The specified area shall receive an application of **ICO-Hi Guard™** as manufactured by **Milamar Coatings LLC of Oklahoma City, Oklahoma**. The material shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing, and application. The material shall be a low odor, three part, and solvent-free 100% solids epoxy system with moderate resilience to resist thermal and mechanical shock. It should be trowel applied normally at 1/4" thickness in one application without needing a top coat. It shall be a resin rich mix ratio of 3.2:1, by volume **ICO-Fill** aggregate to resin and hardener. The compressive strength when tested in accordance with ASTM C-579 shall not exceed 6200 psi and a tensile strength of 1300 psi as measured against ASTM C-307. It shall have excellent adhesion to wood, metal, tile brick and damp as well as dry concrete. The system shall resist chemical attack from oils

and greases and such acids as concentrated chromic, 30% nitric, 98% sulfuric, 85% phosphoric and 20% acetic.

The data statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by us, and we believe such data. Statements and recommendations will serve as reliable guidelines. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

LIMITED WARRANTY

Milamar Coatings products are manufactured to be free of defects in material and workmanship in meeting the properties specified on its individual Product Data Sheets. Users and installers of Milamar Coatings products are solely responsible for determining the suitability of the products for specific product applications. Milamar Coatings makes no Warranty or Guarantee, express or implied, including warranties of fitness, design compatibility or merchantability, for any particular use and shall have no responsibility or liability, including direct, indirect or consequential damages, due to injury, delay or third party claims for installation or repair. Likewise, Milamar Coatings assumes no liability of any nature for products that are adjusted in the field or that do not utilize all specified Milamar Coatings components. Should any Milamar Coatings product be proved to be defective within one year from the date of shipment, Milamar Coatings will, at its sole discretion, either replace the material; issue a credit to the customer's account; or provide a cash refund for the initial, paid purchase price of the material. Potential claims regarding product quality must be received in writing by Milamar Coatings within 30 days of the discovery of such potential defect. This Warranty is exclusive of all other warranties, expressed or implied, and may only be adjusted in writing, signed by an officer of Milamar Coatings, L.L.C.

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