

SECTION 07 56 00  
Fluid Applied Roofing



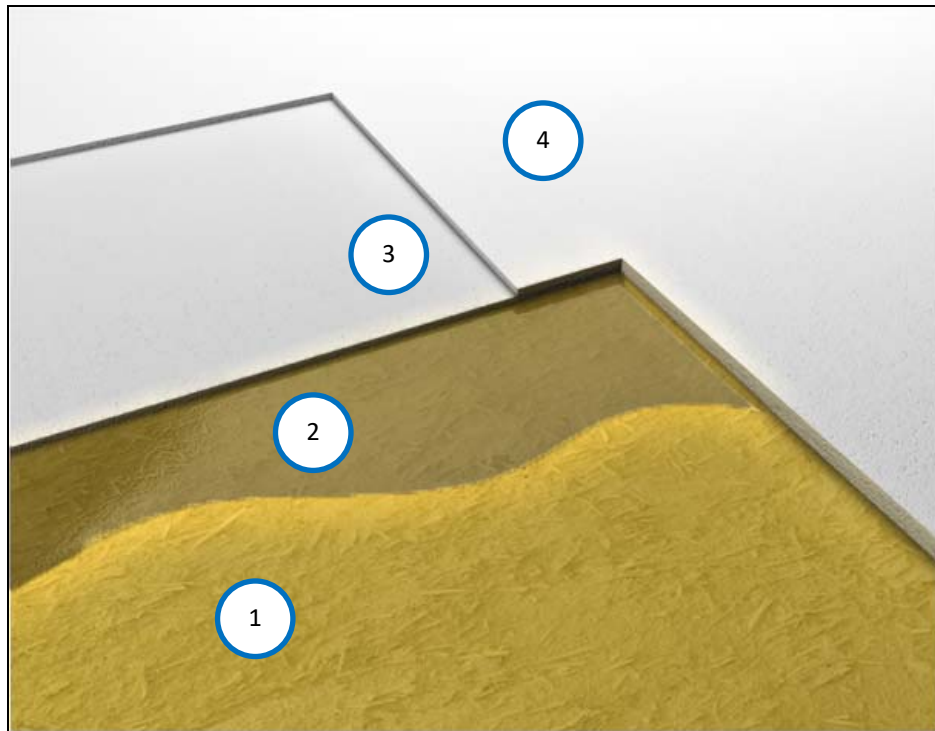
**Energy Seal Coatings**

**Acu-Shield {acrylic}**

# AGED POLYURETHANE FOAM (SPF)

## Roof Coating System

### ARCHITECTURAL GUIDE SPECIFICATION



#### Legend

1. Substrate
2. Acu-Prime All
3. Acu-Shield
4. Acu-Shield

No	Product	Minimum Dry Film Thickness			
		10 years		15 years	
		gal/ sq.	DFT	gal/ sq.	DFT
2	Acu-Prime All	1/2 gal		1/2 gal	
3	Acu-Shield	1.25 gal	10 mils	1.75 gal	15 mils
4	Acu-Shield	1.25 gal	10 mils	1.75 gal	15 mils
<b>Total System Thickness</b>		<b>20 Mils</b>		<b>30 Mils</b>	

## **PART 1 – GENERAL**

This document provides specifications for the application of product to roofing surface. This specification should be used only as a general guide, with the addition of specific details as different job conditions warrant.

These tools include roofing products, coverage rate, installation procedures with ENERGY SEAL COATINGS™ Roofing Products and complementary products. Final determination of the fitness of the application of any ENERGY SEAL COATINGS™ product shall not be made by anyone other than an authorized representative of ENERGY SEAL COATINGS™ Roofing Products.

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- A. American Society for Testing and Materials Publication (ASTM)
- B. Underwriters Laboratories Building Materials Directory
- C. CRRC – Cool Roof Rating Council
- D. California Building Standards Code - Title 24
- E. Miami-Dade Board and Code Administration
- F. LEED – Green Building Council
- G. NRCA Roofing and Waterproofing Manual
- H. Factory Mutual RoofNav Directory
- I. Energy Star guidelines for energy efficiency (Roof Coatings)
- J. Florida Building Code Directory
- K. ENERGY SEAL COATINGS™ Details, Drawings, Notes and Application Procedures

1.2 REFERENCES:

- A. ASTM C 1371 – Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emitters
- B. ASTM C 1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Probable Solar Reflectometer
- C. ASTM D 522 - Standard Test Method for Mandrel Bend Test of Attached Organic Coatings
- D. ASTM D 562 - Standard Test Method for Consistency of Paint Measuring Krebs Units (KU) Viscosity Using a Stormer-Type Viscometer
- E. ASTM D 1079 – Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials
- F. ASTM D 117 – Standard Guide for Evaluating Nonwoven Fabrics
- G. ASTM D 1653 – Water Vapor Transmission of Organic Coating Films
- H. ASTM D 1682 – Standard Method for Test for Breaking Load and Elongation of Textile Fabrics.
- I. ASTM D 2196 – Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer
- J. ASTM D 2240 – Standard Test Method for Rubber Property – Durometer Hardness
- K. ASTM D 2369 – Standard Test Method for Volatile Content of Coatings
- L. ASTM D 2370 – Standard Test Method Test Method for Tensile Properties of Organic Coatings

- M. ASTM D 2697 – Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings
- N. ASTM D 3786 – Standard Test Method for Bursting Strength of Textile Fabrics – Diaphragm Bursting Strength Test Method
- O. ASTM D 6083 – Standard Specification for Liquid Applied Acrylic Coating Used in Roofing
- P. ASTM D 6694 – Standard Specification Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing
- Q. ASTM E 96 – Standard Test Method for Water Vapor Transmission of Materials
- R. ASTM E 108 - Standard Test Method for Fire Tests of Roof Coverings
- S. ASTM E 1980 – Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces
- T. ASTM G 21 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

### 1.3 QUALITY CONTROL:

- A. The manufacturer shall certify that the contractor is authorized and approved for the Application of their materials.
- B. The manufacturer shall warranty the system is free from defects in materials, for the stated term of the warranty. The warranty shall be issued within thirty (30) days of project completion.
- C. The manufacturer shall certify that the materials submitted have been used in like application and that they have been actively engaged in the manufacture of these materials for a minimum period of 20 years prior to Submittals, as required.
- D. Installer Qualifications:
  - 1) This roofing system must be installed by an ENERGY SEAL COATINGS™ authorized Installer in compliance with written Application Specifications as approved by ENERGY SEAL COATINGS™ Technical Services.
  - 2) There must be no deviations without the PRIOR WRITTEN APPROVAL of ENERGY SEAL COATINGS™ Technical Services.
  - 3) Installer must provide written proof of required licenses, insurance and permits, as required, prior to the project start date.
  - 4) The Installer must provide a copy of the ENERGY SEAL COATINGS™ Warranty Request Form, prior to the project start date.
  - 5) Upon completion of the installation, an inspection will be conducted by an ENERGY SEAL COATINGS™ Representative to ascertain that the roofing system has been installed according to ENERGY SEAL COATINGS™ published Application Specifications and details applicable at the time of bid.

### 1.4 SUBMITTALS:

- A. Product Data: Provide current standard printed product literature indicating characteristics of materials and accessories:
  - 1) Technical data sheets
  - 2) Application procedures
  - 3) Safety data sheets
- B. Warranty Documentation: Submit 2 copies of manufacturer warranty for the period stipulated.
- C. Shop Drawings: Submit a scale drawing illustrating cold fluid-applied roof coating system, including project plan, size, joint reinforcing, flashing details and attachment for review and approval by Owners Representative and Roof Coating Manufacturer.

### 1.5 JOB CONDITIONS:

- A. To proceed with proper conditions, the Installer must be aware of the following:
  - 1) UV curing time for all products is critical. The Installer must allow for sufficient cure time for each product. Please be aware that outside temperatures and humidity will be a factor.
  - 2) Do not begin work if rain or heavy dew is expected within twenty-four (24) hours of application.
  - 3) Do not begin work if temperatures are expected to fall below 50 degrees Fahrenheit and over 104 degrees Fahrenheit during the duration of the job.

- 4) Other environmental conditions such as mist, dew, extreme temperatures, and condensation can affect products in an inconsistent way.

#### 1.6 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver materials to jobsite in manufacturer's unopened and undamaged containers bearing the following information:
  - 1) Name and address of manufacturer
  - 2) Product name and identification code
  - 3) Lot or batch number, which is to be noted on Warranty documents.
- B. Store coating materials at a minimum of 50°F (10°C) prior to use or as otherwise recommended by the manufacturer. Protect materials from freezing. Protect materials from prolonged exposure to temperatures exceeding 105°F (40.6°C).

#### 1.7 PROTECTION OF PROPERTY:

- A. Contractor shall take proper precautions to protect owner's property against damage and overspray. The use of shield boards, masking's and protective coverings shall be used as necessary. ENERGY SEAL COATINGS™ is not responsible for damages caused by the overspray of any of its products.

#### 1.8 PRE-INSTALLATION MEEETING:

- A. Prior to the beginning of work, convene a conference between all parties involved in the project to review site conditions, system requirements, submittals, installation procedures, schedules, required inspections and the coordination with other work on the project.

#### 1.9 ADHESION TEST:

All roofs must be pre-qualified by an ENERGY SEAL COATINGS Representative or an ENERGY SEAL COATINGS certified contractor by performing an adhesion test, on the roof area to receive the ENEREGY SEAL COATING roof coating system. Contact manufacturer for testing protocol. Test results must be approved by ENERGY SEAL COATING prior to the commencement of the project.

#### 2.0 WARRANTY:

- A. Manufacturer's Material Warranty: Provide manufacturer's material only warranty under provisions of this section; for supply of material only, limited to amounts necessary to make repairs to areas of the system deemed to have been manufactured incorrectly.
  - 1) ENERGY SEAL COATINGS™ 10 YEARS MATERIAL WARRANTY – minimum dry film thickness, 24 mils
  - 2) ENERGY SEAL COATINGS™ 15 YEARS MATERIAL WARRANTY – minimum dry film thickness, 34 mils
- B. Manufacturer's Labor & Material Warranty: Provide manufacturer's labor and material warranty in accordance with project specifications. Contractor shall submit written warranty request form to the manufacturer and not begin project until the warranty request is approved, by manufacturer.
  - 1) ENERGY SEAL COATINGS™ 10 YEARS MATERIAL WARRANTY – minimum dry film thickness, 24 mils
  - 2) ENERGY SEAL COATINGS™ 15 YEARS MATERIAL WARRANTY – minimum dry film thickness, 34 mils (contact manufacturer for Labor & Material fee schedule)

## **PART 2 – PRODUCTS**

#### 2.1 ACCEPTABLE MANUFACTURER:

Advanced Coating Systems, Inc. - Brand Name: Energy Seal Coatings  
2230 Towne Lake Pkwy. Bldg.1000, Ste.150  
Woodstock, GA 30189  
Phone: (678)445-0040; Website: [www.energy-seal.com](http://www.energy-seal.com)

#### 2.2 PRODUCTS:

- A. Acu-Prime All – a fast drying, water-based, multi-purpose primer used on non-metallic surfaces.
- B. Acu-Shield – single component, water-based, highly reflective, 100% acrylic elastomeric coating.

#### 2.3 PRELIMINARY DETAIL INSPECTION:

Inspect preliminary work/ flashing details for problem areas (e.g., gaps, cracks, fish mouths, air pockets, etc.) to ensure that work is complete and satisfactory. Inform project architect and ENERGY SEAL COATINGS™ representative when all preliminary work and flashing details are complete and the Installer is ready to proceed with application of ENERGY SEAL COATINGS™ Roofing System. Allow a minimum of two weeks for the interim inspection. Please be advised that technical on-site support for instructing certified contractors in the proper application of the ENERGY SEAL COATINGS™ Roofing System is available; contact ENERGY SEAL COATINGS™ for onsite support fee schedule.

#### 2.4 EXAMINATION:

- A. Verify that substrates surface is durable, free of frozen matter, dampness, loose particles, and/ or foreign matter detrimental to adhesion of application of roof coating systems.
- B. Verify that substrate surfaces are smooth and not detrimental to full contact bond of roof coating system.
- C. Verify items that penetrate surfaces to receive roof coating system are securely installed and suitably flashed.
- D. Verify that substrate is adequately supported and firmly fastened in place.
- E. Verify that roof deck has a minimum slope of 0.25" / foot.
- F. Verify that roof does not have areas of ponding water.
- G. Verify that all contiguous walls are properly waterproofed.
- H. Verify that roof deck does not hold/or contain entrapped water.

#### 2.5 PROCEDURE, COVERAGE RATE & APPLICATION INSTRUCTIONS:

- A. Surface Preparation: Surface to be repaired or coated must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances. ENERGY SEAL COATINGS™ restoration system is approved for application over Sprayed Polyurethane roofing having positive drainage.
  - 1) Remove all loose aggregate by sweeping or vacuum.
  - 2) Surface to be repaired or coated must be clean in such a way as to not damage the Polyurethane Foam.
  - 3) Existing substrate must be properly waterproofed, using the appropriate ENERGY SEAL COATINGS™ products or systems.
  - 4) All necessary repairs shall be made to the existing roof according to NRCA (National Roofing Contractors Association) guidelines.
  - 5) If ponding water is present in any area of the roof for more than 48 hours after a rain, use ENERGY SEAL COATINGS™ Acu-Flex:100 (silicone) roof coating system.
- C. Apply ENERGY SEAL COATINGS™ Acu-Prime All over the entire substrate surface.
  - 1) The coverage rate for ENERGY SEAL COATINGS™ Acu-Prime All is .5 gallon per 100 square feet.
- D. Review all critical points over the surface and repair them with ENERGY SEAL COATINGS™ Acu-Caulk:BG and Acu-Fabric.
- E. Apply ENERGY SEAL COATINGS™ Acu-Shield as a base coat.
  - 1) The coverage rate for ENERGY SEAL COATINGS™ Acu-Shield base coat is 1.25 gallons per 100 square feet (see warranty requirements for proper dry film thickness).
- F. Apply ENERGY SEAL COATINGS™ Acu-Shield top coat as a reflective surface coating.
  - 1) The coverage rate for ENERGY SEAL COATINGS™ Acu-Shield top coat is 1.25 gallons per 100 square feet (see warranty requirements for proper dry film thickness).
- 1) The Installer shall repair and/or replace any defective work found at the end of the job, before any warranties will be issued.

## **PART 4 – CARE AND MAINTENANCE**

#### 4.0 CARE AND MAINTENANCE PROGRAM

To ensure that your ENERGY SEAL COATINGS™ roofing coating system will continue to perform to its fullest, you should follow, implement and satisfy this Care and Maintenance program.

- A. Maintain a file for all records relating to this roof, including the ENERGY SEAL COATINGS™ agreements, reports, invoices, repair and maintenance bills, original drawings and specifications, etc.

- B. Inspect the roof and coating at least twice each year, typically in the spring and fall. The most common areas of damage or distress are at drainage points, penetrations, perimeter flashings and in traffic areas.
- C. Pressure wash the coating as needed (and not less often than once every 12 months) to remove all dirt and debris on the surface. Surface should be maintained in clean white condition. Do not use anything but clean water unless directed by ENERGY SEAL COATINGS™ and in such case, use only approved wash products.
- D. Inspect for damage from the elements after severe weather conditions, such as hailstorms, heavy rains, high winds, acts of God, etc.
- E. Arrange for prompt repairs necessary to correct non-warranted conditions affecting the roof surface. Repairs to the surface must be promptly performed by ENERGY SEAL COATINGS™ approved contractors with approved products and repair methods.
- F. Regularly remove any debris, such as leaves, branches, dirt, rocks, bottles, refuse, that may accumulate on the roof surface. Clean gutters, downspouts, scuppers, and surrounding roof areas ensure proper drainage.
- G. Examine all metal flashings, counter flashings, expansion joints and pitch pockets for rust, detachment, deteriorated sealant, and damage. Reattach loose metalwork. Replace sealant as necessary. Prepare and paint rusted surfaces.
- H. Examine masonry walls and copings for cracks, bad mortar joints, deteriorated sealant, loose masonry/coping stones, and indications of water absorption. Repair all such conditions to prevent water infiltration.
- I. Examine rooftop equipment such as air conditioners, ductwork, gooseneck vents, powered ventilators, evaporative coolers, antennas, equipment screens, skylights, satellite dishes, etc. for excessive movement, spillage of coolant, condensation, oil, grease, water/liquid release, etc., and damage to sheet metal cabinets and rubber or fabric gaskets that may allow water infiltration. Employ, keep and maintain drainage systems for release of water, etc. from rooftop equipment to avoid surface water buildup. Keep all roof top equipment in good condition.
- J. Minimize rooftop traffic. Establish paths which confine roof traffic to designated areas only. Service personnel should take care to avoid dropping tools, equipment, parts, etc. on the roof surface. Service personnel should not make any penetrations of or repairs to the coating. All work affecting the coating must be performed by an approved ENERGY SEAL COATINGS™ Roofing Products contractor.

#### END OF SECTION

*This **ARTICECTURAL GUIDE SPEC** is a brief outline of Advanced Coating Systems, Inc.'s (ACS) Manufacturers Specifications for the above described product and is intended for use as a submittal with any bid package by one of ACS' Certified Applicators. ACS Representative and the Certified Applicator must comply with the "Application" section of all Technical Data Bulletins prior to design or bid. The "Product" and "Safety" sections located on the Technical Data Sheet and MSDS contain information pertaining to the proper usage of products as well as applicable safety precautions. These sections must be thoroughly reviewed prior to the installation of this roofing system.*

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