

## ICO-HI GUARD™

### 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 wetability 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 **International Coatings Chemical Resistance Chart** or contact ICO Technical Assistance.

### Physical Properties

Tensile Strength (ASTM C-307):	1285 psi	Flammability (D-635):	Self Extinguishing
Tensile Elongation (C-307):	:5%	Vapor Transmission Rate (E-96):	:.07 perms
Flexural Strength (C-580):	:1940 psi	Coefficient of Thermal Expansion (D-696):	:5.9 x 10 <sup>-5</sup> per °F
Compression Strength (C-579):	:6165 psi	Gardner Impact (D-2794):	160 in- lbs.
Hardness, Shore D (D-2240):	:80	Water Absorption (D-5790):	0.1% in 24 hours
Bond Strength to Quarry Tile:	>1000 psi		

### Physical Characteristics

Density, lbs/gal.	Mixing Ratios	By Volume	By Weight
Pt. A 9.8	Pt. A : Pt. B	2 : 1	2.2 : 1
Pt. B 8.8	Aggregate : Liquid	3.2 : 1	5 : 1
A&B Mixed 9.5			

Viscosity@77°F, cps	Curing Times @	50°F	77°F	90°F
Pt. A 450	Pot Life	35 min.	30 min.	25 min.
Pt. B 600	Work Time	35 min.	45 min.	30 min.
A&B Mixed 500	Hard, Foot Traffic	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 Installation Guide for detailed instructions. Particular care must be taken to follow those instructions precisely to assure proper installation. Do not apply below a substrate temperature of 50°F.**

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 outgassing, 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 backrolled 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 backrolling 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.

## **Precautions**

Avoid skin contact with liquid Part A and Part B as they may cause skin irritation to some people. Protective hand creams and/or gloves should be used. Cleanup can be done with hot soapy water before the material starts to set. Once the material has set it can be removed with a paint stripper.

## **Product Specification**

The specified area shall receive an application of **ICO-Hi Guard™** as manufactured by **International Coatings, Franklin Park Illinois**. 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, 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.

## **Technical Assistance**

Our many years of installation experience enable us to provide valuable input on not only proper material selection but also installation techniques that will help assure your satisfaction. We have qualified personnel to inspect your floors, analyze the cause of the problems and design procedures and specifications to prolong the useful life of your floors. We furnish detailed application specifications including drawings of necessary details to be used. We are prepared to offer job site instruction for your in-house maintenance crews or to work closely with your preferred applicator. We can also furnish a list of our network of **ICO**-trained certified applicators.

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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.

**WARRANTY** - All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. **WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.**

**THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.**

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