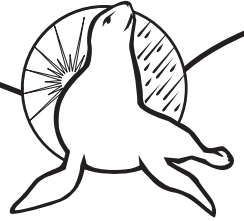


Energy Seal Coatings



WARRANTY SPECIFICATIONS FOR COATING **METAL ROOFING**

1.0 SCOPE

The intention of this specification is to outline the procedures for the application of Energy Seal Coatings reflective roof coatings for the purpose of coating **METAL ROOFING** surfaces. These suggested specifications describe materials, methods and conditions necessary for the proper application of Energy Seal Coatings. Actual application requirements are the responsibility of the installer.

2.0 MATERIALS

All Materials used shall be manufactured by and or approved by Advanced Coating Systems, Inc. Please refer to our product data sheets for technical specifications:

2.1 Elastomeric Coating System

ACU-SHIELD	Acrylic, elastomeric roof coating.
ACU-CAULK:BG	Acrylic, elastomeric brush grade caulk.
ACU-CAULK:FG	Fibered, acrylic, reinforced, elastomeric flashing grade caulk.
ACU-RUST PRIME	Durable primer for rusted metal surfaces.
ACU-TAC	Bonding agent.
ACU-FABRIC:SB	Spunbound polyester reinforcing scrim.
ACU-GLOSS	Clear acrylic finish.

2.2 Delivery and storage

2.3 Materials shall be delivered in their original, tightly sealed containers or unopened packages, all clearly labeled with the manufacturer's name, file number, and lot numbers.

2.4 Materials shall be stored out of the weather in their original tightly sealed containers or unopened containers as recommended by the manufacturer. Do not allow liquid coating to freeze.

3.0 SURFACE PREPARATION

3.1 Preparation shall include all requirements specified by Advanced Coating Systems, Inc. to ensure proper adhesion of the Energy Seal Coatings products to the existing substrate. **New galvanized METAL ROOFING surfaces must be allowed to cure a minimum of 90 days prior to application or treated with approved surface conditioners by the manufacturer.**

3.2 Preparation shall include but not limited to the following:

3.3 All unnecessary and non-functional equipment and debris shall be removed from the roof.

3.4 Substrate must be pressure-washed. A minimum working pressure of 3,000 psi shall be used to remove all dirt, dust, previous paints & coatings which are delaminating as well as waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc). Roto-spray tip is recommended to expedite metal surface cleaning. Thoroughly rinse roof surface to make sure there is no residue left from the cleaning agent.

3.5 HVAC condensate drains shall be permanently routed to roof drains or off roof so as to not adversely affect roof coating system.

3.6 All mechanical fasteners shall be checked for integrity; re-tighten or replace as necessary. Stripped out fasteners shall be replaced using a larger diameter fastener.

- 3.7 Apply ACU-CAULK:FG or ACU-CAULK:BG over all fastener heads, insuring each fastener head is completely sealed without any voids, gaps or holes.
- 3.8 Unsound rust shall be mechanically abraded to remove all loose rust. Metal panels deteriorated to the point that their structural integrity is compromised shall be replaced.
- 3.9 Check all seams to make sure they are tight and flush. Excessive gaps or deflections between panels shall be eliminated by installing additional screws or rivets as necessary to restrict deflection to no more than 1/4 inch.
- 3.10 Reinforce all horizontal (end-laps) and vertical (side-laps) along with roof terminations and flashing, around drains, scuppers and skylights, the base of all vents and around any other penetration with one of the following:
 - 1. - Apply an 8" wide coat of ACU-CAULK:FG to the perimeter of the penetration. Place a 6" wide piece of ACU-FABRIC onto the wet ACU-CAULK:FG. Feathered the ACU-CAULK:FG out 2 inches Passed The ACU-FABRIC.
 - 2. - Apply a 6" wide coat of ACU-CAULK:BG to the perimeter of the penetration to a thickness of 40 - 60 mils.
 - 3. - Apply a coat of ACU-TAC 8" wide. While the ACU-TAC is still wet lay a 6" wide piece of ACU-FABRIC onto the wet ACU-TAC. Smooth the ACU-FABRIC out; making sure to eliminate air bubbles, fishmouths, puckers, folds or any other void. Apply another coat of ACU-TAC on top of the ACU-FABRIC. Make sure the ACU-TAC has completely saturated the ACU-FABRIC.
- 3.11 When calculating roof area add 25% of the floor area of the building to compensate for the pitch of the roof and the profile of the metal roofing pane or measure one roof panel using a tape measure or string to calculate the actual surface area of the roof panel.

4.0 COATING APPLICATION

- 4.1 Examine substrate to receive roof coating. Do not proceed with installation of Energy Seal Coatings until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer.
- 4.2 Treatment of Residual Asphalt: Installer shall make every effort to remove all loosely adhered asphaltic roofing elements. Removal efforts must include the use of pressure-washers, scrapers, wire brushes, wire-wheels, or other similar tools. Residual asphaltic areas are to be coated with ACU-RUST PRIME or ACU-RUST PRIME.
- 4.3 All existing sound rust shall be primed with ACU-RUST PRIME in the following manner:
 - 1 - No rust, prime roof surface with ACU-RUST PRIME at a rate of 300 sq.ft per gallon
 - 2 - Light or Flash rust areas will be primed with ACU-RUST PRIME at a rate of 250 - 300 sq.ft. per gallon
 - 3 - Medium to Heavy rust areas will be primed with ACU-RUST PRIME at a rate of 100 - 150 sq.ft. per gallon.
- 4.4 ACU-RUST PRIME must be allowed to cure for 24 – 48 hours depending on humidity and temperature. The roof is to be inspected for defects, flaws or holidays and repaired if necessary.
- 4.5 Apply ACU-SHIELD elastomeric coating by airless spray equipment, using a multi-pass spray technique to ensure even application to all sides of metal panel corrugations. Make a conscious effort to apply coating into crimped or presealed seams that have not been detailed. Use a wet film gauge often to measure film thickness. Wet film thickness should be twice as thick as the desired dry film thickness.
- 4.5 Apply first coat of ACU-SHIELD: First coat shall be applied perpendicular to the ribs of the metal roofing. Dry film thickness shall be approximately 10 mils.
- 4.6 Apply second coat of ACU-SHIELD: Second coat shall be applied parallel to the ribs of the metal roofing. Dry film thickness shall be approximately 10 mils.
- 4.7 Apply third coat of ACU-SHIELD: First coat shall be applied perpendicular to the ribs of the metal roofing. Dry film thickness shall be approximately 10 mils.

- 4.8 Each coat must be allowed to cure for 24 - 48 hours depending on humidity and temperature. The roof is to be inspected for defects, flaws or holidays and repaired if necessary before a subsequent coat is applied.
- 4.9 Apply ACU-GLOSS clear acrylic coating is to be applied only after the ACU-SHIELD has thoroughly cured and dried for at least 24 hours.
- 4.8 Each coat must be allowed to cure for 24 - 48 hours depending on humidity and temperature. The roof is to be inspected for defects, flaws or holidays and repaired if necessary before a subsequent coat is applied.

5.0 APPLICATION RATES

- 5.1 **Standard** 10-year warranty: Detail as per 3.10. Apply ACU-RUST PRIME (see 4.4) Apply two coats of ACU-SHIELD (see 4.4 - 4.5) at a rate of 1.0 gal./100 sq.ft., per coat. Minimum dry film thickness 20 mils, excluding seam, flashing, joints and other detail areas.
- 5.2 **Extended** 12-year warranty: Detail as per 3.10. Apply ACU-RUST PRIME (see 4.4) Apply two coats of ACU-SHIELD (see 4.4 - 4.5) at a rate of 1.0 gal./100 sq.ft., per coat. Apply one coat of ACU-GLOSS on top of the ACU-SHIELD at a rate of 1.0 gal./ 200 sq.ft. (see 4.9). Minimum dry film thickness 20 - 23 mils, excluding seam, flashing, joints and other detail areas.
- 5.3 **Elite** 15-year warranty: Detail as per 3.10 Apply ACU-RUST PRIME (see 4.2) Apply three coats of ACU-SHIELD (see 4.4 - 4.6) at a rate of 1.0 gal./100 sq.ft., per coat. Apply one coat of ACU-GLOSS on top of the ACU-SHIELD at a rate of 1.0 gal./ 200 sq.ft. (see 4.9). Minimum dry film thickness 30 - 33 mils, excluding seam, flashing, joints and other detail areas.

6.0 RESTRICTIONS / LIMITATIONS

- 6.1 This system is to be used only in conjunction with commonly accepted roofing standards but not limited to the following:
- 6.2 No application of materials shall commence during inclement weather or when precipitation is imminent. **No thinning of materials is permitted.**
- 6.3 No materials are to be applied to wet, dirty, or frozen surfaces.
- 6.4 No materials are to be applied at temperatures below 40° F.
- 6.5 Do not apply when dew point is within 5°F of of the surface temperature or if freezing temperatures (32°F or lower) are forecasted for the following 24 hours after application of coating products.
- 6.6 No materials are to be applied at ambient air temperatures above 100° F.
- 6.7 No materials are to be applied at relative humidity levels above 88%.
- 6.8 Do not spray apply if the wind velocity exceeds 10 mph without taking precautions to eliminate over spray.
- 6.9 Take all necessary precautions to protect unrelated surfaces from coating over spray or spillage
- 6.7 In conjunction with the final inspection, all debris, containers, materials and equipment are to be properly removed from the job site. Grounds are to be cleaned undamaged and acceptable to the owner.
- 6.8 Reflectivity of coatings may be reduced if roof surface is not cleaned on a regularly scheduled basis.
- 6.9 Ponding water areas must be repaired prior to any coating application to allow water to drain off the roof.

CAUTION: Do not apply within two hours of sunset, rain, fog or freezing temperatures. Energy Seal Coatings must be completely dry before exposing to water or foot traffic. Keep Energy Seal Coatings containers covered when not in use. Dispose of all containers in accordance with state and local environmental regulations. Keep away from children. If ingested, DO NOT induce vomiting. Call Physician immediately.

Our suggested installation specifications are based on information from laboratory and field testing which we believe to be reliable and correct; however, accuracy and completeness of said tests are not guaranteed and not to be construed as a warranty, either expressed or implied. Since the use of the material is beyond manufacturer's control, buyer assumes all risk whatsoever as to their use or results obtained. We guarantee our products to conform to Advanced Coating Systems, Inc. quality control. Advanced Coating Systems, Inc. warrants only the standard quality of material. Manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proved to be defective.

Manufactured by Advanced Coating Systems, Inc.

Www.energy-seal.com

Seal It. Conserve It. Protect It.

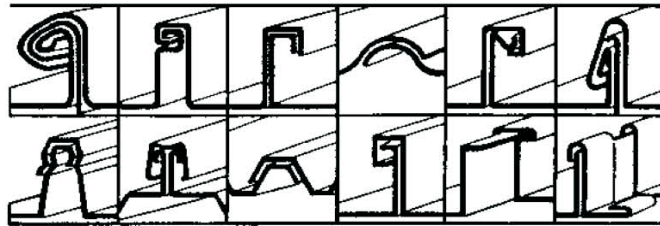
800-587-3758

METAL ROOF INSPECTION REPORT

Prepared for _____ Title _____ Date _____
 Company _____ Street Address _____
 City/State/Zip _____
 Phone _____
 Building/Roof Identification Name or No. _____
 Submitted by _____

THE ROOF –

Per drawing at right indicate closest design of roof.



Size of roof area _____ (square feet)

Age of roof _____ (years)



Dead Level



Less than 1" Rise Per Foot



1" to 2" Rise Per Foot



3" Rise Per Foot or more

Previously Coated? Yes No Factory Finish? Yes No If yes, what kind of finish? _____

Maintenance Product? Yes No If finish in Kynar 500 or metal roof panels were previously coated with a silicone-based coating, please contact the Technical Service Department for surface preparation recommendations.

ROOF CONDITION – Indicate condition of roof below:

- Paint Peeling/Flaking Yes No _____ %
 Surface Rust (light) Yes No _____ %
 Flaking, Scaling Rust (heavy) Yes No _____ %
 Panel/Panel Section Replacement Yes No _____ %
 Leak Problems Yes No _____ %

DETAILS

No Action
 Action

Fasteners _____
 Skylights _____
 Ridge Cap _____
 Stacks/Vents _____
 Seams (horizontal) End-laps _____
 Seams (vertical) Side-laps _____
 Gutters _____
 Contaminants _____

Other Comments: _____

This inspection has been performed solely for the owner's benefit and indicates only that the described items have been visually inspected in order to determine, to the extent feasible, whether such details need attention in the inspector's opinion. Neither the performance of this inspection nor any information contained in this inspection report implies the acceptance of any particular roof design, installation procedure or roof component.