

**Conklin Company Inc.**  
**TECHNICAL BULLETIN**  
B-10-12-48  
**Dry Adhesion Pull Test Procedures**

**Field adhesion test**

Adhesion testing for a variety of field applied coatings can yield great insight into the success or failure of a coating system. The Conklin Roofing Division has created a guideline for testing the adhesive properties of the various Conklin coatings on numerous substrates. This guideline establishes minimum adhesion values only and is not a guarantee that any system will perform adequately on all substrates.

**Previously Applied Acrylic Roof Coatings**

**Clean substrate to be coated with:** *WAC II*

**Application:** WAC II should be applied at full strength with a brush, roller, conventional airless sprayer or portable tank sprayer. The cleaner is designed to be applied at full strength – DO NOT DILUTE. Once applied, allow the cleaner to remain on the roof surface for a minimum of 20 minutes prior to water rinse, i.e., with high-pressure spray. Make sure to remove all residues and let roof surface dry thoroughly. To test for cleanliness, press a 3 to 4 inch piece of 2 inch clear packing tape to the cleaned and dried roof surface using hand pressure. Then, peel the tape off the roof surface. If it comes off easily and or is laden with dirt, degraded roofing material and other particulates, the roof is not cleaned satisfactorily. (See figure #1)

**Product to be used for pull test:** For best results, use the same product that was used on the original roof. Base coat should be used for the pull test if adding both base and top coat. Otherwise use top coat for the pull test. Product should be applied at 1.9 gallons per 100 square feet.

**Figure #1**



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### Membrane Coating System

**Clean substrate to be coated with:** *WAC II*

**Application:** WAC II should be applied at full strength with a brush, roller, and conventional airless or portable tank sprayer. The cleaner is designed to be applied at full strength – DO NOT DILUTE. Once applied, allow the cleaner to remain on the roof surface for a minimum of 20 minutes prior to water rinse, i.e., with high-pressure spray. Make sure to remove all residues and let roof surface dry thoroughly. To test for cleanliness, press a 3 to 4 inch piece of 2 inch clear packing tape to the cleaned and dried roof surface using hand pressure. Then, peel the tape off the roof surface. If it comes off easily and or is laden with dirt, degraded roofing material and other particulates, the roof is not cleaned satisfactorily.

**Product to be used for pull test:** *Tack Coat Primer*

Per the Membrane Coating Specification Guide:

Apply Conklin Tack Coat primer at a rate of 250-300 square feet per gallon with a brush, roller, or spray equipment. On most surfaces, the primer will appear an opaque, light gray color upon application and will dry to a glossy black appearance. (Do NOT proceed until primer is completely dry and has a glossy black appearance.)



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**Metal Roof Restoration**

**Clean substrate to be coated:** *Conklin Rust Off*

**Application:** Rusted metal must be cleaned and free of loose, flaky rust. New galvanized metal must be washed with *Conklin Mox* cleaner to remove oils. After the roof is properly cleaned the roof should be acid etched with *Conklin Rust Off* at a 1:20 solution followed with a thorough water rinse. Follow all product labels. Remove as much grime, dirt, grit and sludge as possible before applying Rust Off. Use product in accordance with material safety data sheets. Apply Rust Off with a brush or low pressure sprayer at a rate of 400 to 500 square feet per gallon of mixed solution (1:20 dilution). Once the solution is applied, agitate the surface of the roof with a stiff-bristle brush, broom or mop. DO NOT leave Rust Off on the metal surface longer than fifteen minutes or allow the product to dry on the surface. It may be necessary to pre-wet the surface prior to application. Let Rust Off penetrate surface 10 minutes or until rust appears to be loosened. Rinse thoroughly with high-pressure water. Heavier rust deposits may require strong solutions to effectively clean the roofing surface. Increasing water temperature greatly enhances performance, although Rust Off is completely miscible in cold water. To test for cleanliness, press a 3 to 4 inch piece of 2 inch clear packing tape to the cleaned and dried roof surface using hand pressure. Then, peel the tape off the roof surface. If it comes off easily and or is laden with dirt, degraded roofing material and other particulates, the roof is not cleaned satisfactorily.

**Product to be used for pull test:** *Conklin Encase Metal Primer* or if no primer is being used the base coat of choice should be used. Coverage rates will vary depending on roof condition. Conklin Encase should yield approximately 325 sq. ft. per gallon. Roof Coating Product should be applied at 1.9 gallons per 100 square feet.



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### Structural High Density Concrete

#### **Clean substrate to be coated:** *Power Wash*

Make sure the surface is dust free and no oil or other contaminants are present. If efflorescence (white, powdery salt deposits) is present, etch with a 10 to 15% solution of muriatic acid followed with a thorough water rinse. Let area dry thoroughly. To test for cleanliness, press a 3 to 4 inch piece of 2 inch clear packing tape to the cleaned and dried roof surface using hand pressure. Then, peel the tape off the roof surface. If it comes off easily and or is laden with dirt, degraded roofing material and other particulates, the roof is not cleaned satisfactorily.

#### **Product to be used for pull test:** *Prime Time or Prime Time Plus or if no primer is being used the base coat of choice should be used.*

Coverage rates will vary depending on roof condition. Prime Time should yield approximately 100-130 sq. ft. per gallon. Roof Coating Product should be applied at 1.9 gallons per 100 square feet.

### Smooth BUR

#### **Clean substrate to be coated:** *WAC II*

All loose dirt and debris shall be removed by vacuuming and / or power sweeping. Apply WAC II Cleaner full strength allow cleaner to stay on surface a minimum of 20 minutes (Pre-wetting surface may be required to cool surface, allow WAC II to remain liquid and increase working time) with recommended agitation of surface (Stiff bristle broom / floor broom) then pressure wash off all residue and let dry thoroughly.



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**Product to be used for pull test:** *Prime Time or Prime Time Plus Primer.* Coverage rates will vary depending on roof condition. Prime Time should yield approximately 100-130 sq. ft. per gallon. Roof Coating Product should be applied at 1.9 gallons per 100 square feet.

### Polyiso or Wood

**Clean substrate to be coated:** All loose dirt and debris shall be removed by vacuuming and / or power sweeping.

**Product to be used for pull test:** *Prime Time or Prime Time Plus Primer or if no primer is being used the base coat of choice should be used* Coverage rates will vary depending on roof condition. Prime Time should yield approximately 100-130 sq. ft. per gallon. Roof Coating Product should be applied at 1.9 gallons per 100 square feet.

### Recommended Field Dry Adhesion Test Method for Conklin Company, Inc. Roofing Products

- 1) Apply primer or roof coating to a well prepared substrate and while still wet, imbed a 1 inch wide strip of Spunflex fabric. The strip should be 14 inches long, but only imbed 10 inches of it. The Spunflex fabric should be imbedded into the coating. A layer of coating is needed between the fabric and the test substrate. (See figure #2)
- 2) Use a wet mil gauge to verify coating thickness. (See figure #3)

### Figure #2



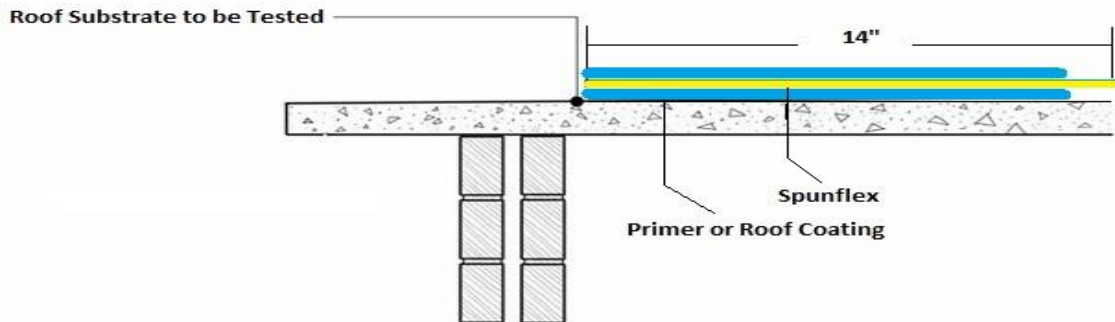
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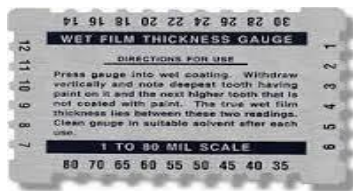
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- 3) Gently brush the Spunflex fabric with a paintbrush saturated with coating, to insure that the fabric is flat and imbedded within coating, and all air voids under fabric are removed. (See figure #2)

**Figure #3**

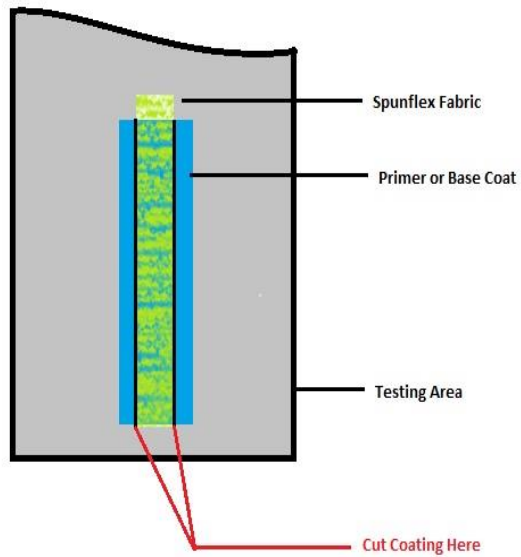


- 4) Allow the Conklin Roof Coating to cure for a minimum of 3 to 7 days. A lower temperature or high humidity will increase cure time requirements.
- 5) After curing is complete, cut the coating on both sides of the Spunflex fabric down to the substrate. If testing adhesion to a membrane or existing coating, carefully cut the roof coating through to the original coating. Do not cut membrane or existing coating. (See figure #4)

**Figure #4**



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- 6) Perform a peel test at a 180 degree angle to the substrate surface. Using a 0 to 20 lb. fish scale to approximate the force required to cause a failure. (See figure #5)

**Figure #5**



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**Failure Modes:**

**Adhesive Failure:** Coating disbonds / fails at the coating / substrate interface.

**Cohesive Failure:** Coating fails within itself or substrate is removed with the coating. The minimum load required is 2 to 3 pounds pull and 100% cohesive failure, these are the optimal results. Should your results differ or you are uncertain how to interpret the result please contact Conklin Company, Inc. Roofing Systems Division.

