



**Resilient
Epoxy
Flooring
and
Grouting
Systems**

PRODUCT DATA SHEET

ICO-GUARD 51™

Product Description

ICO-Guard 51™ is a three-part, flexibilized epoxy flooring material, normally applied over concrete, with excellent chemical and thermal shock resistance. It is a USDA approved product with low odor, zero VOC's, and excellent damp adhesion. As a "resin-rich" mix it can be applied by hand or power trowel in a single step in virtually any thickness down to 3/16" without need of any "grout" or "sealer" coats or as a two-step, slurry/topcoat application for open areas. As it is impervious throughout its entire thickness, it will far outlast conventional "sealed" floors, especially in heavy wear, wash-down areas.

Unlike most epoxies, **ICO Guard 51** is formulated to withstand extreme thermal shock, including steam cleaning. Unlike more brittle, conventional epoxies, with compressive strengths typically exceeding 10,000 psi, or three times that of concrete, **ICO Guard 51** is formulated to have properties closer to that of concrete with a compressive strength of about 5,200 psi. Such lower compressive strengths result in more flexible (tensile elongation of 10% resin only) material that is far less likely to crack under thermal shock and impact compared to the harder, more brittle epoxies.

ICO Guard 51 has excellent chemical resistance against CIP cleaners, most inorganic acids, caustics, lubricants and some solvents. It dries to a moderate glossy surface; texture can be provided by broadcasting aggregate into the still wet surface. **ICO Guard 51** is available in a fast cure version for applications down to 40°F, at which temperature it cures hard in 24 hours.

There is also "Cold Cure" version for applying down to 32°F (see PDS **ICO Guard Cold Cure**). **ICO Guard** can be applied as a vertical coving material by ordering "**ICO Guard Cove Mix**".

Typical Application

ICO-Guard 51™ is particularly recommended for meat and poultry plants, dairies, citrus, and bottling plants seeing heavy wear, exposure to a broad pH range down to 1 and daily exposure to CIP sanitizing wash-downs up to 212°F. It is ideal for quick turnaround repairs in existing food and beverage plants, even if the plant remains in operation, or for new facilities where a long-lasting, low maintenance floor is desired.

ICO Guard 51 provides an easy-to-clean, seamless surface for institutional and commercial kitchens, even over old quarry tile or brick floors, provided the tile is well bonded. In its "fast Cure" and "Cold Cure" versions, it is well suited for application in coolers and cold rooms without contamination of sensitive food products.

Chemical Resistance

ICO-Guard 51™ is highly chemical resistance to most acids, including up to 80% sulfuric, 85% phosphoric, 30% nitric, concentrated HCl, 80% lactic and most CIP cleaners. See our Chemical Resistance Chart under "**ICO Guard**" for individual chemical resistances.

Physical Properties

Tensile Strength (ASTM C-307) : 2030 psi	Bond Strength to Quarry Tile : >1000psi
Tensile Elongation (C-307) – filled : 3%	Flammability (D-635) : self extinguishing
Tensile Elongation (D-638)- unfilled : 10%	Vapor Transmission Rate (E-96) : .03 perms
Flexural Strength (C-580) : 2550 psi	Coefficient of Thermal Expansion (D-696) : 1.7 x 10 ⁻⁵ per °F
Compression Strength (C-579) : 5170 psi	Gardner Impact (D-2794) : > 160 in- lbs.
Hardness, Shore D (D-2240) : 75	Water Absorption (D-570) : 0.3% in 24 hours

Physical Characteristics

Density, lbs/gal.	Mixing Ratios	ICO-Guard 51™		ICO-Guard 51 FC™	
		By Volume	By weight	By Volume	By weight
Pt. A 9.5	Pt. A : Pt. B	2 : 1	2.2 : 1	2.5 : 1	2.9 : 1
Pt. B 8.6	Aggregate : Liquid	3.3 : 1	5 : 1	3.3 : 1	5 : 1
A&B Mixed 9.2	ICO Guard 51	Curing Times @	40°F	50°F	70°F 90°F
		Pot Life	-	60min	50min 25min
		Working Time	-	2hrs	100min 80min
		Tack Free	-	14hrs	6hrs 4hrs
		Hard, Foot Traffic	-	60hrs	20hrs 10hrs
		Hard, Truck Traffic	-	72hrs	28hrs 14hrs
	ICO Guard 51 FC	Pot Life	50min	45min	30min -
		Working Time	60min	50min	35min -
		Tack Free	12hrs	9hrs	4hrs -
		Hard, Foot Traffic	26hrs	18hrs	8hrs -
		Hard, Tuck Traffic	32hrs	24hrs	12hrs -

Color Availability

Standard colors: white, gray, dark gray, beige, yellow, red, green, blue, brown, black.

Packaging and Coverage Rates

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

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 for 28 days; however, if shorter times are necessary, a plastic sheet test and calcium chloride test should be taken. Call ICO Tech Service when data obtained.
2. Floor must be free of grease, oils and other contaminants and should be mechanically abraded, by shot-blasting, scarifying or diamond grinding to remove old poorly bonded coatings and obtain a minimum texture of 30 to 40 grit.
3. **ICO Guard 51** is a self-priming floor; however, particularly on porous substrates, a prime coat of **ICO Primer LV** is highly recommended to minimize out-gassing. Allow to dry tack free,
4. The three ingredients should be mixed in the prescribed ratios using a low speed (<700rpm) paddle style mixer, first with A & B components for at least 30 seconds followed by addition of aggregate and tint and mixed for another 30 seconds or until uniform in color and consistency.
5. Do not mix less than the prescribed amount of each component and do not add any solvent.
6. The prepared mix may be applied by a screed box or bar to ¼" thickness and allowed to set for several minutes, before finish trowelling with a power trowel or by hand. Do not over trowel. Trowelling may be enhanced by using isopropyl alcohol (IPA) sprayed **lightly** on the trowel.
7. After finish trowelling the surface may be back-rolled with a short nap roller dipped in IPA to remove light trowel marks and to bring the resin to the surface, followed by broadcasting in with a suitable grit to achieve the desired texture. No top coat necessary

NOTE: Failure to follow the above instructions, unless expressly authorized by an ICO Technical Service Representative, will void our material warranty

Precautions

1. Do not apply fast cure version, **ICO Guard 51 FC**, much above 65° to 70°F as it is very fast reacting.
2. For application temperatures between 32° and 40°F, use **ICO Guard Cold Cure** instead.

Product Specification

The specified area shall receive an application of **ICO Guard 51™** as manufactured by **International Coatings, Franklin Park Illinois**. The system shall be installed by precisely following the manufactures published recommendations pertaining to surface preparation, mixing and application. The material shall be a low odor, three part, solvent-free 100% solid, epoxy system with moderate resilience to resist thermal and mechanical shock. It should be trowel applied normally at 1/4" thick ness in one application without needing a top coat. It shall be a resin-rich mix ratio of 3.3:1, **ICO-Fill™** aggregate to resin and hardener. It shall have an elongation of 10% when tested using ASTM D-638 and a Gardner Impact greater than 160- inch pounds when tested under ASTM D-2794. The compressive strength when tested in accordance with ASTM C-579 shall not exceed 5200 psi and tensile strength not to exceed 2030 psi as measured against ASTM C-307. The system shall be useable at temperatures down to 40°F by specifying **ICO-Guard 51FC™**. It shall be water wipeable and have excellent adhesion to wood, metal tile, brick and damp as well as dry concrete. It shall be self priming except on surfaces with extreme porosity. The system shall be unaffected by oils and greases and have high chemical resistance against such acids as 36% hydrochloric, 30% nitric, 80% sulfuric, concentrated lactic and 10% acetic. It shall resists such caustics as sodium hydroxide and ammonium hydroxide.

Mission Statement

Our mission is to provide our customers the highest possible quality products and services and by so doing, build long term relationships based on mutual trust and respect

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 numerable 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.



2925 Lucy Lane • Franklin Park, IL 60131 • 847.451.0279 • 800.624.8919 • FAX 847.451.0379

www.InternationalCoatings.com