



Fluid Applied Metal Roofing Systems

Industrial Elastomeric / Aluminum Application Guide

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GENERAL

The Firestone Industrial Elastomeric / Aluminum Fluid Applied Metal Roofing System is designed to restore and protect metal roofs and extend the service life of the roof. This Guide provides instructions for the installation of Firestone's Fluid Applied Systems for Metal Roofs. References to Technical Information Sheets (TIS) and other sections of Firestone's technical documents, that are updated regularly, are necessary to ensure that the finished roof system is installed in compliance with Firestone requirements.

1.01 JOB SITE CONSIDERATIONS (CAUTIONS AND WARNINGS)

- A. Keep all adhesives, sealants and cleaning materials away from ALL ignition sources (i.e., flames, fire, sparks, etc.). Do not smoke while using these materials.
- B. Consult container labels, Material Safety Data Sheets (MSDS) and Technical Information Sheets (TIS) for specific safety instructions for all products used on the project.
- C. Care must be used when installing fasteners to avoid contact with conduits and other piping concealed in and beneath the deck.
- D. Fumes from adhesives and solvent bearing coatings and primers may be drawn into the building during installation through rooftop intakes.
- E. Store Firestone Roof Coating materials between 60 °F and 80 °F (15.6 °C and 26.7 °C). Do not allow Firestone Acrylic Roof Coating materials to freeze. Acrylic materials include: Firestone Clear Skylight Coating, Firestone Industrial Elastomeric Roof Coating, Firestone Acrylic Rust Inhibitive Metal Primer, and Firestone Acrylic Patching Cement.
- F. Keep all pails, cans and jugs tightly closed until ready to use. All equipment, air supplies, and application substrates must be dry. Do not apply Firestone Coating System materials in wet weather or when rain is imminent.
- G. COMBUSTIBLE. Use Firestone Aluminum Roof Coating and Firestone Rust Inhibitive Metal Primer only in well ventilated areas. Do not store or use near open flame, sparks or hot surfaces. Keep containers tightly closed. Avoid contact with moisture or water. Keep out of reach of children.
- H. Do not use heat guns or open flames to dry or cure adhesives and primers.
- I. Do not thin materials.
- J. Follow all Occupational Safety and Health Administration (OSHA), National Roofing Contractors Association (NRCA), federal, state and local requirements.
- K. Adhesion tests should be conducted to confirm acceptable adhesion on any factory finish and fluoropolymer finishes such as Kynar®.
- L. All surfaces to be coated must not pond water. NRCA defines ponding water as any water standing on a roof forty-eight (48) hours after a rain event.

INSTALLATION

2.01 WEATHER REQUIREMENTS FOR APPLICATION

- A. Application of Firestone Acrylic Roof Coating Materials, including Firestone Clear Skylight Coating, Firestone Industrial Elastomeric Roof Coating, Firestone Acrylic Rust Inhibitive Metal

Primer, and Firestone Acrylic Patching Cement, must be applied at 50 °F (10 °C) and rising. Temperatures must remain above 50 °F (10 °) for both application and cure time. Cure time will vary, depending on weather conditions. Low temperatures and high humidity will prolong cure time required.

- B. Do not begin work if rain is expected within twenty-four (24) hours of application. Do not apply if weather does not permit four to six (4 to 6) hours dry time prior to rain, fog or temperatures falling below 50 °F (10 °C).

2.02 SUBSTRATE PREPARATION

- A. It is the contractor's responsibility to ensure that the substrate (roof surface to be coated) is adequately prepared to receive the Firestone Industrial Elastomeric Roof Coating System
- B. Holes, splits and openings in the metal roof must be repaired prior to application of the Firestone Industrial Elastomeric Roof Coating System.
 - 1. Holes less than or equal to 1/4" (6.4 mm) in diameter can be patched using Firestone Acrylic Patching Cement or Firestone Elastomeric Seam Tape.
- C. New metal must be installed on all deteriorated metal panels with dents, holes or splits greater than ¼" (6.4 mm) in any dimension.
 - 1. When a panel has deteriorated in the center but is still sound at the edges, it can be covered by a new panel without removing the damaged section.
 - 2. The new panel must be completely secured in the side laps with the screws of the proper type and size and taped at both ends.
- D. New metal must weather a minimum of six (6) months or be cleaned to remove residual oil. Residue can be removed using an environmentally safe cleaner, such as Simple Green®.
- E.. Replace loose or missing fasteners with oversized fasteners.
- F. Loose panels must be reattached using the appropriate fasteners to ensure panels are pulled together flush.
- G. Remove existing sealing materials (i.e., bituminous mastic, caulk type sealant materials, etc.).
- H. Substrates must be clean and dry with no oils, grease, moisture or loose debris. Power washing with a 2000 psi pressure washer is recommended.
- I. Treat all areas of corrosion with Firestone Rust Inhibitive Metal Primer or Acrylic Rust Inhibitive Metal Primer prior to applying Firestone repair products and coating.

- J. Three-Course Method Application of Firestone Acrylic Patching Cement and Polyester Fabric
 - 1. Apply Firestone Acrylic Patching Cement at a rate of 50 ft²/gal. Acrylic Patching Cement must extend a minimum of 1.5" (38.1 mm) beyond the edges of the 6" (152.4 mm) polyester fabric.
 - 2. Embed polyester fabric into wet cement, smoothing the fabric without stretching it.

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3. Apply an additional coat of Firestone Acrylic Patching Cement at 50 ft²/gal, completely covering the fabric and ensuring that the polyester edges are fully embedded. Total coverage will be approximately 1/16" thick (0.61 m²/L, approximately 1.6 mm thick)
 4. Allow to dry a minimum of four to six (4 to 6) hours before exposure to rain or heavy dew.
 5. Allow to dry a minimum of twenty-four (24) hours prior to coating.
- K. When Firestone Elastomeric Seam Tape is used, it is recommended that the installed tape be coated with Firestone Industrial Elastomeric Coating the same day as installation at approximately 100 ft²/gal. Coating should extend 2" (50.8 mm) beyond tape edges.
- L. All end laps must be sealed with Firestone Elastomeric Seam Tape or three-coursed with Firestone Polyester Fabric and Firestone Acrylic Patching Cement.
1. Install 6" (152.4 mm) Firestone Elastomeric Seam Tape when fasteners are within 1½" (38.1 mm) of the end lap. Center the tape to include fasteners. Install 4" (101.6 mm) Elastomeric Seam Tape when fasteners extend 1½" (38.1 mm) or greater from the end lap.
- M. Side laps (vertical seams) must be sealed with 2" (50.8 mm) Firestone Elastomeric Seam Tape. Note: It is not necessary to seal vertical seams on standing seam roofs.
- N. Ridge vents must be sealed with 6" (152.4 mm) Firestone Elastomeric Seam Tape or by applying Firestone Polyester Fabric and Firestone Acrylic Patching Cement in a three-course fashion.
- O. Formed ridge caps must have seams sealed both horizontally with 4" or 6" (101.6 mm or 152.4 mm) Elastomeric Seam Tape and vertically with 2" (50.8 mm) Elastomeric Seam Tape or by applying Firestone Polyester Fabric and Firestone Acrylic Patching Cement in a three-course fashion.
- P. Flat ridge caps must have closures in place. Open voids can be filled with sprayed-in-place polyurethane foam to provide a solid support that can be sealed with 6" (152.4 mm) Elastomeric Seam Tape or by applying Firestone Polyester Fabric and Firestone Acrylic Patching Cement in a three-course fashion.
- Q. All penetrations, including curbs, stacks, vents, and pipes, must be sealed with Firestone Elastomeric Seam Tape or by applying Firestone Polyester Fabric and Firestone Acrylic Patching Cement in a three-course fashion. Do not flash penetration of hot stacks.
- R. Install Firestone Elastomeric Seam Tape on all breaks in metal at corrugations
Skylights must be sealed with 4" or 6" (101.6 mm or 152.4 mm) Elastomeric Seam Tape around the perimeter.
- S. Rake flashings must be sealed with 4" or 6" (101.6 mm or 152.4 mm) Elastomeric Seam Tape.
- T. Wall flashings must be sealed with 4" or 6" (101.6 mm or 152.4 mm) Elastomeric Seam Tape or with application of Firestone Polyester Fabric and Firestone Acrylic Patching Cement in a three-course fashion.
- U. On standing seam roofs, metal closures must be sealed with Firestone Acrylic Patching Cement.
- V. Caulk all reglets and termination bars.
- W. Corrective measures must be taken in areas where water ponds for more than forty-eight (48) hours. The inclusion of crickets or other remediation measures to remove low spots must be completed prior to coating application.

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2.03A FIRESTONE INDUSTRIAL ELASTOMERIC ROOF COATING APPLICATION

- A. Inspect the roof to ensure that preparatory work has been properly completed and all substrate problem areas have been corrected.
- B. **IMPORTANT:** Allow for complete coverage by multiplying the total square feet of the area to be coated by a minimum of 1.15. The extra material will compensate for the additional surface area of corrugation and irregular metal surfaces, and will insure that adequate coating is on hand to complete the job.
- C. Apply a base coat of Firestone Industrial Elastomeric Roof Coating that is a different color than the surface coating to be used. Any Firestone Industrial Elastomeric Roof Coating can be used as a base coat. Gray is recommended. Apply base coat at a rate of 100 ft²/gal (2.5 m²/L), or 16 wet mils.
- D. Base coat may be applied with airless sprayer, brush, or roller.
 - 1. Apply base coat using airless spray equipment that produces a minimum of 2,800 psi at the tip.
 - a. Airless spray tip should be a reversible, self-cleaning tip without a diffuser pin. The tip opening should be 33 mils and produce a fan angle of 60°.
 - b. The maximum hose length should be 300' (91.4 m) consisting of the following: 250' of 3/4" hose plus 50' of 1/2" hose and 10' of 3/8" whip with a swivel (76.2 m of 19.1 mm hose plus 15.2 m of 12.7 mm hose and 3.0 m of 9.5 mm whip with a swivel). Generally the longer the hose, the smaller the tip size should be.
 - 2. A 3/4" (19.1 mm) nap roller can be used to apply the base coat. Roller application may require multiple applications to achieve the proper coverage of 100 ft²/gal (2.5 m²/L), or 16 mils wet thickness.
- E. Allow base coat to dry a minimum of twenty-four (24) hours before applying top coat.
- F. Inspect base coat prior to application of Firestone Industrial Elastomeric Coating top coat. Confirm proper adhesion and that surface is clean.
- G. Apply Firestone Industrial Elastomeric Coating top coat at a rate of 67 ft²/gal (1.7 m²/L), or 24 wet mils.
- H. All work for Firestone warranty must be completed using Firestone materials.
- I. Inspect the completed application for uncoated areas, loose panels, gaps, holes, and joints that have been improperly taped.
- J. Correct any defects.

2.03B ALUMINUM COATING APPLICATION

- A. Prepare the substrate as outlined in all sections of 2.02 above except 2.02 I. When the roof substrate is being prepared to accept Firestone Aluminum Roof Coating, all areas of corrosion must be primed with Firestone Rust Inhibitive Metal Primer (Red). Do not treat areas with Firestone Acrylic Rust Inhibitive Primer.
- B. Inspect the roof to ensure that preparatory work has been completed and all substrate problem areas have been corrected.

- C. **IMPORTANT:** Allow for complete coverage by multiplying the total square feet of the area to be coated by a minimum of 1.15. The extra material will compensate for the additional surface area of corrugation and irregular metal surfaces, and will insure that adequate coating is on hand to complete the job.
- D. Apply Firestone Aluminum Roof Coating with airless sprayer, soft brush, or roller at a rate of 50 ft²/gal (1.2 m²/L), or 32 wet mils.
 - 1. Apply Aluminum Roof Coating with an airless sprayer that produces a minimum of 2,800 psi.
 - a. The airless spray tip should be a reversible, self-cleaning tip without a diffuser pin. The tip opening should be 0.35" with a fan angle of 60° (example 635).
 - b. The maximum hose length should be 300' (91.4 m) consisting of the following: 250' of 3/4" hose plus 50' of 1/2" hose and 10' of 3/8" whip with a swivel (76.2 m of 19.1 mm hose plus 15.2 m of 12.7 mm hose and 3.0 m of 9.5 mm whip with a swivel). Generally the longer the hose, the smaller the tip size should be.
 - 2. Firestone Aluminum Roof Coating can be applied with a soft brush or a 3/4" to 1" (19.1 mm to 25.4 mm) nap roller.
 - a. Roller application may require multiple coats to achieve the proper coverage.
 - c. When rollers or brushes are used for application, each container should be stirred regularly during application.
- E. Firestone Aluminum Roof Coating must be mixed thoroughly before and during application to keep the aluminum particles in suspension and produce the proper application rate of material.
- F. Areas of insufficient thickness must be re-coated.
- G. Allow to dry a minimum of three to five (3 to 5) days between coats and before foot traffic.
- H. All work for Firestone warranty must be completed using Firestone materials.
- I. Inspect the completed application for uncoated areas, loose panels, gaps, holes, and joints that have been improperly taped.
- J. Correct any defects.

End of Guide