

Conklin Company Inc. TECHNICAL BULLETIN

B-10-93-37

Grain Bin Base Sealing

The System

The purpose of this bulletin is to offer general recommendations for waterproofing the base of grain bins. There are two applications addressed in this bulletin, the first system being a direct to metal exterior application and the second being a unique insulating system for dryer bins. Problems due to moisture seepage at the base of bins can spoil grain in storage and accelerate rusting of the metal curtain wall at the base of the bin. By choosing to seal the exterior of the bin with Conklin coatings, moisture and rust damage can be reduced or eliminated. **Please note:** *Conklin doesn't offer any kind of warranty for this type of water proofing system.*

Direct to Metal Exterior Application

Precautions

- 1.) These sealing procedures are applied to the exterior of bins only.
- 2.) Conklin acrylic coatings are water based and they require complete evaporation of water to cure. Do not apply Conklin coatings before or during rain, dew, fog, freezing temperatures or other conditions that will not permit complete curing.
- 3.) Do not apply Conklin coatings to uncured, wet or damp surfaces. All coatings **MUST** be applied in dry conditions.

Clean substrate to be coated with: *Rust Off*[®]

Rust Off Application: If possible, remove nuts and washers prior to Rust Off application. Acid etch grain bin with a 1:20 solution of Conklin's Rust Off rust and oxide film remover to remove all conditions which can affect the bond of coatings and caulk. Follow the Rust Off application with a thorough water rinse and allow the surface to dry completely before proceeding. Follow all application guide lines listed on product label.

Direct To Metal Application:

- 1) Prime all metal surfaces with Conklin's Encase[®] Metal Primer. Coverage rate is approximately 325 square feet per gallon. Allow 24 hours to dry.



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Additional dry time may be required at lower temperatures or high relative humidity.

- 2) Apply Conklin's Kwik Kaulk[®] acrylic caulking compound to areas where openings in the metal and support brackets occur. (See figure #1)
- 3) Apply a minimum of 1.5 gallons per 100 square feet of base coat to the bin wall and concrete in short intervals (6" wide strips). Immediately embed a 4" wide strip of Conklin's Spunflex polyester reinforcement fabric into the wet base coat. Precut slots in the fabric to allow for proper application around bolts. Center fabric over the bin wall and the concrete joint and immediately apply a second coat of base coat over the fabric at a minimum rate of .5 gallons per 100 square feet. Make sure the Spunflex is thoroughly embedded in base coat and that no voids are visible around support brackets. (See figure #2)
- 4) Replace and retighten all nuts and washers around bin support brackets.
- 5) Once the base coat and fabric are thoroughly dry, apply top coat at a minimum rate of 1.9 gallons per 100 square feet. The total application rate of base coat with Spunflex fabric embedded, plus top coat, shall be a minimum of 36-38 dry mils. Top coat should extend up the bin wall a minimum of 10" and a minimum of 6" across the concrete base. (See figure 3)

Grain Bin SPF Insulating System

- 1) Properly prepare exterior metal and concrete base prior to Spray Polyurethane Foam application. Follow the SPF manufacturer's recommendations for surface preparation.
- 2) Repair or replace any damaged support brackets, nuts or bolts.
- 3) Check to ensure bin tie downs are tight before application of foam and coating.
- 4) On bins with external stiffeners, if the stiffeners have a cavity, the stiffeners must be filled with foam to the height of the water seal. This step is accomplished by drilling a hole in the stiffener and injecting foam into the cavity behind the support stiffener. **Please note:** *Conklin doesn't offer any kind of warranty for this type of water proofing system.*
- 5) SPF application around the base of the bin shall average a minimum of 2.0 inches in thickness. The use of closed cell foam with a density of 2.8 – 3.0 is required for this application. The SPF shall be applied a minimum of 3 feet up the bin wall or the height of the interior false floor. SPFA recommended foam texture is required for this application.



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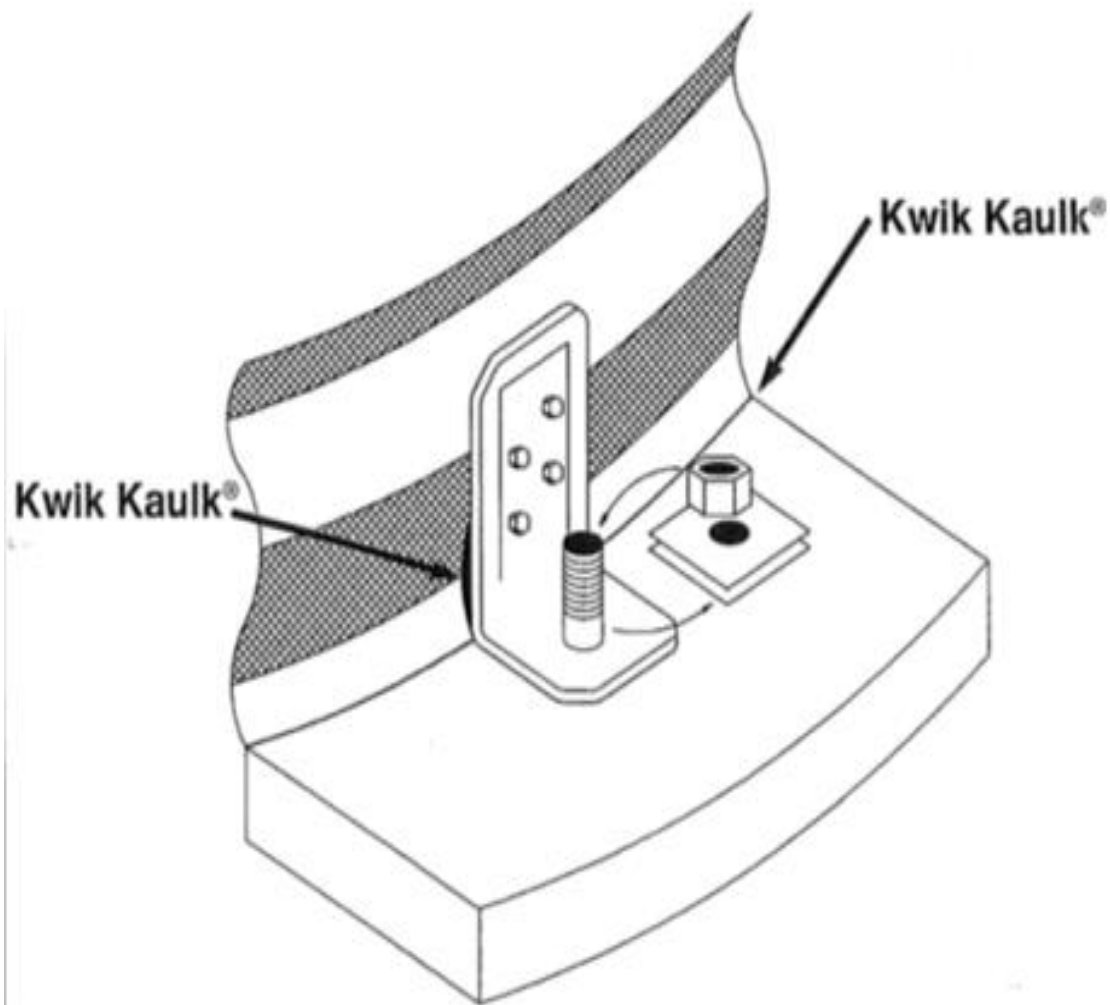
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- 6) Apply base coat of 1.9 gallons per 100 square feet. Back rolling base coat is recommended. After base coat is thoroughly dry, apply top coat at a rate of 1.9 gallons per 100 square feet. Allow ample drying time. Coating shall extend a minimum of 4" above SPF application. (See figure #4)

Figure #1



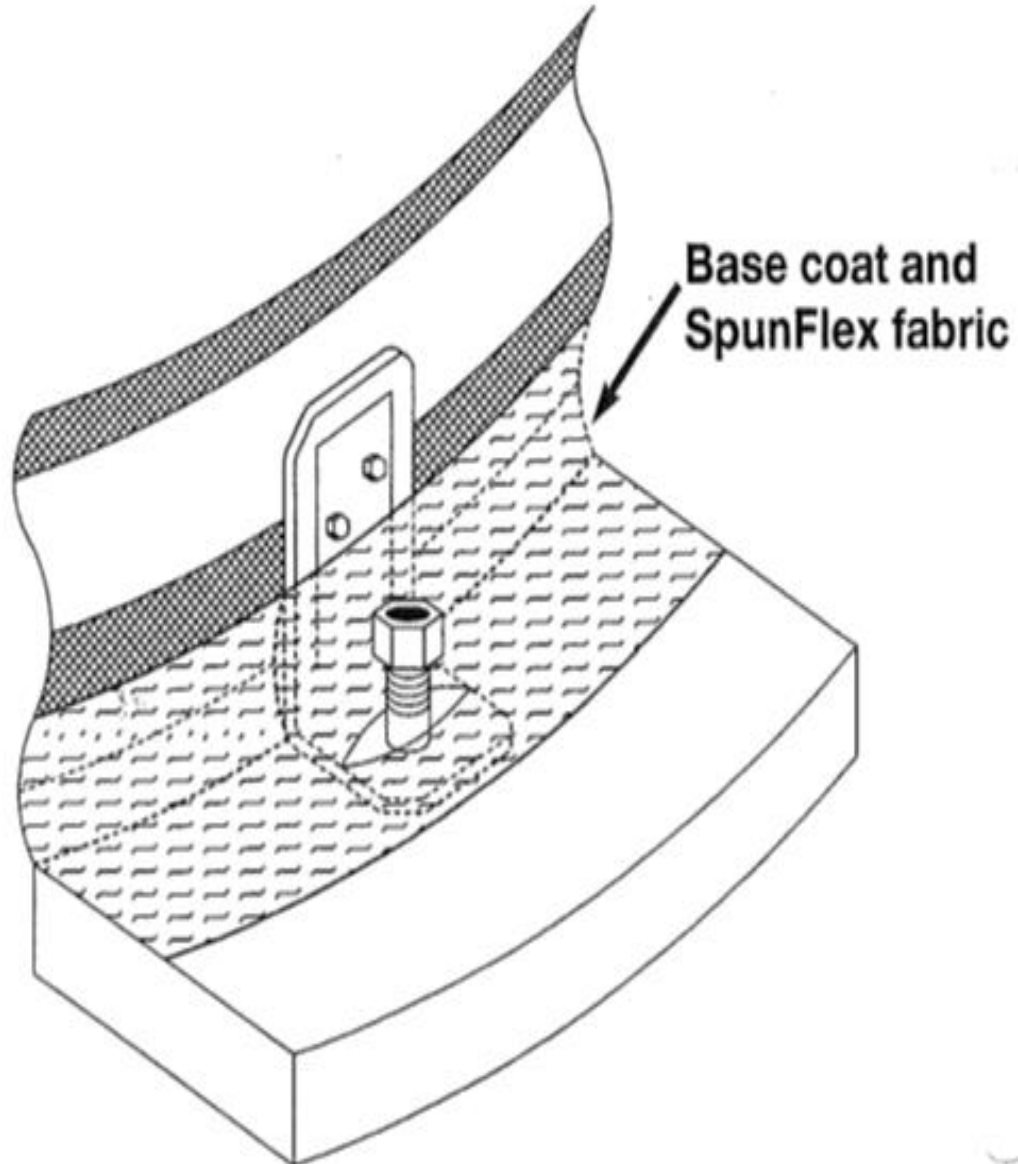
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Figure #2



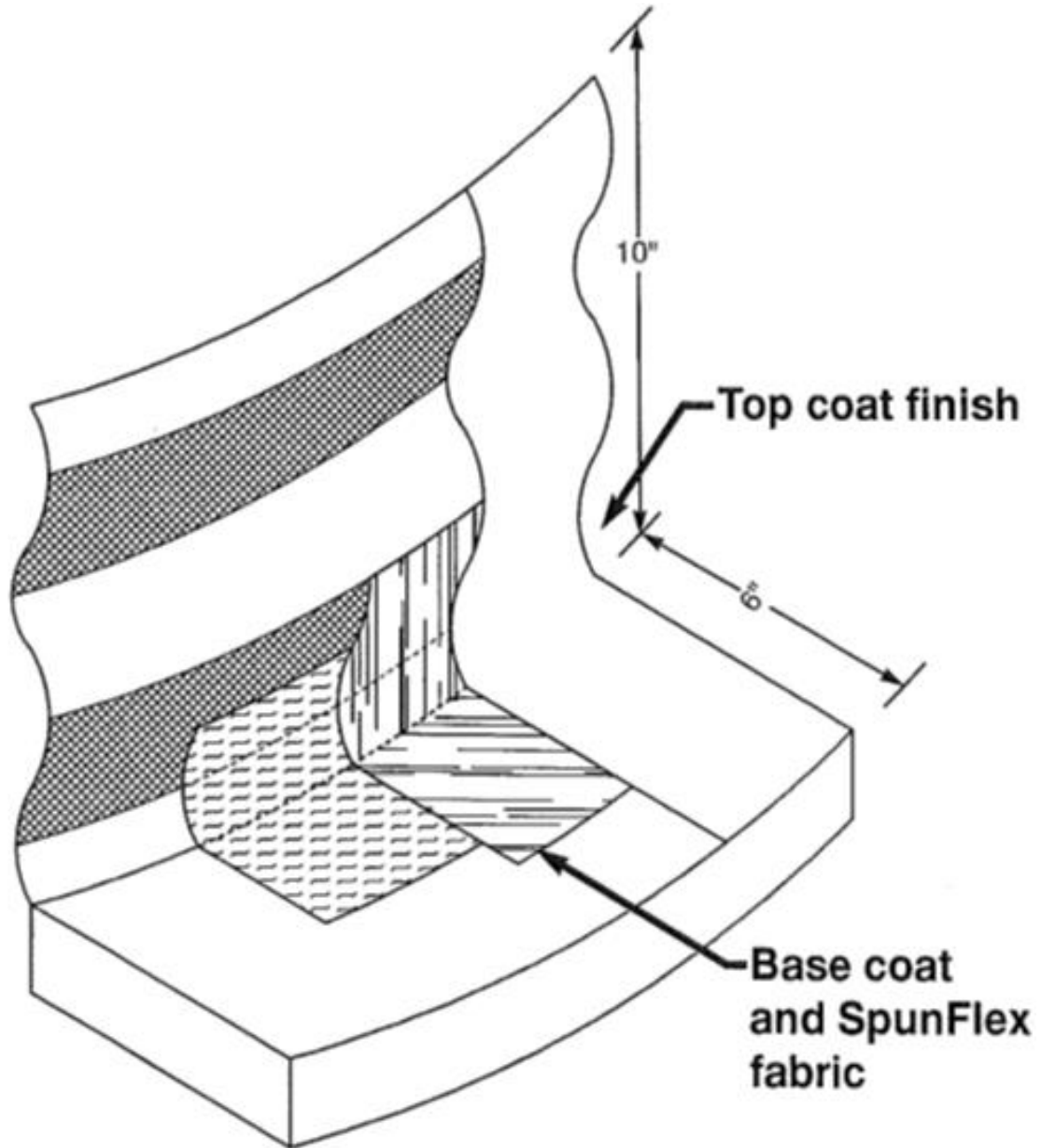
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Figure #3



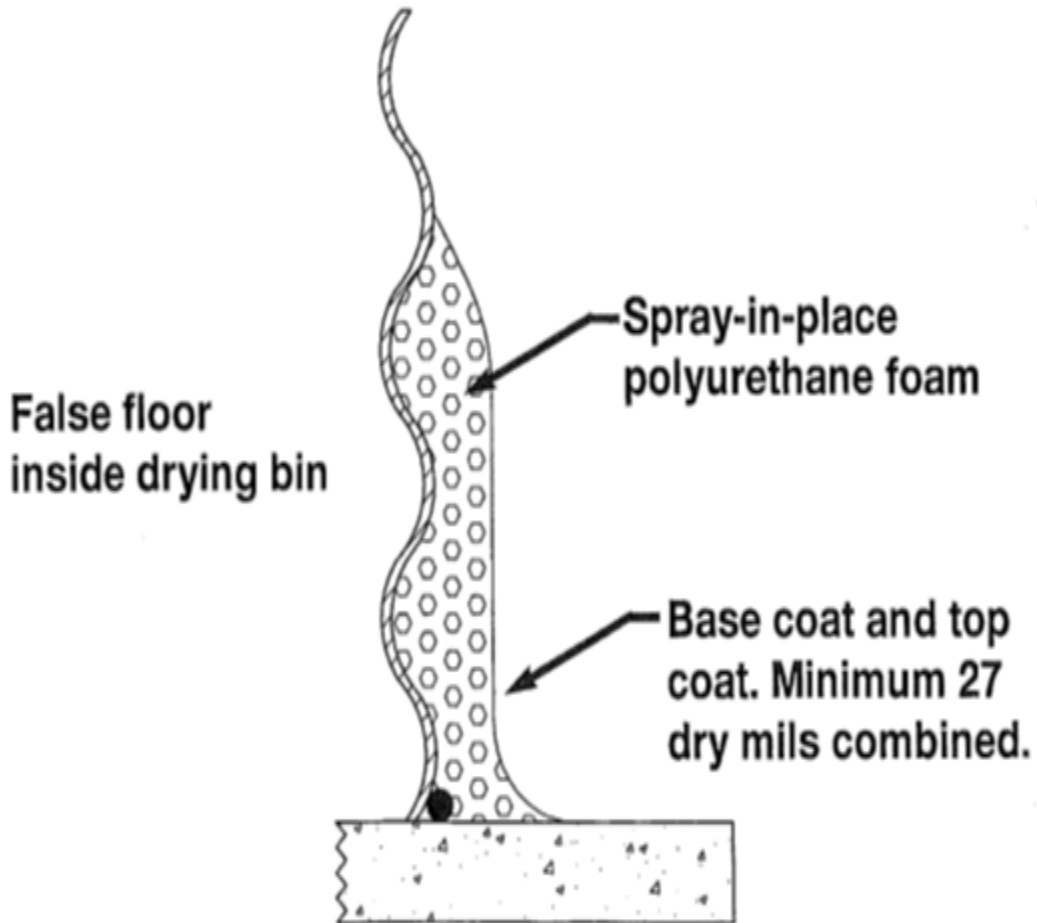
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Figure #4



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