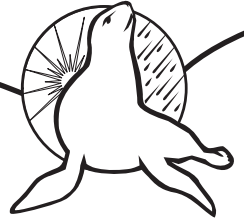


Energy Seal Coatings



INSTALLATION 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-WASH	Pre-treatment, water soluble detergent.
ACU-TAC	Advanced bonding adhesive to secure polyester scrim.
ACU-FABRIC:SB	Spunbound polyester reinforcing scrim.
ACU-GLOSS	Clear acrylic finish.
ACU-TAPE	Fabric reinforced butyl adhesive tape

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 to remove oil residue.**

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 with ACU-WASH. A minimum working pressure of 1,500 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). Thoroughly rinse roof surface after cleaning. 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 roof terminations and flashing, around drains, scuppers and skylights, the base of all vents and around any other penetration with the following:
- Apply an 6" wide coat of ACU-CAULK:BG to the perimeter of the penetration. Place a 4" wide piece of ACU-FABRIC onto the wet ACU-CAULK:BG. Apply a second coat of ACU-CAULK:BG on top of the ACU-FABRIC, feathering it out 2 inches passed the ACU-FABRIC.
- 3.11 Reinforce all horizontal (end-laps) and vertical (side-laps) panel seams:
- 1 - Horizontal seams:**
Apply an 6" wide coat of ACU-CAULK:BG to the perimeter of the penetration. Place a 4" wide piece of ACU-FABRIC onto the wet ACU-CAULK:BG. Apply a second coat of ACU-CAULK:BG on top of the ACU-FABRIC, feathering it out 1 inches passed the ACU-FABRIC, on both sides.
- 2 - Vertical seams:**
Apply an 4" wide coat of ACU-CAULK:BG to the perimeter of the penetration. Place a 2" wide piece of ACU-FABRIC onto the wet ACU-CAULK:BG. Apply a second coat of ACU-CAULK:BG on top of the ACU-FABRIC, feathering it out 1 inch passed the ACU-FABRIC, on both sides. **OR** Apply ACU-TAPE to the affected area by first cutting the ACU-TAPE to the desired length. Peel off plastic release liner and press into place, assuring all bubbles, buckles and creases are pressed out. ACU-TAPE is not designed for long term exposure, it must me top coated with ACU-SHIELD.
- 3.12 When calculating roof area add 20% 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. **OR** Apply ACU-TAPE to the affected area by first cutting the ACU-TAPE to the desired length. Peel off plastic release liner and press into place, assuring all bubbles, buckles and creases are pressed out. ACU-TAPE is not designed for long term exposure, it must me top coated with ACU-SHIELD.

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 Use a wet film gauge to determine coating thickness every 500 sq.ft. The wet film thickness should be at least twice as thick as the desired dry film thickness per coat. For instance, one coat of ACU-SHIELD is to be applied at a thickness of 10 DRY mils. The wet film thickness should be 20 mils.
- 4.6 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 on to crimped or pre-sealed metal 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.
- 4.7 Apply first coat of ACU-SHIELD at a rate of 1.25 gallons per 100 square feet. First coat shall be applied perpendicular to the ribs of the metal roofing. Dry film thickness shall be approximately 10 mils.
- 4.8 Apply second coat of ACU-SHIELD at a rate of 1.25 gallons per 100 square feet. Second coat shall be applied parallel to the ribs of the metal roofing. Dry film thickness shall be approximately 10 mils.
- 4.9 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.
- 4.10 Apply ACU-GLOSS clear acrylic coating; at a rate of 1 gallons per 250 square feet, is to be applied only after the ACU-SHIELD has thoroughly cured and dried for at least 24 hours.
- 4.11 Each coat must be allowed to dry 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 1.25 gal./100 sq.ft., per coat. Minimum dry film thickness 20 mils, excluding seam, flashing, joints and other detail areas.
- 5.2 Contact your sales representative for additional extended warranty options.

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 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
- 6.10 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.

6.11 Reflectivity of coatings may be reduced if roof surface is not cleaned on a regularly scheduled basis.

6.12 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