

SECTION 075630 – FLUID APPLIED ROOFING RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Provide fluid applied roofing restoration system either as specified within this Section or as specified within Section 075620.
- B. Section Includes:
 - 1. Smooth or Mineral Surfaced Modified Bitumen Roof Restoration
 - a. Surface preparation: Remove dirt, and debris.
 - b. Fascia Edges: Coat with mastic, cover with fabric.
 - c. Metal Flashings: Repair/Replace metal flashings as needed, pitch pockets, etc.
 - d. Roof Repairs: Repair blisters, stressed, deteriorated or cracked membrane.
 - e. Primer: Prime over new asphaltic materials only.
 - f. Install base coating and fabric reinforcement on flashings and entire roof surface. Let cure, and top coat flashings and entire roof surface.
- C. Related Requirements:
 - 1. Section 061053 "Miscellaneous Rough Carpentry" for wood blocking, curbs, cants, and nailers.
 - 2. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. Manufacturers Inspections:

1. The Roofing Systems Manufacturer shall provide daily jobsite inspections with weekly written reports progress reports with photographs of work in progress. One manufacturer's representative shall provide all inspections.
2. Confirm, whenever called upon by the Architect or Owner that no application procedures were in conflict with the published specifications other than those that may have been previously reported and corrected.
3. The Roofing System Manufacturer provide inspections of the roofing system, whenever called upon by the Architect or Owner, for the duration of the delivered warranty period

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include data substantiating that materials comply with requirements.

1. Descriptive product data including MSD sheets.
2. Certification of Class A roof system.
3. Sample copy of contractor's workmanship warranty.
4. Sample copy of specified Manufacturer's warranty.
5. Sample copy of Manufacturer's Architectural indemnification Agreement.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Crickets, saddles, and tapered edge strips, including slopes.
4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Samples for Verification: For the following products:

1. 12-by-12-inch (300-by-300-mm) square of modified bituminous
2. 12-by-12-inch (300-by-300-mm) square of roofing insulation.
3. 3 lb (1.5 kg) of aggregate surfacing material.
4. 6 insulation fasteners of each type, length, and finish.

D. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system and is eligible to receive the standard roofing manufacturer's warranty.

E. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of meeting performance requirements.
- F. Qualification Data: For firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Owners and Architects, and other information specified.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, indicate compliance of components of roofing system with requirements based on comprehensive testing of current product specification.
- H. Indicate compliance of bulk roofing asphalt materials delivered to Project with requirements. Include quantity and statistical and descriptive data for each product. Submit certificate with each load before it is used.
- I. Include continuous log showing time and temperature for each load of bulk bitumen, indicating date obtained from manufacturer, where held, and how transported before final heating and application in roof.
- J. Research/Evaluation Reports: Evidence of roofing system’s compliance with building code in effect for Project from a model code organization acceptable to authorities having jurisdiction.
- K. Maintenance Data: Upon substantial completion of the project, deliver to owner three (3) copies of manufacturer’s printed instructions regarding care and maintenance of roof.
- L. Warranties: Sample copy of standard roofing manufacturer’s warranty stating obligations, remedies, limitations, and exclusions of warranty.
- M. Wind Uplift Calculation: Roofing system manufacturer’s engineering department shall provide a ASCE 7-10 Calculation per IBC, Chapter 15. Calculations shall be diagrammatically show fastening pattern for insulation attachment.
- N. Plumbing calculation: roofing system manufacturer’s engineering department shall provide a primary drain and overflow drain or overflow scupper calculation per IBC, Chapter 11. Calculations shall be stamped by a IL licensed engineer.
- O. Litigation and settlements: Provide a notarized statement from a corporate officer stating roofing system manufacturer has not settled litigation or paid fines to a public agency in excess of twenty million dollars.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.
- B. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is FM Global approved for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: Engage an experienced installer to perform Work of this Section who has specialized in installing roofing similar to that required for this Project; who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer’s product; and who is eligible to receive standard roofing manufacturer's warranty. All bidding roofing contractors must have full-time

roofing installers on the payroll of the company and have an established certified and verifiable apprenticeship-training program for minimum 5 years. Brokers or jobbers that subcontract roofing work are not acceptable for certification to bid. All contractors must provide an AIA Qualification Form with their roofing bid to be considered as a responsible bidder.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.
- E. Storage temperatures should be between 60°F to 80°F (15.6° to 26.7°C) and not exceed 110°F (43.3°C). Indoor ventilated storage is recommended. Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight. Keep materials away from open flame or welding sparks

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. When applying materials with spray equipment, take precautions to prevent over spray and/or solvents from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
 - 1. Close air intakes into the building.
 - 2. Have a dry chemical fire extinguisher available at the jobsite.
 - 3. Post and enforce "No Smoking" signs.
- C. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.
- D. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.
- E. Take precautions to ensure that materials do not freeze.
- F. Minimum temperature for application is 50 degrees F (10 degrees C) and rising

1.10 WARRANTY

- A. Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. The manufacturer shall provide to the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
 - 1. Warranty Period: 20 years from date of Substantial Completion.
- B. One manufacturer shall provide warranty for Fluid Applied Membrane and new Modified Bitumen Membranesystems.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Product: Subject to compliance with the requirements, provide one of the following systems:
 - 1. Garland Company, "Liquitec" as specified in this Section.
 - 2. Tremco Inc., "Alphaguard Bio" as specified in Section 075620.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed Reinforced, Fluid Applied Membrane shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- D. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 FLUID APPLIED MEMBRANE MATERIALS

- A. Top Coat: LiquiTec: Multi-purpose, 100% solids, two-part, fast-cure, polyurea liquid waterproofing membrane having the following characteristics:

1. Elongation, ASTM D 412: 433%
2. Tensile Strength, ASTM D 412: 2300 psi
3. Tear Resistance, ASTM D 624: 449 lbs./in
4. Low Temperature Flexibility, ASTM D522: -60°F (-51.1°C)
5. Hardness, ASTM D2240 (Shore A): 80
6. Dynamic Impact Resistance (Fully Reinforced System): ASTM D5635, 37 joules
7. Static Puncture Resistance (Fully Reinforced System): ASTM D5602, 20 kg
8. Tensile-Tear Resistance (Fully Reinforced System): ASTM D4073, 274 lbf
9. Tensile Load Strain (Fully Reinforced System): ASTM D4073, 150 lbf/in.
10. Toughness: 193 ft.-lbf/ft²
11. Dry Film Thickness (Fully Reinforced System), 88 mils
12. Lap Shear Strength (MB Seam with coating): ASTM D7379, 231 lbf/in.
13. Density @ 77° F (25° C, ASTM D 2939) 9.6 lb./gal (1.2 g/m³)
14. Flash Point: ASTM D 93, 110°F min. (43°C)
15. VOC: 0 g/l
16. Microbial Resistance: ASTM G21, No Microbial Growth
17. Initial Reflectance: 0.84
18. Initial Emittance: 0.88
19. Initial SRI: 105

- B. Base Coat: LiquiTec Base: Multi-purpose, 100% solids, two-part, fast-cure, polyurea liquid waterproofing membrane having the following characteristics:

1. Elongation, ASTM D 412: 433%
2. Tensile Strength, ASTM D 412: 2300 psi
3. Tear Resistance, ASTM D 624: 449 lbs./in
4. Low Temperature Flexibility, ASTM D522: -60°F (-51.1°C)
5. Hardness, ASTM D2240 (Shore A): 80
6. Dynamic Impact Resistance (Fully Reinforced System): ASTM D5635, 37 joules
7. Static Puncture Resistance (Fully Reinforced System): ASTM D5602, 20 kg
8. Tensile-Tear Resistance (Fully Reinforced System): ASTM D4073, 274 lbf
9. Tensile Load Strain (Fully Reinforced System): ASTM D4073, 150 lbf/in.
10. Toughness: 193 ft.-lbf/ft²
11. Dry Film Thickness (Fully Reinforced System), 88 mils
12. Lap Shear Strength (MB Seam with coating): ASTM D7379, 231 lbf/in.
13. Density @ 77° F (25° C, ASTM D 2939) 9.6 lb./gal (1.2 g/m³)
14. Flash Point: ASTM D 93, 110°F min. (43°C)
15. VOC: 0 g/l
16. Microbial Resistance: ASTM G21, No Microbial Growth

- C. Reinforcement: Grip Polyester Soft, strong, elastic, polyester reinforcing fabric.

2.4 ROOFING SHEET MATERIALS (FOR MODIFIED BITUMEN MEMBRANE REPAIRS)

- A. Base Sheet: ASTM D 6162, Grade S, 80 Mil SBS-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); smooth surfaced; suitable for application method specified.

- B. Granule-Surfaced Cap Sheet: ASTM D 6162, Grade G, SEBS-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); granule surfaced; suitable for application method specified, and as follows:

1. Thickness: 155 mils.
2. Tensile Strength: 310 lbf/in.MD, 310lbf/in.CMD.
3. Elongation at Maximum Load: 3.5 percent at 73 deg F in each direction.
4. Tear Strength: 500 lbf/in.MD, 500lbf/in.CMD
5. Low-Temperature Flexibility: Pass at minus 30 deg F (minus 23 deg C).
6. Compound Stability: Not less than 250 deg F.
7. Mineral Color: White

2.5 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Primer: For Repaired New Modified Membrane areas only. Gar-Block Primer, copolymer sealant that prevent staining and degradation of surface coatings when installed over smooth or granulated asphalt, coal tar modified bitumen, or smooth asphalt BUR membranes.
 - 1. Non-Volatile Solids % by Weight, ASTM 3960: 28-32 %
 - 2. Non-Volatile Solids % by Volume, ASTM 3960: 25-28 %
 - 3. pH: 8-10
 - 4. Wet Film Thickness @ 1 gal./100 sq. ft.: 16 mils (microns 406.4)
 - 5. Flash Point PMCC: None
 - 6. Drying Time, Touch @ 70 degrees F (21.1 degrees C) /50% R.H.: 1-2 hrs.
 - 7. Viscosity @ 77 degrees F (25 degrees C) Brookfield RVT, #4 Spindle; 20 rpm, ASTM 2196: 3000-5000 cPs
 - 8. VOC: 30 g/l max
- C. Roofing Mastic: Trowel grade, Polyether, zero VOC, elastic white mastic. Kee-Lock.
- D. Cold Process Asphalt Adhesive: Cold Process, Polymer modified, Asphalt adhesive for Modified Bitumen membrane installation. Weatherking.
- E. Wood Nailer Strips: Furnish wood nailer strips complying with requirements of Division 06 Section "Miscellaneous Rough Carpentry."
- F. Lead Flashings: 4lb for roof drains and vent pipes.
- G. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.
- H. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.6 ROOF INSULATION (FOR SATURATED AREA REPAIR)

- A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated in drawings.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Atlas Roofing Corporation.
 - b. Hunter Panels.
 - c. Johns Manville.
 - d. Rmax, Inc.

- C. Tapered Insulation (If applicable): Provide factory-tapered insulation boards fabricated to slope of 1/4

inch per 12 inches unless otherwise indicated.

- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.7 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- D. Cover Board: DOC PS 2, Exposure 1, six sided, oriented strand board, 7/16 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
 - 4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. General: All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.
 - 1. If wet, Remove existing roof flashings from curbs and parapet walls down to the surface of the roof. If wet, Remove existing flashings at roof drains and roof penetrations.
 - 2. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
 - 3. Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.
 - 4. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as

- recommended by the specific product manufacturer.
5. Newly installed roof surfaces shall be primed as necessary and allowed to dry prior to installing the fluid-applied roofing system.
- C. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
 - D. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - E. Repair all defects such as deteriorated roof decks; replace saturated insulation board, replace loose or brittle membrane or membrane flashings. Verify that exiting conditions meet the following requirements:
 1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
 2. Application of roofing materials over a brittle roof membrane is not recommended.
 - F. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.
 - G. Clean and seal all parapet walls, gutters and coping caps, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.
 - H. Clean the entire roof surface by removing all dirt, algae, paint, oil, talc, rust or foreign substance. Use a 10 percent solution of TSP (tri-sodium phosphate), Simple Green and warm water. Scrub heavily soiled areas with a brush. Rinse with fresh water to remove all TSP solution. Allow roof to dry thoroughly before continuing.
 - I. Repair existing roof membrane as necessary to provide a sound substrate for the fluid-applied membrane. All surface defects (cracks, blisters, tears) must be repaired with similar materials.
 1. Blisters/Ridges: Before the roof coating is installed, contractor shall cut and patch all blisters over 6 square inches and all mole runs or wrinkles in existing roofing. Blisters shall be cross-cut, filled with Polyether mastic, stepped down until mastic oozes from all cross cuts, then top dressed with Polyether mastic and 6" Garmesh three coursing. Any Blisters of Ridges over 12 inches in length shall be cut, relaxed, and a new ply of SEBS Modified Bitumen cap sheet installed over voided area in cold process asphalt adhesive. Ponding: Before the roof coating is installed, contractor shall overlay all ponding, dirty, aggressively deteriorated areas with additional ply of modified set in cold process adhesive or heat applied to try and pull out as much water as possible and strengthen the existing roof. Ponding areas shall be power washed and broomed clean of all dirt and debris. Over top of cleaned ponding area, apply a full sheets of SEBS Modified bitumen cap sheet set in cold process asphalt adhesive at a rate of 2.5 gallons per 100 sq. ft.
 2. Drains: Before the roof coating is installed, remove clamping rings and strainer and block pipe from seeping asphalt and debris. Contractor shall liberally apply asphalt mastic, 3 sq. ft. of jute membrane, and asphalt mastic to existing mineral surface roof. Strip in with two side by side plies of 6' by 3' SEBS modified bitumen cap sheet (total target piece shall be 6' by 6') in cold process Asphalt adhesive at the rate of 2.5 gallons per 100 sq. ft. or heat applied. Reinstall clamping ring. Further seal outside edges of target patch with Polyether mastic and 6" mesh. Replace broken bolts, install new domes or strainers and clamping rings (included in bid) before coating and polyester is applied. Test and inspect all existing drains & repair as required to make drains function properly. Cracked or broken drain bowls shall be replaced per unit process. Ensure coating does not cover drain bolts so that bolts can be easily tightened if need for future maintenance.
 3. Wet Areas Replacement: Should wet substrates be discovered, replace with new polyisocyanurate insulation to match existing thicknesses. Add any insulation necessary (1/2" fiberboard) to match

thickness of built up and to ensure that replacement area does not pond water. All wet areas shall be confirmed by the Architect. Top iso insulation with minimum 0.5" fiberboard recovery board. Replace wet areas with one ply of 80 Mil SBS Modified Base sheet and SEBS modified Cap sheet in cold process. Replace in kind if saturated or deteriorated areas are found.

- a. Replace additional insulation with polyisocyanurate to match existing insulation, as per unit costs, per Bid Forms. Allowance to cover additional insulation, if not already noted on drawing.
 - b. Replace rotted or deteriorated decking, as per unit costs. Allowance to cover decking if not already noted on drawing.
 - c. Replace modified 2 ply built up roof with 80 Mil SBS Modified Base Sheet and SEBS Modified Bitumen cap sheet, as per unit costs, per Bid Forms. Allowance to cover BUR if not already noted on drawing.
- J. Pre-Treatment of Known Growth - General Surfaces: Once areas of moss, mold, algae and other fungal growths or vegetation have been removed and surfaces have also been thoroughly cleaned, apply a biocide wash at a maximum spread rate of 0.2 gallons/square (0.08 liters/m), to guard against subsequent infection. Allow to dry onto absorbent surfaces before continuing with the application. On non-absorbent surfaces, allow to react before thoroughly rinsing to remove all traces of the solution.

3.3 INSTALLATION, GENERAL

A. General Installation Requirements:

1. Install in accordance with manufacturer's instructions. Apply to minimum coating thickness required by the manufacturer.
2. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
3. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
4. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore work damaged by installation of the roofing system.
5. All primers must be top coated within 24 hours of application. Re-prime if more time passes after priming.
6. Keep roofing materials dry during application.
7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.

3.4 FLUID APPLIED SYSTEM INSTALLATION

A. Smooth or Mineral Surfaced Modified Bitumen Roof Restoration:

1. Surface preparation: Remove dirt, and debris.
2. Fascia Edges: In perimeter areas in need of repair, Prime, coat with mastic, cover with membrane.
3. Parapets and Vertical Surfaces: Cut back and replace damaged flashing membrane as required.
4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.
5. Gutter and Downspouts: Leave existing in place. Repair/replace any damaged gutters or downspouts in kind.
6. Roof Repairs: Repair blisters, holes, cuts, cracks, splits or other surface defects. Loose or damaged modified bitumen laps must be resealed/repaired
7. Primer: Prime new asphaltic materials only at a rate of 0.5 gallons per 100 SF.
8. Coating Mixing Procedure:
 - a. Mix Part A liquid for one minute using an electric heavy duty power drill and Jiffy mixer blade.

Slowly pour contents of Part B jug, located inside the Part A pail, into the Part A container and mix the two components together for two minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed. Always mix entire kit contents together as packaged. Do not break down into smaller quantities.

9. Application of LiquiTec Base or LiquiTec and Reinforcement:
 - a. Apply a bead of Polyether sealant into all MB side and end laps to reduce the height of the overlap helping to eliminate voids and tenting under fabric reinforcement
 - b. On field surfaces run fabric reinforcement parallel to the low edge using a shingling method up the slope with minimum 3 inch fabric laps.
 - c. After positioning reinforcement to roll out, apply LiquiTec Base or LiquiTec about 40 inches wide to surface where reinforcement ply is to be applied at a rate of 4.5 gallons per 100 SF over modified bitumen.
 - d. Use a notched squeegee to spread coating and roller apply with ¾" nap roller to obtain uniform coverage.
 - e. Do not apply coating too far ahead of fabric so coating does not dry before fabric can be embedded.
 - f. Immediately roll reinforcement into wet coating.
 - g. Ensure roller is fully saturated with coating and backroll over the reinforcement surface to fully saturate.
 - h. Use care to lay the fabric tight to the roof surface without air pockets, wrinkles, fishmouths, etc.
 - i. Lap adjacent rolls of reinforcement 3 inches and end laps 6 inches.
 - j. Allow to dry, but no more than 72 hours before applying top coat.
10. Application of Top Coat
 - a. Apply top coat of LiquiTec Base or LiquiTec at 2.0 gallon per 100 SF to clean and dry reinforced base coat application.
11. Liquid Flashings:
 - a. All flashings are coated in the same manner as the field prior to field application.
 - b. Vertical liquid flashings shall run a minimum of 4" onto the horizontal surface
12. Application of Non-Skid Surface for Walkways (if applicable)
 - a. Apply LiquiTec or LiquiTec Base at a minimum of 1.0 gal./100 sq. ft. (0.41 l/m²) to dry top coat within 72 hours of its application.
 - b. Broadcast dry roofing granules or 20-40 mesh silica sand into wet coating and immediately back-roll to set.

3.5 FIELD QUALITY CONTROL

- A. Daily Roof Inspections: Coordinate with roofing system manufacturer's technical personnel to inspect roofing installation on a daily basis until completion and submit report to Architect. A manufacturer's representative must be onsite full time to start the project.
- B. Notify Architect and Owner 48 hours in advance of the date and time of Final inspection.

3.6 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075630