

# Specifications for Installation of Epoxy Coatings For Secondary Containment of Acids and Caustics - Tank Farms and other Light Traffic Areas

## Part 1 : Scope

### Product and Application

This specification describes the application of a two-part epoxy coating/quartz filled system applied at a minimum thickness of 60 mils on the floor and 20 mils on the walls.

#### 1.1 Acceptable Manufacturers

**ICO Super Guard Coating** as manufactured by International Coatings of Franklin Park, IL or approved equivalent epoxy resin flooring system.

#### 1.2 Performance Criteria

1. Tensile Strength (ASTM D-638)
  - Minimum : 6000 psi
2. Tensile Elongation (ASTM D-638)
  - Minimum: 6 %
3. Flexural Strength (ASTM D-790)
  - Minimum: 7000 psi
4. Hardness, Shore D (ASTM D-2240)
  - Maximum: 85
5. Gardner Impact (ASTM D-2794)
  - Minimum: 80 inch-pounds
6. Bond Strength to Quarry Tile
  - Minimum: 1000 psi
7. Vapor Transmission Rate (ASTM E-96)
  - Maximum: .07 perms
8. Water Absorption (ASTM D-570)
  - Maximum : .02% in 24 hours
9. 60° Gloss
  - Minimum: 100.
10. Chemical Resistance: must withstand a minimum of 72 hour immersion in the following : 50% sodium hydroxide, 15% sodium hypochlorite, 25% hydrofluorosilicic acid, 50% aluminum chlorohydrate, and Poly Aluminum Chloride.

#### 1.3 Materials

1. Component "A" shall be a modified epoxy resin of the epichlorohydrin bisphenol F novolac-type containing special flexibilizers for enhanced resilience. No solvents are allowed.
2. Component "B" shall be a blend of cycloaliphatic amines. No solvents are allowed.

#### 1.4 Applicator

Applicator must be a certified contractor of International Coatings with a minimum five years experience in applying similar systems.

#### 1.5 Surface Preparation

All existing surfaces that will be covered with the systems specified herein should be mechanically ground, shotblasted or sandblasted to yield a minimum 60 grit surface texture, as well as removing all loosely adhering coatings. Any greases and other contaminants must be removed as well.

**A. General**

1. All open cracks 1/8" and greater should be v-notched to a 1/2" width by 1/2" depth and cleaned of any debris. Such cracks should be filled with **ICO Gel** and struck off flush with the surrounding surface, followed by embedding a 4" wide fiberglass cloth over the repaired crack in **ICO Primer LV**.
2. All bug holes in wall must be prefilled with **ICO Gel**.
3. All straight line cracks shall be saw cut to a minimum 3/4" width and 1 1/4" depth centered over the original crack. Remove all dust and debris and fill as specified for expansion joint application.

**B. Protrusions Thru Coating Surfaces**

Cut a keyway of at least 1" x 1" around the perimeter of all drains, trenches, steel posts, etc. Remove any rust, sealants or coating from the drain ring, steels posts and pump.

**C. Expansion Joints**

1. Cut back and/or remove any joint backing or filler strips to a minimum of 1 1/2" deep.
2. Insert disposable filler in the joints to prevent filling with the overlayment materials and to allow for accurate location of final saw cuts in the overlayment.

**1.6 Material Application**

**A. Priming**

1. Floors
  - Apply **ICO Primer LV or LVFC** with a brush or roller at an application rate of about 200-250 SF/gallon, depending on porosity of concrete. Allow to dry tack free. Re-prime any dry-appearing areas.

**B. Patching**

1. Any deep holes (> 1/2" deep) should be patched with 100% solids epoxy patching compound, **ICO Quik Patch** and allowed to dry tack free.

**C. Floors**

1. Mix **Super Guard Coating, Part A** with a low-speed (<750 rpm) jiffy-style mixer for about 30 seconds, or until uniform in color, then mix in **Super Guard Coating, Part B** for another 30-60 seconds.
2. Dump contents onto floor in a ribbon pattern, squeegee, then back toll at a coverage rate of 80 SF/gallon.
3. Into the still wet liquid immediately broadcast in #35 grit clean, dry silica quartz to refusal. Allow to dry.
4. Sweep up excess sand, sand off jagged peaks and then apply a second coat of **Super Guard Coating** at 80 SF/gallon. Total millage (DFT): 60 mils.
5. Apply 1"x1" cant cove out of **Super Guard Coating** with filler around all floor/wall interfaces.

**D. Walls**

1. To concrete walls mix **Super Guard Coating Parts A and B** as above and apply with a roller at approximately 160 SF/gallon. Allow to dry tack free. Apply second coat of **Super Guard Coating** at the same coverage rate. Minimum wall thickness: 20 mils.

#### **E. Expansion Joints**

1. Remove disposable joint filler from the expansion joints by saw cutting the overlayment above all expansion joints exposing the full width and length.
2. Insert closed cell joint backing, using a large enough diameter to provide a 30% compression. The joint backing should be forced down in the joint to a depth equal to one half the width.
3. Caulk with **ICO Caulk X** and tool the bead to insure full and complete contact with the concrete. Finish bead should be neatly aligned with the saw cut joint edge with no gaps, strings, or bubbles.

#### **F. Trenches, Sumps**

1. Apply **ICO Liner** to 1/8" thickness on walls and floors.

**Note:** **Super Guard Coating** and **ICO Liner** can only be applied at temperatures down to 50°F.

### **1.7 Protection of Finished Work**

1. Prohibit foot traffic on floor for 24 hours after laying (at 70°F). At 50°F, this time should be extended to 48 hours.
2. Rinse off any chemicals that may come in contact within 7 days of installation with the freshly laid floor immediately.

### **1.8 Cleanup**

1. Dispose of all unused and waste materials.
2. Tools can be washed in warm, soapy water when wet, but after drying, can only be cleaned by grinding or with a paint stripper.
3. Unused resin can be set off with proper amount of hardener and disposed of in regular trash bins.

### **1.9 Warranty**

- Installer shall provide a one year warranty against delamination, chemical attack and normal wear and tear.