

Firestone

Firestone Building Products

Firestone AC System

Application Procedures Guide

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Firestone AC System Application Procedures

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Design Evaluation

The Firestone AC System is approved for use on APP, SBS, and BUR systems only; DO NOT use on EPDM or TPO.

Review project specification to ensure conformance with Firestone Building Products' requirements. Notify design professional and Firestone Technical Services of any discrepancies prior to the performance of any work.

Evaluate site and building conditions.

The performance of a mock-up application is recommended if there is a question regarding substrate assembly moisture, or regarding adhesion to uncommon substrate surfaces. This will help ensure the best possible application method.

Material Storage

All Firestone AC system components will be delivered to the site in original sealed containers/packaging. Define a storage area for all components that is cool, dry, out of direct sunlight, and in accordance with recommendations of Firestone and relevant regulatory agencies. AC Fleece 120 must be stored horizontally, in original bagging, on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls with damaged ends. Store solvent-bearing solutions, resins, additives, inhibitors and adhesives in accordance with the SDS and/or local fire and regulatory authorities. Materials should not be stored in quantities that will exceed design loads, damage substrate materials, or hinder installation or drainage.

Optimum storage of materials is between 65 – 70 °F (18 – 21 °C) in a controlled environment to facilitate mixing and fleece saturation. DO NOT store materials outside in cold weather, as the cooled materials will be difficult to mix and apply due to their thick consistency. DO NOT store materials outside in hot weather, as the heated materials will react too quickly and reduce working times significantly.

Workplace Safety

CAUTION: Product becomes **EXTREMELY HOT** while reacting, reaching approximately 230 °F (110 °C). It may spit, pop, and steam. DO NOT place cans directly on completed membrane.

Provide and maintain positive ventilation and protection to workers for concealed applications or applications lacking sufficient natural air movements. Protect air intake path(s) of the building to prevent odor infiltration to the building interior. Coordinate protective measures with the Owner or his designated Representative.

Comply with requirements of OSHA, NIOSH or governing local authority for workplace safety. When required, provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or his designated Representative. Contractor must be familiar with and observe OSHA Regulations CFR 1926/1910 (current issue) for use and handling of catalysts (organic peroxide).

NOTE: Copies of all current SDS for all components must be kept on site. Provide all crewmembers with appropriate safety data information and training as is related to the specific chemical compound he or she may be expected to deal with. Each crewmember shall be fully aware of first-aid measures to be undertaken in case of accidents.

Environmental Requirements

Application of the Firestone AC system may proceed while air temperature is between 35 – 95 °F (2 – 35 °C), **providing the substrate is a minimum of 5 degrees above the dew point**. Consult with Firestone Technical Services outside of this temperature range. DO NOT commence with the application of any Firestone material during or with the threat of inclement weather and ensure that substrate materials are dry and free of contaminants.

Application of the Firestone AC system when ambient temperature is below 35 °F (2 °C) is discouraged due to the potential of frozen substrates and dew point issues.

Application of Firestone AC system in temperatures above 95 °F (35 °C) is possible but not recommended due to the potential for blistering from substrate vapor drive and reduced working times.

Storage of materials in a cool location until application will retard cure, and application of materials in the late afternoon can alleviate the potential for blistering related to vapor drive.

Provide and maintain positive airflow over freshly applied Firestone AC materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.

NOTE: Interior applications are not recommended due to odor and curing considerations.

Protection

Protect building adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Provide protection for Contractor personnel and occupants of the structure and surrounding buildings as required complying with requirements of OSHA, NIOSH and/or governing local authority.

Odor Control

Where required by the Owner or his designated Representative, implement odor control and elimination measures before and during the application of the roofing/waterproofing materials. Control/elimination measures must be field tested at off-hours and typically consist of one or multiple of the following measures:

1. Sealing of air intakes with activated carbon filters, and at joints against building exterior walls to prevent leakage of unfiltered air into occupied spaces.
2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.
3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and a stationary enclosure for resin mixing equipped with mechanical air intake/exhaust openings, odor control air cleaners, and activated carbon filter at exhaust openings as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Placement of odor elimination stations inside and outside of the enclosure(s) as required.

System Application

The Firestone AC system is a four-step application:

1. Preparation and cleaning of the substrate;
2. Application of primer;
3. Application of the liquid PMMA membrane (resin);
4. Application of granule surfacing, if desired.

Immediately before the application of any component of the system, the substrate shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

NOTE: Before opening the containers of any Firestone AC system material, protect hands and wrists with gauntlet-style neoprene gloves, and wear OSHA-approved eye protection. Use respiratory equipment if recommended by SDS sheet for specific material being applied.

System Assemblies

Firestone Building Products materials are often installed in roofing and waterproofing assemblies that utilize additional materials not discussed in this Application Guide, including asphaltic base and cap sheets, polyisocyanurate insulation, cover boards, drainage mats, water retention mats, pavers, and vegetated-type overburden. Please refer to individual Firestone guide specifications for application information regarding the incorporation of these materials into a Firestone AC system assembly.

Substrate Preparation

Concrete

- New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by Firestone Technical Services. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5.
- When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼" (6 mm) peak to valley. The substrate shall be sound and all spalls, voids and blow holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Areas of minor surface deterioration of ¼" (6 mm) or greater in depth shall be repaired to prevent possible ponding of the system, leading to excessive use of primer and resin. For concrete materials with a compressive strength of less than 3,000 psi, contact Firestone Technical Services for substrate preparation requirements. Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.
- Concrete shall be dry and confirmed by measuring the moisture level with one of the following methods:
 - ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.
 - ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum result is 3 lb/1,000 ft² (14.6 kg/1,000 m²) per 24-hour period.
 - ASTM D2216: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A maximum result is 6% moisture content by weight.
 - ASTM F2659: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top ¾" (19 mm) of the concrete slab. A maximum acceptable reading is 5%.

Masonry

Walls shall be built with hard kiln-dried brick or waterproof concrete block construction. Areas of soft or scaling brick or concrete, recessed or faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired prior to placement of the primer coat. Repair in a manner previously described for structural concrete repair. Walls shall be dry in accordance with the above-referenced methods.

Steel/Metal

Clean and prepare metal surfaces to near white metal in accordance with SSPC-SP3 (power tool clean). Extend preparation a minimum of 3" (76 mm) beyond the termination of the liquid PMMA membrane flashing materials. Notch steel surfaces to provide a rust-stop. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. A WIRE BRUSH FINISH IS NOT ACCEPTABLE. Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to application of primer.

Wood/Plywood

Plywood shall be identified with American Plywood Association (APA) grade trademarks and shall meet the requirements of product standard PS-1. Strip plywood joints, cracks, and knot holes with Firestone Fleece 120 in primer or resin.

New APP/SBS Modified Bitumen

- DO NOT prime with AC Primer.
- Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming.

Hot Asphalt-Applied Systems

Before applying the AC Flashing System, let the newly installed hot asphalt-applied Firestone SBS membrane fully set-up and cool to ambient temperatures. Remove any night seals or other temporary sealants or mastics prior to application. Apply the AC Flashing system only to granulated membrane and the material to be flashed. Ensure any asphalt bleed-out is fully cooled. Remove any excess loose granules that may have been broadcast into asphalt bleed-out.

Heat-Welded/Torch-Applied Systems

Before applying the AC Flashing System, let the newly installed heat-welded/torch-applied Firestone APP/SBS membrane fully set-up and cool to ambient temperatures. Remove any night-seals or other temporary sealants or mastics prior to application. Apply the AC Flashing system only to granulated membrane and the material to be flashed. Ensure any asphalt bleed-out is fully cooled. Remove any excess loose granules that may have been broadcast into asphalt bleed-out.

Cold-Applied Adhesive Systems

Before applying the AC Flashing System, let the newly installed cold-applied adhesive Firestone APP/SBS membrane fully set-up and flash off. This will take 7 – 30 days, dependent upon weather and the number of plies (consult your Building Systems Advisor for further guidance). Excess adhesive is detrimental to the installation of the AC Flashing system; ensure cold adhesive does not bleed out in seams. Hot air welding or using a detail torch in the seam in areas to be flashed with the AC Flashing system can help prevent excessive bleed-out or displacement. Remove any night-seals or other temporary sealants or mastics prior to application. Apply the AC Flashing system only to granulated membrane and the material to be flashed. Remove any excess loose granules that may have been broadcast into the minimal adhesive bleed-out.

TPO/EPDM
DO NOT USE.

Substrate Leveling, Patching, and Repairing

Commercially-available NON-POLYMER MODIFIED cementitious repair mortars can be used to make surface repairs to concrete, masonry, and stone substrate surfaces. Commercially-available two-component sealant can be used to fill and seal defects in wood and metal substrate surfaces. Gaps between materials are typically filled using compressible backer rod, followed by application of polyurethane sealant.

A sound and even substrate surface shall be provided for all Firestone AC system material applications. Firestone AC system materials are not intended to span unsupported gaps and voids.

Joints, cracks, and fractures in the structural deck shall be prepared before installation of liquid PMMA membrane. Clean out cracks by brushing and oil-free compressed air. Fill crack with two-component polyurethane sealant. Allow for a minimum of 12 hours cure or as required by Sealant Manufacturer. Moving joints or cracks larger than ¼" (6 mm) should be stripped in with a strip of AC Fleece 120 in primer or resin. Joints, cracks and fractures may telegraph through the liquid PMMA membrane.

Final Substrate Inspection

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the AC Primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

If specified or desired, after 72 hours the Contractor may perform random tests to determine tensile bond strength of liquid PMMA membrane to substrate at the job site using an Elcometer Adhesion Tester Model 106 or similar device, or by the performance of a manual pull test. Contractor shall perform tests on completely cured membrane at the beginning of the Work, and at intervals as required assuring specified adhesion with a minimum of three (3) tests per 5,000 ft² (464.5 m²). Firestone requires a tested tensile bond strength of liquid PMMA membrane to substrate greater than or equal to 150 psi (1.0 N/mm²). Alternatively, a manual 135° peel bond strength of membrane to substrate must confirm that cohesive failure of substrate or membrane occurs before adhesive failure of primer/substrate interface. This can be achieved through correct and proper surface preparation. Before priming of the surfaces, inspect and check the prepared substrate.

In the event the bond strengths are lower than the minimum specified and cohesive failure of the substrate is not the mode of failure, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation. Contractor shall immediately notify Firestone Technical Services in the event tensile bond test results are below specified values.

AC Primer Mixing and Application

Mixing of AC Primer

NOTE: Due to high heat produced during the reaction, use a metal bucket to mix the catalyst and primer.

Step 1: Premix resin thoroughly with a clean spiral agitator.

Step 2: Determine the correct amount of catalyst powder based upon ambient temperature (see table). Add catalyst powder into resin and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed. **DO NOT AERATE. DO NOT THIN PRIMER.**

For 11 lb (5 kg) AC Primer cans, the following catalyst quantities are recommended:

Ambient Temperature	AC Catalyst Powder 3.5 oz (100 g) bag	Pot Life	Completely Cured
35 °F – 50 °F (2 °C – 10 °C)	2 bags	20 min	45 min
50 °F – 65 °F (10 °C – 18 °C)	2 bags	20 min	30 min
65 °F – 85 °F (18 °C – 29 °C)	1 bag	15 min	30 min
>85 °F (>29 °C)	½ bag	10 min	15 min

NOTE: AC Primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer.

Firestone recommends mixing a **full can** of AC Primer with the amount of Firestone Catalyst Powder indicated in the table above. However, for smaller applications, a half quantity may be used as follows:

Half-Quantity Mixing Chart - 5.5 lb (2.5 kg) half can of AC Primer	
35 °F – 65 °F (2 °C – 18 °C)	1 bag - 3.5 oz (100 g)
65 °F – 85 °F (18 °C – 29 °C)	½ bag - 1.75 oz (50 g)
>85 °F (>29 °C)	¼ bag - 0.875 oz (25 g)

- Any breakdown from original packaging shall be accurately measured by scale or other calibrated measuring device.
- Any material to be broken down should be transferred to a new metal container. Leave material to be used later in original packaging and re-seal with original lids.

Application of AC Primer

Listed coverage rates are estimates and may vary dependent upon substrate characteristics.

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition.

Curing time is approximately 1 hour for AC Primer. AC Fast FR may be applied when the primer is completely dry and without tack. Do not apply AC Fast FR to tacky or wet primer.

NOTE: Exposure of primer more than 48 hours or premature exposure to moisture may require removal and application of new primer. Primer application past the AC Fast FR PMMA membrane terminations requires surfacing with an approved material.

Temporary Waterproofing

Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.

AC Fast FR Mixing and Application

Mixing of AC Fast FR

NOTE: Due to high heat produced during the reaction, use a metal bucket to mix the catalyst and resin.

Step 1: Premix resin thoroughly with a clean spiral agitator, until the liquid is a uniform color, with no light or dark streaks present.

Step 2: Determine the correct amount of catalyst powder based upon ambient temperature (see table). Add catalyst powder into resin and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed.

DO NOT AERATE. DO NOT THIN PRIMER.

For 33 lb (15 kg) AC Fast FR cans, the following catalyst quantities are recommended:

Ambient Temperature	AC Catalyst Powder 10.6 oz (300 g) bag	Pot Life	Completely Cured
35 °F – 50 °F (2 °C – 10 °C)	2 bags	35 min	70 min
50 °F – 70 °F (10 °C – 21 °C)	1 ½ bags	30 min	40 min
70 °F – 85 °F (21 °C – 29 °C)	1 bag	20 min	30 min
>85 °F (>29 °C)	½ bag	20 min	30 min

NOTE: AC Fast FR is extremely fast curing. Excessive mixing time reduces the available working time for the resin. DO NOT break down units into smaller quantities – mix the entire work pack, then distribute smaller portions to individual workers.

Firestone recommends mixing a **full can** of AC Fast FR with the amount of Firestone Catalyst Powder indicated in the table above. However, for smaller applications, a reduced quantity may be used as follows:

Ambient Temperature	22 lb (10 kg) two-thirds can of AC Fast FR	11 lb (5 kg) one-third can of AC Fast FR
35 °F – 50 °F (2 °C – 10 °C)	1 ⅓ bags (14.1 oz / 400 g)	⅔ bag (7.1 oz / 200 g)
50 °F – 70 °F (10 °C – 21 °C)	1 bag (10.6 oz / 300 g)	½ bag (5.3 oz / 150 g)
70 °F – 85 °F (21 °C – 29 °C)	⅔ bag (7.1 oz / 200 g)	⅓ bag (3.5 oz / 100 g)
>85 °F (>29 °C)	⅓ bag (3.5 oz / 100 g)	1/6 bag (1.75 oz / 50 g)

- Any breakdown from original packaging shall be accurately measured by scale or other calibrated measuring device.
- Any material to be broken down should be transferred to a new metal container. Leave material to be used later in original packaging and re-seal with original lids.

Application of AC Fast FR and AC Fleece 120

- Step 1:** After the resin is mixed, using a roller nap or brush apply ⅔ of the resin liberally and evenly onto the substrate in even strokes. Covering one working area at a time, between 10 – 15 ft² (0.9 – 1.4 m²).
- Step 2:** Roll the AC Fleece 120 directly into the resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.
- Step 3:** Apply the remaining ⅓ of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet PMMA membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always ensure full resin saturation of fleece.

Tool Use and Care

Brushes and rollers will remain supple and usable if they are kept moving in liquid resin. If allowed to sit, they will harden quickly as resin begins to cure. Rollers must be discarded once they stiffen. Brushes may be discarded or cleaned with MEK or acetone-based solvent. Roller handles can also be cleaned with MEK or acetone-based solvent. If solvent is used, the tool must air dry for 24 hours before being reused for mixing and/or application. To minimize cleaning, wipe handle with clean, dry cloth every 15 to 20 minutes and schedule work to avoid stopping.

Laps, Seams and Tie-offs

At all fleece seams, allow a 2" (51 mm) overlap for all side joints and a 4" (102 mm) overlap for all end joints. At liquid PMMA membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. DO NOT PRIME EXISTING CURED FIRESTONE PMMA MEMBRANE.

Flashings

Install flashings in accordance with the requirements/recommendations of Firestone Technical Services and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system. Work wet PMMA membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Ensure full resin saturation of fleece.

Curing and Staging

Protect all areas where PMMA membrane has been installed. Do not work off installed PMMA membrane during application of remaining work before 2 hours of curing. Movement of materials and equipment across installed PMMA membrane is not acceptable. If movement is necessary, provide complete protection of affected areas. Protect finished PMMA membrane from damage by other trades using a cushioning layer such as 1" (25 mm) thick insulation and an impact layer such as ½" (13 mm) thick exterior-grade plywood.

Firestone AC Fast System Flashing

All PMMA flashings shall be installed concurrently with the APP/SBS membrane as the job progresses. Temporary flashings are not allowed without prior written approval from Firestone Technical Services. Should any water penetrate the new APP/SBS membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor's expense. Provide a minimum vertical height of 8" (203 mm) for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached because of a deluging rain and/or poor slope. Do not flash over existing through-wall flashings, weep holes and overflow scuppers. Use duct tape or painter's tape to outline the area to be flashed to provide a neat and orderly finished appearance.

Metal Flashing

Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details. Metal flashing flanges to which PMMA is to be bonded shall be a minimum of 4" (102 mm) in width, and secured to the structural deck, or to treated wood nailers, 6" (152 mm) on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue. Metal edges that will be overlaid with PMMA shall be provided with a ¼" (6 mm) min. hemmed edge. Apply primer, resin and fleece to metal flange, extending liquid PMMA membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.

Liquid PMMA Membrane Flashing

Liquid PMMA membrane flashings shall be fabricated with Firestone AC Primer and AC Fast FR liquid PMMA membrane and Firestone Fleece 120. Fleece shall overlap 2" (51 mm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.

Pipes, Conduits, and Unusually-Shaped Penetrations

PMMA flashing is typically constructed as a two-part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a 2" (51 mm) overlap between vertical and horizontal flashing components.

Drains and Scuppers

Acceptable drain and scupper materials are galvanized, galvalume, cast iron, cast aluminum, copper, hard PVC, and ABS. Flashing material shall extend 4" (102 mm) minimum onto drain or scupper flange and into drain/scupper body. Install clamping ring if provided as part of the drain or scupper design. Install a strainer basket to prevent debris from clogging the drainage line.

Hot Stacks

Protect the PMMA membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 170 °F (77 °C). In all such cases, flash to an intermediate “cool” sleeve. Fabricate “cool” sleeve in the form of a flanged metal cone using galvanized metal, mechanically attached to the structure or wood nailers. Flashing is typically constructed as a two-part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a 2" (51 mm) overlap between vertical and horizontal flashing components.

Flexible Penetrations

Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in Firestone Water Block Seal (S-20) and secure to the structural substrate. Acceptable gooseneck material is copper, of a sheet weight appropriate for the application. Flashing is typically constructed as a two-part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a 2" (51 mm) overlap between vertical and horizontal flashing components.

Walls, Curbs and Base Flashings

Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to gypsum-based panels, cementitious stucco, synthetic stucco, wood or metal siding, and other similar materials is not acceptable. Reinforce all transition locations and other potential wear areas with a 4" (102 mm) wide liquid PMMA membrane strip evenly positioned over the transition prior to installing the exposed flashing layer. Reinforce all inside and outside corners with a 4" (102 mm) diameter conical piece of liquid PMMA membrane prior to installing the exposed flashing layer. All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer. Extend flashing a minimum of 4" (102 mm) onto the field substrate surface.

Drip Edges and Gravel Stops

Metal drip edges and gravel stops shall be installed to solid substrate surfaces or treated wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding or coping, and other similar materials is not acceptable. Before installing drip, edges and gravel stops, extend the APP/SBS membrane all the way to the edge of the structure. Once the field membrane has fully cured install the drip edge or gravel stop over the field membrane.

Prepare, prime and strip in the metal flange with a separate 8" (203 mm) wide strip of PMMA membrane adhered to both the securement flange and to the field membrane. Clean the field membrane prior to stripping in the flange. Do not apply primer to the existing field membrane. For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate liquid PMMA membrane bottom layer positioned behind the face area and extending a minimum of 4" (102 mm) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

Protection

Protect finished application from all other contractors and activities during and after completion. Any damage to the system must be repaired as recommended by Firestone Technical Services.

Cleanup & Disposal

Remove all masking, protection, equipment, materials, and debris from the work and storage areas and leave those areas in an undamaged and acceptable condition. Cured Firestone AC Primer and AC Fast FR resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

NOTE: Uncured AC Primer, AC Fast FR resin, and AC Catalyst Powder are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw away uncured primer or resin.

PMMA Membrane Tie-In, Patching, and Repair Guidelines

When two plies of Firestone PMMA membrane overlap, the membrane plies should be installed wet-in-wet wherever possible. This principle applies to all liquid PMMA membrane overlaps including two-ply applications, overlaps, joints, seams, patches and repairs. When this is not possible due to weather, jobsite conditions or other unforeseen circumstances, or damage to existing in-place Firestone PMMA membrane, a second ply of liquid PMMA membrane may be installed as follows.

New Firestone PMMA membrane can be adhered directly to in-place PMMA membrane to accomplish overnight tie-ins and other similar installation conditions by means of the following procedure:

1. Thoroughly clean the in-place liquid PMMA membrane with MEK (methyl ethyl ketone) to achieve a min. 2" (51 mm) overlap area.
2. After the solvent has been allowed time to fully evaporate, apply the new Firestone PMMA membrane directly to the in-place PMMA membrane.

NOTE: DO NOT apply primer to the in-place PMMA membrane surface.

PMMA Membrane Patching & Repairs

1. Check the Firestone PMMA membrane area to determine the extent of repair. Cut and remove the blistered/damaged PMMA membrane back to a securely bonded point to the substrate.
2. Mechanically grind off any remaining resin and primer and prepare the substrate.
3. Apply tape around the area to be primed and apply Firestone AC Primer to the exposed substrate surface if the substrate is suitable for primer. DO NOT apply primer to the existing PMMA membrane or to APP/SBS membrane.
4. Cut a rectangular or circular piece of AC Fleece 120 a minimum of 2" (51 mm) larger in all directions of the repair area.
5. Thoroughly pre-clean the existing PMMA membrane with MEK to remove dirt and other similar contaminants and mechanically abrade the area. Allow the solvent to fully evaporate.
6. Apply tape to the existing liquid PMMA membrane around the area to receive the new membrane patch.
7. Apply the Firestone PMMA resin to the taped-off area, imbed the fleece and complete the membrane saturation.
8. After the patch has thoroughly cured, re-apply liquid PMMA membrane coating / surfacing as needed to match the existing in-place system.

Recommended Tools

The following list of tools and materials may be required for AC Primer and AC Fast FR product application, depending upon substrate type/condition.

Surface Preparation:

- Gas-Powered Production Scarifier or Shot Blaster
- Detail Scarifier or Shot Blaster
- Power Grinder
- Diamond Cups (for concrete/masonry)
- Cutting Blades (for concrete/masonry)
- Metal Abrasive Blades (for metal surfaces)
- Hand Scrapers
- Power Blower/Vacuum
- Push Broom
- Wire Brush
- Two 3-gallon Agricultural-Type Tank Pressure Sprayer
- Pressure Washer (min 3,000 psi) w/ Roto-Spray Tip

Mixing:

- ½" (13 mm) Power Drill
- 3" (76 mm) and 4" (102 mm) Spiral Mixing Blades
- 1-gallon Plastic Buckets w/Quantity Markings
- 5-gallon Plastic Buckets
- 5-gallon Squirrel Cage Mixer
- Hand Scoop
- Metal Buckets
- 1-gallon Stir Stick

Application:

- 9" (229 mm) Roller Covers & Handles
- 4" (102 mm) Roller Covers & Handles
- Roller Handle Extensions
- 2½" (64 mm) Long-Handled Brushes
- 4" (102 mm) Chip Brushes
- Heavy-Duty Utility Scissors
- Utility Knives
- 5-in-1 Tools
- Spill Containment Basin
- Water Source
- Metal Snips

Protection:

- 6 mil Plastic Sheeting (for protecting building, completed PMMA membrane, and stored materials)
- Duct Tape/Painters Tape
- Lint-Free Rags
- Methyl Ethyl Ketone (MEK)
- Cleaning Agent (such as Simple Green)
- Gauntlet-Type Polyvinyl Alcohol Gloves
- Safety Eye Glasses
- Breathing/Filtering Apparatus (as required by SDS sheets)