



PROJECT MANUAL

FOR

ROOFING UPGRADE PROJECT

AT

Mill Valley Middle School

Mill Valley, CA 94941

Project No. 2019/20-MVMS-03

Mill Valley School District

411 Sycamore Ave

Mill Valley, CA 94941

415-389-7701

06/24/2020SECTION 01 1000
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PART 2 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Specification and drawing conventions.

B. Related Section:

1. Division 01.

1.02 PROJECT INFORMATION

A. Project Identification: Roofing Upgrade Project

1. Project Locations: Mill Valley Middle School, 425 Sycamore Ave., Mill Valley, CA 94941 CA 94941

B. Owner: Mill Valley School District, 411. Sycamore Ave., Mill Valley, CA 94941.

1. Owner's Representative: John Binchi, Project Manager, jbinchi@mvschools.org 415-389-7701.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. This Project for the Mill Valley School District is known as the "Roofing Upgrade Project. Project No. 2019/20-MVMS-03" The project consists of, Applying a fluid-applied membrane roofing system to all areas indicated on the drawing. The building consists of four (4) pods at each corner of the building and the main common area in the middle of the building. The pod areas consist of classrooms that must be completed first, so not to interrupt classes when school begins on August 20, 2020. The main common area will be completed last.

B. Type of Contract.

1. Project will be constructed under a single prime contract.

C. General: Contractor shall have limited use of Project site for construction operations.

- D. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- E. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.

1.04 COORDINATION WITH OCCUPANTS

- A. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify the Owner not less than forty-eight (48) hours in advance of activities that will affect Owner's operations.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
 - 1. Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 - 2. Before limited Owner occupancy, data and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain data and electrical systems serving occupied portions of Work.
 - 3. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.05 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 3 - PRODUCTS (Not Used)

PART 4 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 7300

EXECUTION

PART 5 - GENERAL

1.01 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.

- B. Related Sections:
 - 1. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.02 INFORMATIONAL SUBMITTALS

1.03 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Owner of locations and details of cutting and await directions from the Owner before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Owner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.04 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 6 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 1. For projects requiring compliance with sustainable design and construction practices and procedures, utilize products for patching that comply with requirements of Division 01 Section "Sustainable Design Requirements."
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Owner for the visual and functional performance of in-place materials.

PART 7 - EXECUTION

3.01 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

3. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Owner according to requirements in Division 01 Section "Project Management and Coordination."

3.03 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.

3.04 FIELD ENGINEERING

3.05 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

1.06 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- D. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- F Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

- E. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

- F. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

1.07 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
 - C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
 - D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
 - E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
 - F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
 - G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
 - H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
 - I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
 - J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- 1.08 PROTECTION OF INSTALLED CONSTRUCTION
- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
 - B. Comply with manufacturer's written instructions for temperature and relative humidity.

1.09 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 7300

SECTION 07 56 00.13 – FLUID-APPLIED MEMBRANE ROOFING

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. This Section includes cold fluid-applied roofing system, consisting of the following:
 - 1. Clean and prepare roof and flashings for fluid applied system. Cleaning to consist of power-washing and water containment procedures. Perform work per State of California and EPA regulations.
 - 2. Prep flashings, penetrations and projections to receive fluid applied coating.
 - 3. Perform all field repairs etc. as required.
 - 4. Furnish and install membrane over designated areas of [e] Silicone coating.
 - 5. Based on results of infrared survey, remove and replace any and all insulation confirmed to be "wet".
 - 6. Reinforcement of all penetrations and projections.
 - 7. Installation of fluid applied system on [e] expansion joints.
 - 8. Re working of all drains/overflows and drainage devices.
 - 9. Application of fluid applied roof membrane and flashings consisting of multiple coats of fluid-applied, fabric-reinforced, polyurethane coating.
- B. Related Requirements:
 - 1. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof flashings, counterflashings and scuppers.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing Manual" for definition of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
 - 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.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. **Solar Reflectance Index:** Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

- D. **Energy Star Listing:** Provide roof coating that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- E. **Energy Performance:** Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.
- F. **Exterior Fire-Test Exposure:** ASTM E 108, Class A for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product specified.
 - 1. Indicate CRRC Compliance.
 - 2. Indicate Energy Star compliance.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Provide roof plan showing orientation and types of roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened components.
 - 1. Base flashings and terminations.
 - a. Indicate details meet requirements of NRCA and FMG required by this Section.
- C. Samples for Verification: For the following products:
 - 1. 8-by-10-inch (254-by-254-mm) square of fluid-applied hybrid roofing materials, including [base sheet and flashing sheet, of color specified.
 - 2. 8-by-10-inch (254-by-254-mm) square of fabric reinforcement

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Product Certificate: Submit notarized certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.
 - 1. Indicate UL listing.
- B. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.
 - 1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty.
 - 2. Certificate indicating Installer is qualified in Project jurisdiction to perform asbestos abatement.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing system.
- D. Warranties: Unexecuted sample copies of special warranties.
- E. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by re-coating operations. Submit before Work begins.
- F. Inspection Reports: Daily reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: To include in maintenance manuals.
- B. Warranties: Executed copies of approved warranty forms.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five [5] years experience installing products comparable to those specified, able to communicate verbally with Contractor, District, and employees, and the following:
 - 1. Qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
 - 2. Have not filed for bankruptcy in the past ten [10] years.
 - 3. Contractor submitting bid shall perform work.
 - 4. Manufactures Field reports: Submit the required reports to the Mill Valley Unified School District.
- B. Manufacturer Qualifications: Approved manufacturer listed in this Section with UL listed products, with minimum 10 years experience in manufacture of specified products in successful use in similar applications.
 - 1. Approval of Other Manufacturers and Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
 - e. Sample warranty.
- C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
 - 1. An authorized full-time technical employee of the manufacturer.
 - 2. An independent party certified as a Registered Roof Observer by the Roof Consultants Institute, retained by the Contractor or the Manufacturer and approved by the Manufacturer.
- D. **Roofing Preinstallation Conference:** Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to roofing system.
 - 1. Meet with Owner; roofing materials manufacturer's representative; roofing Installer including project manager and foreman; and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.
 - 2. Review methods and procedures related to preparation, including membrane roofing system manufacturer's written instructions.

3. Review temporary protection requirements for existing roofing system that is to remain, during and after installation.
4. Review roof drainage during each stage of roofing and review roof drain plugging and plug removal procedures.
5. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
6. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect re-coating.
7. Review HVAC shutdown and sealing of air intakes.
8. Review shutdown of fire-suppression, -protection, and -alarm and -detection systems.
9. Review procedures for asbestos removal or unexpected discovery of asbestos-containing materials.
10. Review governing regulations and requirements for insurance and certificates if applicable.
11. Review existing conditions that may require notification of Owner before proceeding.

1.9 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below roofing area. Conduct roofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
- B. Protect building, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
 1. Store all materials prior to application at temperatures between 60 and 90 deg. F.
 2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer. Do not apply materials when air temperature is below 50 or above 110 deg. F.
 3. Do not apply roofing in rain, fog, or mist.

1.10 WARRANTY

- A. Special Warranty: Written warranty in which Manufacturer agrees to repair roof installations that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Membrane failures including rupturing, cracking, or puncturing.
 - b. Deterioration of membranes, coatings, metals, metal finishes, and other associated materials beyond normal weathering.
 2. Qualified Installer Requirement: Installer must meet requirements of Quality Assurance Article.
 3. Installation Inspection Requirement: By Roofing Inspector in accordance with requirements of Part 3 Field Quality Control Article.
 4. Annual Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's annual inspections and preventive maintenance is included in the Contract Sum. Inspections to occur in Years 2, 5 and, 10 following completion.
 5. Warranty Period: twenty [20] years from date of completion of roofing work.

- B. **Installer's Warranty:** Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section and related Sections indicated above, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:

1. Warranty Period: **Five [5]** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. **Basis-of-Design Manufacturer/Product:** The roof system specified in this Section is based upon products of Tremco, Inc. that are named in other Part 2 articles. Subject to compliance with requirements, provide the named product listed BOD.
- B. **Source Limitations:** Obtain roofing materials, sheet flashings, protection cover boards, base sheet, baseflashing, cold adhesives and fluid applied membrane from single source from single manufacturer.

2.2 MATERIALS

- A. **General:** Roofing materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.
- B. **Temporary Roofing Materials:** Selection of materials and design of temporary roofing is responsibility of Contractor.
- C. **General:** Provide adhesive and sealant materials recommended by roofing manufacturer for intended use and compatible with built-up roofing.
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
 2. **Adhesives and sealants that are not on the exterior side of weather barrier** shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.
 - d. Other Adhesives: 250 g/L.
 - e. Sealant Primers for Porous Substrates: 775 g/L.

2.3 FLUID-APPLIED ROOFING MEMBRANE

- A. **Polyurethane Elastomeric Fluid-Applied System:** ASTM D 7311, elastomeric, two-coat, two [2] component Bio based polyurethane fluid-applied roofing formulated for application to single ply roofing, with the following minimum physical properties:
1. **Aliphatic Urethane Base Coat:**
 - a. Basis of Design Product: Tremco, AlphaGuard Bio Base Coat.
 - b. Asbestos Content, EPA/600/R-93/116: None.
 - c. Volatile Organic Compounds (VOC), ASTM D 3960: Not greater than 40 g/L.
 - d. Percent solids (by weight), ASTM D 1644: Not less than 85 percent.
 2. **Aliphatic Urethane Top Coat:** UV-stabilized, chemical-resistant top coat:

- a. Basis of Design Product: Tremco, AlphaGuard Bio Top Coat.
- b. Asbestos Content, EPA/600/R-93/116: None.
- c. Volatile Organic Compounds (VOC), ASTM D 3960: Not greater than 45 g/L.
- d. Elongation at break, ASTM D 7311: Not less than 340 percent
- e. Tensile Strength, ASTM D 7311: Not less than 1,400 lbf/sq. in.
- f. Tear Resistance, ASTM D 7311: Not less than 150 lbf/in.
- g. Accelerated Weathering, 5000 hour, ASTM D 7311: Pass, no cracking or checking.
- h. Percent solids (by weight), ASTM D 1353: Not less than 85 percent.
- i. Color: White, with Solar Reflectance Index meeting performance requirements

B. Polyester Reinforcement: Perma fab polyester for fluid-applied membrane and flashing.

- 1. Basis of Design Product: Tremco, AlphaGuard Glass Mat.

2.4 AUXILIARY ROOFING MEMBRANE MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system and fluid-applied roofing system.

B. Structural Concrete/Masonry Primer: Two-component, 100 percent solids, epoxy penetrating primer for concrete deck surfaces.

- 1. Basis of Design Product: Tremco, AlphaGuard C-Prime.

C. Metal Surface Primer: Single-component, water based primer to promote adhesion of base coat to metal surfaces.

- 1. Basis of Design Product: Tremco, AlphaGuard M-Prime.

D. Asphaltic Surfaces Primer: Single-component, multi-substrate primer to promote adhesion of base coat to surfaces recommended by manufacturer.

- 1. Basis of Design Product: Tremco, AlphaGuard Re-Prime AlphaGuard WB Primer.

E. Aggregate: For finish coat slip resistance: Silica sand, 20 – 40 mesh.

F. Mastic Sealant: Polyisobutylene, plain or modified bitumen, nonhardening, nonmigrating, nonskinning, and nondrying.

G. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacture.

H. Single ply membrane: ASTM D 4434 Elvaloy based elastomeric tri polymer. 45 mil bare back TPA single ply membrane.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
2. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.

3.2 PREPARATION

- A. In designated locations, directly over [e] Silicone coating, furnish and install [n] TPA membrane, mechanically attached. See 3.6 letter Q.
- B. Clean substrate of dust, debris, algae growth, and other substances detrimental to roofing installation according to roofing manufacturer's written instructions. Remove sharp projections.
- C. **Protect existing roofing system** that is indicated to remain, and adjacent portions of building and building equipment.
 3. Mask surfaces to be protected. Seal joints subject to infiltration by coating materials.
 4. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
 5. Maintain temporary protection and leave in place until replacement roofing has been completed.
- D. **Shut down air intake equipment** in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with re-coating work that could affect indoor air quality or activate smoke detectors in the ductwork.
 6. Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.
- E. **Maintain roof drains** in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 7. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- F. Remove existing repairs on field of roof, base flashings, drains and at penetrations/projections. Remove all failed caulking at roof to wall and roof to flashing intersections.
- G. Removal and replacement of wet insulation: Remove and replace all wet insulation. See Section 3.4

3.3 FLUID-APPLIED MEMBRANE ROOFING INSTALLATION, GENERAL

- A. Install roofing membrane according to roofing manufacturer's written instructions.
 1. Commence installation of fluid applied roofing in presence of manufacturer's technical personnel.
- B. Coordinate installation of roofing so insulation [if exposed] and other components of roofing not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 1. Provide tie-offs at end of each day's work to cover exposed roofing sheets and insulation with a course of coated felt set in roofing cement with joints and edges sealed.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 3. Remove and discard temporary seals before beginning work on adjoining roofing.

- C. Substrate-Joint Penetrations: Prevent fluid-applied materials and adhesives from penetrating substrate joints, entering building, or damaging built-up roofing components or adjacent building construction.

3.4 REMOVAL AND REPLACEMENT OF WET INSULATION

- A. As outlined in paint on roof, remove and replace all wet insulation.
- B. Carefully remove [e] wet insulation to deck. Ensure area is clean and dry.
- C. Furnish and install base layer of Isocyanurate insulation and secure to deck with screws and plates. Match [e] thickness.
- D. Furnish and install ½ inch primed Dens deck set in low-rise foam.
- E. Furnish and install new two [2] ply modified bitumen roofing system.

3.5 CLEANING OF EXISTING MEMBRANE AND FLASHINGS:

- A. Provide one of the following methods of cleaning roof membrane:
 - 1. Power wash with minimum of 2,000 psi with approved power washing equipment.
 - 2. Roof Tec or equal: Self contained roof cleaning process.
- B. All water containment must be in compliance with current State and EPA regulations
- C. Clean roof membrane to meet manufactures requirements for an acceptable substrate:
 - 1. Power wash roof and flashing surfaces with a high pressure using 2,000 psi. Brush agitate the entire surface. **OR as an option:**
 - 2. Using a roof cleaning service/system that uses only environmentally safe cleaning product thru cleaning, agitating and reclamation process. Equipment shall deliver over three [3] gallons per minute, rotating wash head, pressure 2,500 psi and water reclamation, 100 %.
- D. Disposal of water used in roof cleaning
 - 1. Provide owner with plan to properly dispose of water per local, State and EPA for approval prior to starting work.

3.6 FLUID-APPLIED MEMBRANE APPLICATION

- A. Base Coat: Apply coating base coat to single ply surface in accordance with manufacturer's written instructions. Back roll to achieve minimum wet mil coating thickness four [4] gallons per 100 square feet, unless otherwise recommended by manufacturer; verify thickness of base coat as work progresses.
 - 1. Apply base coat on prepared and primed surfaces and spread coating evenly. Embed polyester into base coat over entire field of roof to include baseflashings.
 - 2. Embed polyester reinforcement into wet base coat. Lap adjacent flashing pieces of polyester minimum 3 inches along edges and 6 inches at end laps.
 - 3. Roll surface of polyester reinforcing to completely embed and saturate fabric. Leave finished base coat with fabric free of pin holes, voids, or openings.
 - 4. Allow base coat to cure prior to application of top coat.
 - 5. Following curing of base coat and prior to application of top coat, sand raised or exposed edges of polyester reinforcement.

- I. Fluid-Applied Flashing Application: Complete base coat and polyester reinforcement at parapets, curbs, penetrations, and drains prior to application of field of fluid-applied membrane.
 - 1. Extend coating minimum of 8 inches up vertical surfaces and 4 inches onto horizontal surfaces.
 - 2. Roof Drains: Install base coat onto surrounding membrane surface and metal drain bowl flange. Install target piece of polyester reinforcement immediately into wet base coat and roll to fully embed and saturate fabric. Reinstall clamping ring and strainer following application of top coat. Replace broken drain ring clamping bolts.
- J. Top Coat: Apply top coat uniformly in a complete installation to flashings and field of roof.
 - 1. Prime base coat prior to application of top coat if top coat is not applied within 72 hours of the base coat application, using manufacturer's recommended primer.
 - 2. Apply top coat to flashings extending coating up vertical surfaces and out onto horizontal surfaces 4 inches. Install top coat over field base coat and spread coating evenly.
 - 3. Achieve wet mil thickness of two [2] gallons per 100 square feet unless otherwise recommended by manufacturer.
 - 4. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.
- K. Drains: Furnish and install waterblock to insure no water enters between the membrane and the drain /drain bowl. Set clamping ring in TF tape prior to securing.
- L. Penetrations/projections: Install fluid applied roofing to and around penetration/projection. Remove and replace caulking at top of flashings/storm collar.
- M. Walkways: Furnish and field apply fluid applied roofing and silca sand to match [e] walkways to form new walkway path. Walk ways to have different color than field of roof. Walkways shall be outlined in safety yellow in a four [4] inch wide band. Walk way pattern to be provided by owner.
- N. Caulking: Remove and replace [e] caulking at all roofing to metal flashings and metal to metal flashings.
- O. Cover plates: Furnish and install new four [4] inch twenty four [24] gauge cover plates on all coping joints. Set plates in a bead of caulking on either side and secure with washered screws.
- P. Expansion joints: Clean and repair all laps, seams and defects with like same materials prior to coating with fluid applied roofing.
- Q. Single ply retro fit: Furnish and install [n] single ply membrane, mechanically attached with screws and plates. Around perimeter of area, furnish and install six [6] wide strip of TPA coated mechanically attached with screws and plates. Heat weld field sheet directly to coated metal. Strip area in with a "Dress coat" of Bio base coat @ the rate of 2 gallons per 100 square feet and embed Perm fab with no wrinkles or voids.

3.7 FIELD QUALITY CONTROL

- R. Roof Inspection: **Contractor shall engage** roofing system manufacturer's technical personnel to inspect roofing installation, and submit report to the owner. A minimum of four [4] eight [8] hour days are required. Notify owner 48 hours in advance of dates and times of inspections. Inspect work as follows:
 - 1. Upon completion of preparation of first component of work, prior to application of re-coating materials.
 - 2. Following application of re-coating to flashings and application of base coat to field of roof.
 - 3. Upon completion of re-coating but prior to re-installation of other roofing components.

- S. Repair fluid-applied membrane where test inspections indicate that they do not comply with specified requirements.
- T. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.

3.8 PROTECTING AND CLEANING

- U. Protect roofing system from damage and wear during remainder of construction period.
- V. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.

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

SECTION CONTINUES

3.9 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

- 1. Owner: _____
- 2. Address: _____
- 3. Building Name/Type: _____
- 4. Address: _____
- 5. Area of Work: _____
- 6. Acceptance Date: _____
- 7. Warranty Period: _____
- 8. Expiration Date: _____

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

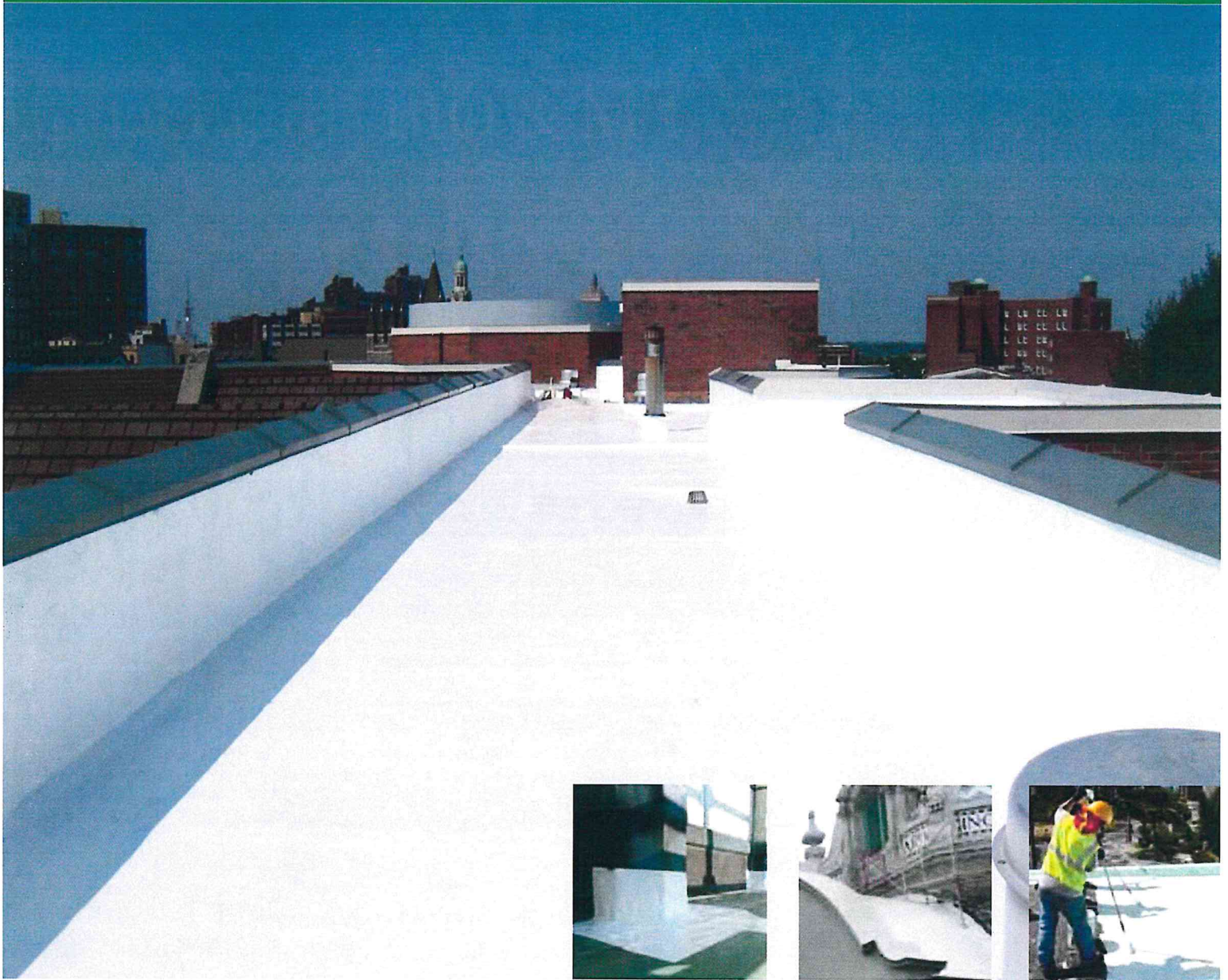
- 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding [74 mph (33 m/s)];
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and

- g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed by:

1. Authorized Signature: _____
2. Name: _____
3. Date: _____

END OF SECTION 07 56 00.13

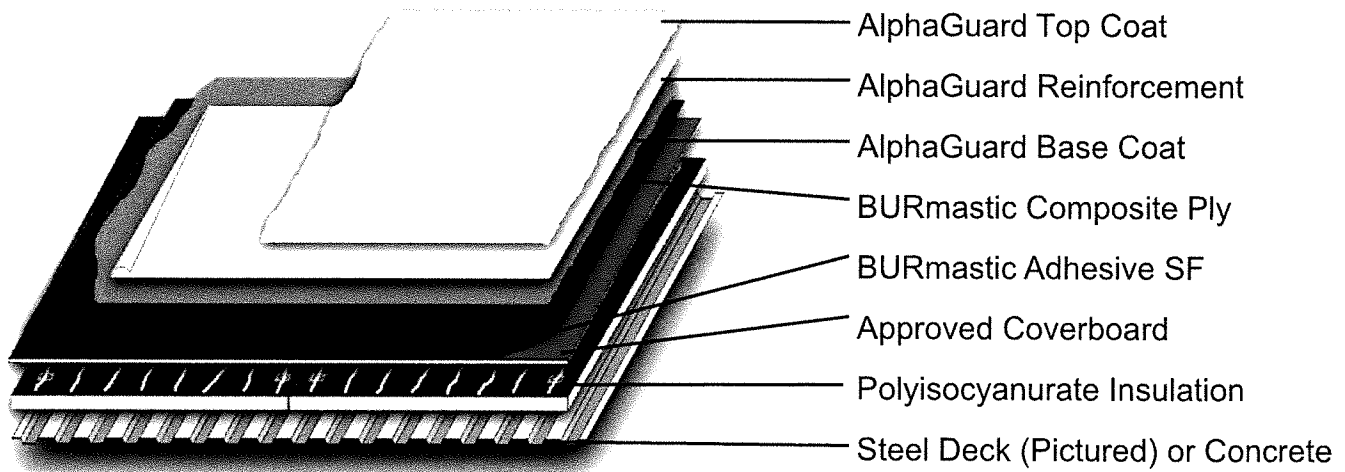


INSTALLATION GUIDE

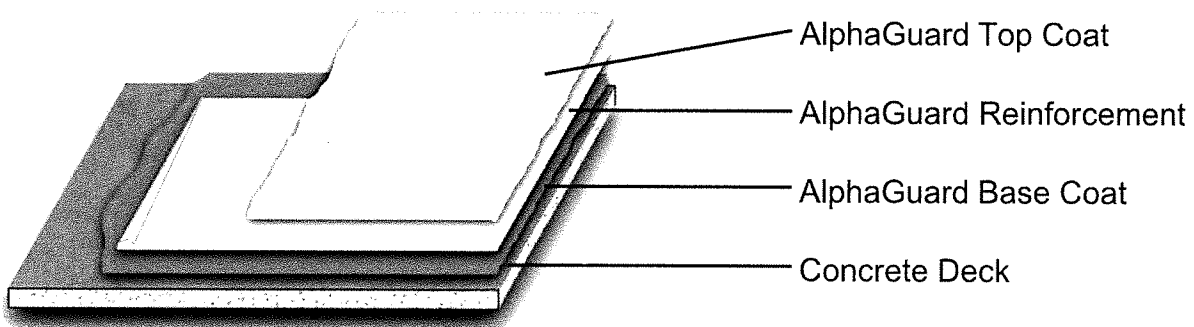
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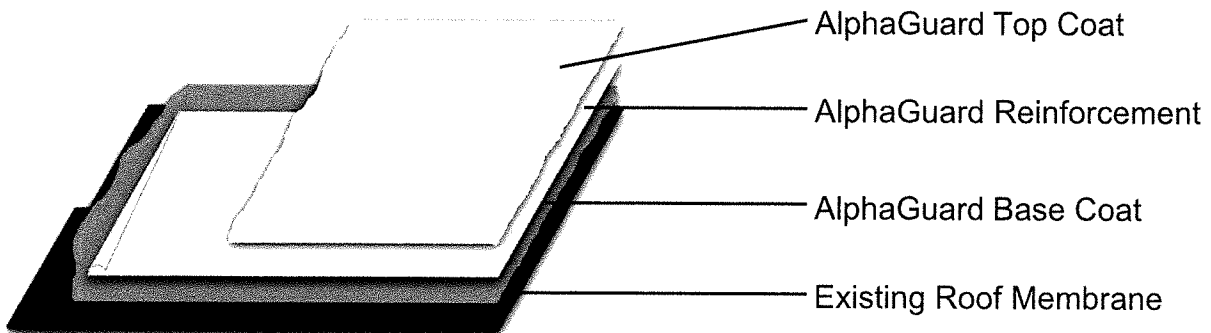
AlphaGuard Plus Roofing System



AlphaGuard Concrete Roofing System



AlphaGuard Restoration System



General Overview

AlphaGuard MT

The AlphaGuard MT System is a liquid-applied, moisture triggered, aliphatic, polyurethane elastomeric roofing membrane that provides seamless waterproofing.

The unique moisture triggered formula uses moisture from the air to begin the curing process, but does not rely on moisture for the entire curing process. This differs from moisture cured urethanes, which needs the moisture for the entire curing process and is susceptible to carbon dioxide gassing and pin holing. This makes for a more stable, uniformed cure.

This UV resistant, high solid, durable roofing system is low odor, low VOC and is field-applied with one-part liquid waterproofing layers reinforced with fabric. AlphaGuard MT can be fully bonded to a variety of substrates as a maintenance and restoration system or as a new construction system.

Fabric reinforcement is required to provide dimensional stability to the cured urethane waterproofing. Fabric reinforcement will prevent potential shrinkage, especially in high movement flashing areas.

AlphaGuard BIO

The AlphaGuard BIO System is a liquid-applied, bio-based, two-component, polyurethane roofing field and flashing elastomeric membrane that provides seamless waterproofing.

The development of AlphaGuard BIO is derived from unique bio-based, polyurethane technology. The high bio-content makes for a sustainable, environmentally responsible roofing product while the polyurethane technology offers long-term waterproofing performance in the toughest conditions.

AlphaGuard BIO is a low VOC product with minimal to no odor, making it ideal for applications over occupied space causing little to no disruption to the building's occupants.

The 100% solids, highly reflective, UV resistant product is a field applied two-component roofing system. The two-component technology has a catalyzed curing process which results in a faster dry times, a more uniform finished film, and negates the possibility of blistering, gassing, pinholing, etc.

AlphaGuard BIO can be installed to a variety of substrates as a maintenance and restoration system, as a liquid flashing membrane, or as a new construction system. Fabric reinforcement is required to provide dimensional stability to the cured urethane waterproofing.

Storage & Handling

All AlphaGuard components will be delivered to the site in original sealed containers. Store AlphaGuard components in cool, dry spaces outside of direct sunlight in accordance with local regulations. Store away from heat, open fire, or any ignition sources. In addition, store away from strong acids or bases.

Rolls must be stored vertically to prevent contact with water and other contaminants. Optimum storage temperature is between 60°F and 90°F. Shelf life drops at temperatures above this range. In addition, resins risk self-polymerization when exposed to temperatures above 140°F.

Do not smoke around Geogard Primer and keep product away from open flame, fire, or any ignition source. Geogard Primer, in particular, is flammable and harmful if inhaled, swallowed or absorbed through the skin. This can cause skin, eye, and respiratory irritation.

Weather Restrictions

AlphaGuard System installations cannot proceed when there is a threat of precipitation or condensation on the substrate exists. Applying AlphaGuard during or just before a precipitation event can cause the surface to become pitted or distorted.

Application of AlphaGuard MT System is permitted when the ambient temperature is between 50°F (10°C) and 110°F (43°C) and the substrate temperature is a minimum of 5°F above the dew point. It is required that overnight temperatures be above 40°F (4.4°C).

Application of AlphaGuard BIO System is permitted when the ambient temperature is between 45°F (7°C) and 110°F (43°C) and the substrate temperature is a minimum of 5°F above the dew point. It is required that overnight temperatures be above 40°F (4.4°C).

Personal Protection Equipment

Refer to the MSDS for each product for specific PPE information.

Provide the following to installers: Safety Shoes & Overalls, suitable Hand, Eye, and Ear Protection, and hard hats & appropriate fall protection. Comply with requirements of OSHA, NIOSH or governing local authority regarding barricades, retaining ropes, and other safety elements (active / passive).

Use AlphaGuard with adequate ventilation or respiratory protection as needed to keep exposure below TLV values within applications lacking sufficient natural air movements. Protect HVAC air intake ducts from infiltration into the building interior. Pre-existing eyes, skin, and respiratory issues may be aggravated by exposure, and may cause skin and respiratory sensitization.

Geogard Primer is flammable and harmful if inhaled, swallowed or absorbed through the skin. This can cause skin, eye, and respiratory irritation. Do not smoke around Geogard Primer and keep product away from open flame, fire, or any ignition source.

Tools & Equipment

- Blower, Broom, or Vacuum
- Chalk Line
- Disposable Rubber Gloves
- Extension Cords
- Garbage Bags
- Generator
- Hand Grinder
- Hand Sander
- Masking Tape
- Pail Heat Bands
- Paint Brushes - 4"
- Paint Roller Cages - 4" & 9"
- Paint Roller Covers - 4" & 9" - 3/8-1/2" nap
- Paint Roller Extension Handles
- Paint Trays
- Power washer (3,000 psi max)
- Rags
- Scarifier (concrete substrates)
- Scissors and/or Razor Knives
- Screwdrivers
- Shot Blaster (concrete substrates)
- Sockets / Wrenches
- Squeegees - Flat Blade & 1/4" Notched
- Tap Set
- Tape measure
- Tarps and/or Sheeting
- Wet Mil Gauge
- Water Source

Product List

Fluid-Applied Membrane

AlphaGuard MT Base Coat
AlphaGuard MT Top Coat
AlphaGuard BIO Base Coat Kits (Part A & B)
AlphaGuard BIO Top Coat Kits (Part A & B)

Reinforcing Materials

AlphaGuard Glass Mat
Permafab (Polyester Reinforcement)

Primers

AlphaGuard C-Prime
AlphaGuard M-Prime
AlphaGuard WB Primer
Geogard Primer
Tremco Primer/Splice Wash
Tremco Primer/Splice Wash LV

Mastics

Solargard Seam Sealer

Base Sheets

BURmastic Composite Ply
BURmastic Composite Ply HT
BURmastic Composite Ply Premium
BURmastic Supreme Composite Ply

Base Sheet Adhesive

BURmastic Adhesive SF

Insulation Adhesive

Tremco Low Rise Foam Adhesive



ROOFING & BUILDING MAINTENANCE

AlphaGuard Primer Matrix

Substrates	C-Prime	M-Prime	Re-Prime	Primer/Splice Wash	WB Primer
Wood					
Metal		X			
Concrete	X				
Brick	X				
Stone	X				
Bituminous Surfaces			X		X
MB Cap Sheets			X		X
EPDM				X	X*
PVC/TPA					X
TPO					X
Hypalon				X	X
Plastic/PVC Pipes		X			
Urethane Coated Surfaces			X		X

*When using AlphaGuard WB Primer, a test patch must be utilized to ensure proper adhesion to the substrate.

Chart 1

System Qualifications

Existing Warranties

Notify warrantor of extent of work. Do not proceed with work that will diminish Owner's protection under existing warranties unless directed by Owner.

Examination

Examine existing roofing substrates, with Installer present, for compliance with requirements and for other conditions affecting application and performance of roof coatings.

- For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
- Verify compatibility with and suitability of substrates.
- Verify that substrates are visibly dry and free of moisture. Conduct an IR scan on applicable roof assemblies to identify moisture within the existing roof system.
- Verify that roofing membrane surfaces have adequately aged to enable proper bond with base coat.
- Verify that roofing membrane is free of blisters, splits, open laps, indications of shrinkage, and puncture damage or other indications of impending roof system failure.
- Application of fluid-applied membrane indicates acceptance of surfaces and conditions.

Preparation

Protect existing roofing system that is indicated not to receive fluid-applied roofing, and adjacent portions of building and building equipment.

- Comply with warranty requirements of existing roof membrane manufacturer.
- Limit traffic and material storage to areas of existing roofing membrane that have been protected.
- Maintain temporary protection and leave in place until replacement roofing has been completed.

Shut down air intake equipment in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with coating work that could affect indoor air quality or activate smoke detectors in the duct work.

- Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.

Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

- Do not permit water to enter into or under existing membrane roofing system components that are to remain.

System Qualifications

Roof Coating Preparation

Membrane Surface Preparation:

- Remove aggregate ballast or pavers from roofing membrane.
- Remove blisters, ridges, buckles and other substrate irregularities from existing roofing membrane that would inhibit application of uniform, waterproof coating.
- Repair membrane at locations where irregularities have been removed.
- Broom clean existing substrate.
- Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect adhesion of fluid-applied membrane by power washing at minimum 2,000 psi. Remove existing coatings if any. Allow to dry thoroughly.
- Verify that existing substrate is dry before proceeding with application of fluid- applied roofing. Spot check substrates with an electrical capacitance moisture-detection meter.

Roof Coating Preparation

Roof Patching: Notify Owner each day of extent of roof tear-off proposed and obtain authorization to proceed.

- Build-up isolated low spots on existing roofing membrane with fluid- applied manufacturer's recommended products to alleviate ponding.
- Limited Roof Tear-Off: Where indicated, remove existing roofing membrane and other membrane roofing system components down to the deck. Fill in the tear-off areas to match existing membrane roofing system construction.
- During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

Existing Flashings

Remove or repair existing base flashings around parapets, curbs, walls, and penetrations.

- Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- Do not damage metal counterflashings that are to remain. Replace damaged counterflashings with counterflashings of like metal, weight/ thickness and finish.
- Repair flashings with like materials.
- Repair gravel stops, copings and other roof related sheet metal and trip elements. Reseal joints, replace loose or missing fasteners, and replace components where required to create a watertight condition.

Surface Preparation

Before beginning the project, consider the substrates that are present on your project and refer to the primer matrix (see Chart 1) to select the proper primer.

The substrate in which you will be roofing must be clean and dry. All surfaces should be cleaned with a power washer (min. 2,000 psi) and a cleaning solution that is appropriate for the substrate. Any existing roof system should have a thermal IR scan performed. This will ensure that all areas of concern will be addressed and wet insulation will be removed.

ASPHALT BUR / MB SYSTEMS

When restoring asphalt based roof systems, make all necessary repairs using Solargard Seam Sealer and Permafab. Once all repairs have been made, allow to cure for a minimum of 24 hours before applying the AlphaGuard System.

All surfaces to have AlphaGuard applied, should be power washed (min. 2,000 psi) and all debris removed from roof. Once roof is clean and dry, prime all surfaces that are to be treated. Refer to the primer matrix (see chart 1) for the appropriate primer for this substrate.

For modified bitumen and cap sheet roofs, end laps and side laps must be treated with AlphaGuard base coat or Solargard Seam Sealer at a rate of 50 linear feet/gallon.

CONCRETE DECKS

*When applying AlphaGuard to a concrete substrate, **always** refer to the International Concrete Repair Institute (ICRI) manual for *Selecting and Specifying Concrete Surface Preparation for Sealers, Coating, and Polymer Overlays no. 03732-1.**

In order to use AlphaGuard over a concrete substrate, the surface must be prepared to accept the roofing system. All grease, oils, asphalt remnants, buildup and debris must be removed. The surface must be repaired prior to applying AlphaGuard. All cracks larger than ¼" must be repaired using a rapid set, self-leveling concrete repair mixture. Allow to properly set and dry before proceeding.

Areas that are raised more than ¼", must be leveled or ground down. This will allow for a level and sound substrate for AlphaGuard. The surface must be shot blasted or scarified to achieve a CSP 3-6 profile (ICRI 03732-1). This will allow the AlphaGuard system to properly adhere to the substrate.

For new concrete substrates, allow a minimum of 28 days, and always test the moisture in the concrete before proceeding with installation of AlphaGuard.

EXISTING URETHANE COATINGS

Existing urethane coatings should power washed (min. 2,000 psi) and allowed to dry before any AlphaGuard is applied. Refer to the primer matrix (see chart 1) for the appropriate primer for this substrate. Allow primer to fully dry before applying AlphaGuard to the substrate.

SINGLE PLY SYSTEMS

The substrate must be inspected for loose flashings, popped fasteners and tearing of the membrane.

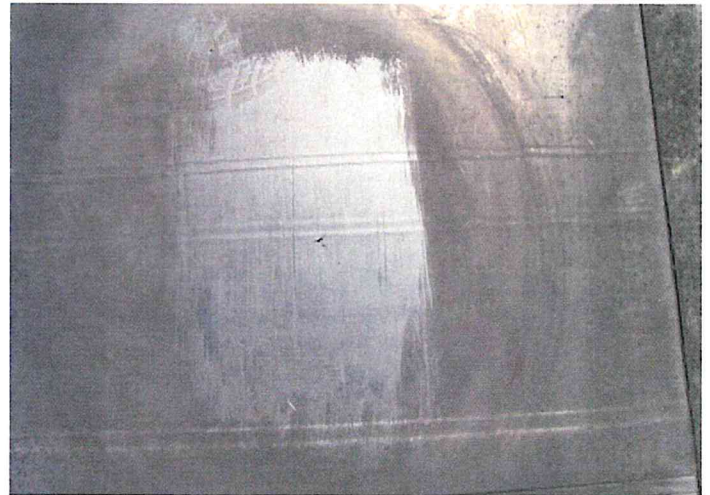
All single ply substrates must be clean and dry before any AlphaGuard is applied. The surface must be power washed (min. 2,000 psi) and cleaned with a mild detergent (wax free). Remove any walkway pads and make all necessary repairs before priming the surface. Refer to the primer matrix (see chart 1) for the appropriate primer for this substrate.



Wrinkles in EPDM will telegraph through the AlphaGuard system. It is necessary to make these repairs before applying AlphaGuard.



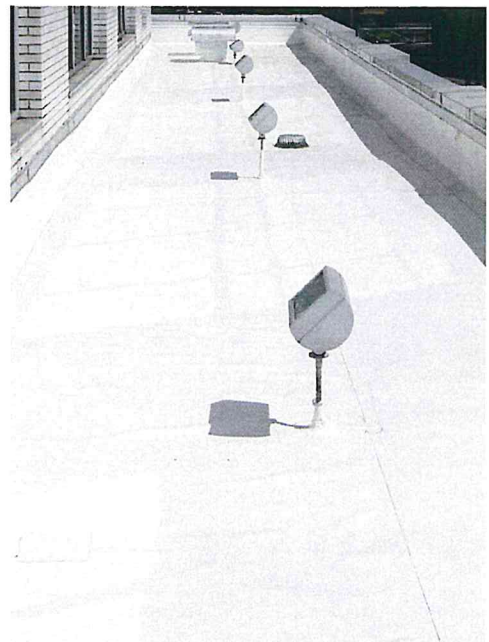
(Fig. 1)



Holes and tears in membranes must be repaired before AlphaGuard is applied.



(Fig. 2)



White single ply roof, cleaned and ready to be coated with AlphaGuard.

METAL SURFACES

When coating a metal surface, all rusted or oxidized areas must be ground to a bright metal surface. Any painted surfaces should be tested to verify adhesion, either by a small test area or sending a small sample into our lab. Refer to the primer matrix (see chart 1) for the appropriate primer for this substrate.

WOOD SURFACES

AlphaGuard can be applied directly to small wooden details and walls of wood construction. If a wood deck is being utilized, insulation and /or a base sheet must be used. Consult Tremco Technical Service for the recommendations on your project.

BRICK OR STONE SURFACES

When coating or flashing brick or stone, power wash the surfaces and remove any loose mortar or protruding surfaces. Refer to the primer matrix (see chart 1) for the appropriate primer for this substrate.



Metal substrates must be clean and primed with M-Prime.

AlphaGuard Application On Concrete Decks

Minimum deck thickness for structural concrete is 4".

Only poured-in-place concrete that provides bottom side drying is acceptable.

Structural Concrete Deck must be structurally sound, dry, and free of grease, oils, coatings, dust, curing compounds and other contaminants. Surface laitance must be removed. The surface must be scarified, shot blasted or pressure washed with high/ultra high pressure. Remove oil, grease smear and asphalt residue with trisodium phosphate or a strong detergent. For oil contaminated surfaces, use steam cleaning in conjunction with a strong emulsifying detergent. Rinse thoroughly with potable water.



Properly prepared concrete substrate

Remove defective concrete, honeycombs, cavities, joint cracks, voids and other defects by routing to sound material. Smooth precast and formed concrete surfaces must be cleaned,

roughened and made absorptive by mechanical abrasion. Surface profile should be equal to CSP 3-6 in accordance with ICRI Guideline 310.2. If it is not possible to mechanically abrade, acid etch with a 15% Hydrochloric acid solution. After etching, pressure wash or flush the surface with copious amounts of water to neutralize the surface. Care must be taken to ensure that all salts and residue from the reaction have been removed.

The pH of the surface should be checked, as per ASTM D 4262, following acid etching. Following surface preparation, apply AlphaGuard MT to the cleaned surface in a small area. An Elcometer Pull Off Adhesion tester or similar (ASTM D 4541) must be used to test the trial area for proper adhesion. Before application of the coating, use the "Visqueen test" (ASTM D 4263) to evaluate moisture level in concrete.

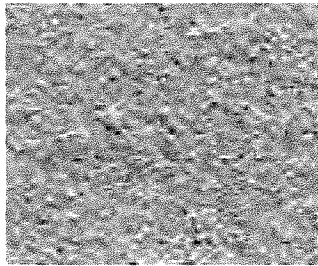
Allow new structural concrete to cure for a minimum of 28 days. Remove any surface hardener or curing compounds by using the recommended mechanical methods for surface preparation.

Patch all unsound or defective concrete with repair mortar acceptable to material manufacturer.

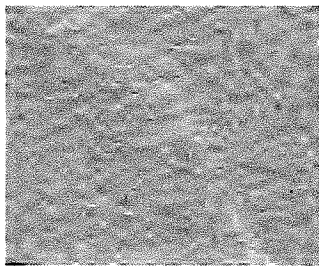
Prevent dust, vapors, gases, and odors from entering into the building during roof installation. When shutting down or blocking air intakes, provide makeup air or additional intake air from sources away from the work area. Coordinate these procedures with owner's Representative.

Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at the end of each workday, when no work is taking place, or when rain is forecast. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

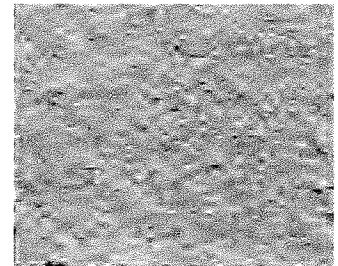
ICRI Surface Profiles



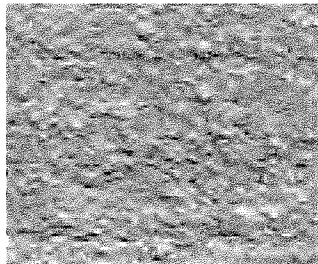
CSP 1
(Acid Etched)



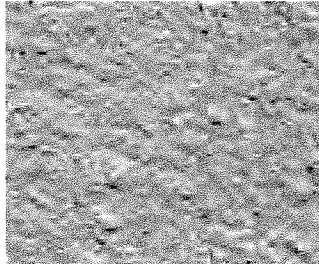
CSP 2
(Grinding)



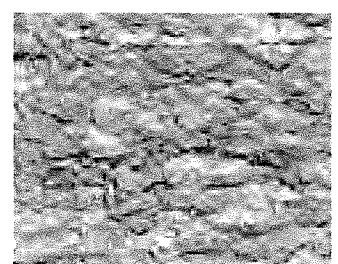
CSP 3
(Light Shot blasting)



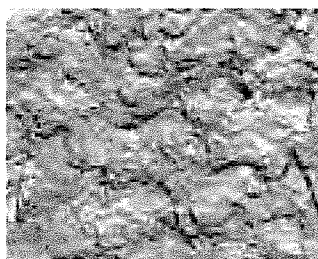
CSP 4
(Light Scarification)



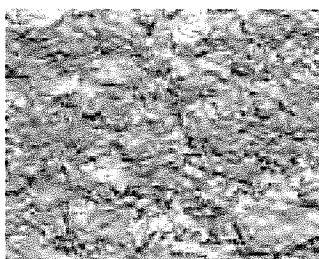
CSP 5
(Medium Shot blasting)



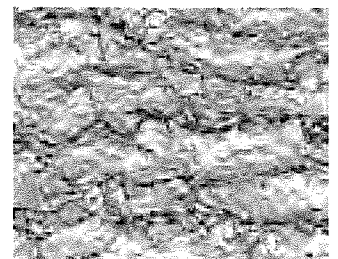
CSP 6
(Medium Scarification)



CSP 7
(Heavy Abrasive Blast)



CSP 8
(Scabbled)



CSP 9
(Heavy Scarification)

Surface profiles are provided by the International Concrete Repair Institute (ICRI). Molded replicas of these profiles can be purchased from ICRI at www.ICRI.org.

GENERAL INSTALLATION REQUIREMENTS

Use products with personal protection equipment. User must read container label and material safety data sheets prior to use.

Store all materials prior to application at temperatures between 60°F and 90°F

Use with adequate ventilation. Protect HVAC air intake ducts from infiltration into the building's interior.

Application Temperatures:

AlphaGuard BIO: 45°F - 110°F

AlphaGuard MT: 50°F - 110°F

* Cure times are extended below 50°F

Prevent materials from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

Painters tape shall be used to mask detail areas and metal flashings. Remove tape while AlphaGuard remains wet.

All flashings shall be installed first, before the field of the roof is covered.

After base coat and fiberglass reinforcement have been installed, and before the top coat is installed, a thorough inspection of the surface must be conducted by the manufacturer's technical representative. The fiberglass reinforcement must be completely encapsulated by the base coat, with no pinholes or voids, at the end of each work day.

Coverage rates of base coat and top coat must be continuously verified for proper wet film thickness with a wet mil gauge.

Coverage rate of base coat may vary depending on surface conditions.

Raised or exposed fiberglass reinforcement shall be sanded smooth prior to application of top coat.

ALPHAGUARD C-PRIME INSTALLATION

Mixing: Use clean containers and mixing equipment.

Using a low speed "Jiffy" type mixer, mix the A & B components separately for approximately one minute.

Combine one part by volume Part A with one part by volume "B". Mix the components thoroughly for three to five minutes.

Scrape the bottom and sides of the mixing container at least once. Do not mix air into the blend. Mix only enough material that can be used within the working life.

Application: The ambient and surface temperature must be between 50°F to 90°F (10°C to 32.2°C).

Apply to concrete using a short nap roller, squeegee, or brush.

Coverage rates may vary depending on concrete surface conditions.

Surface temperature, porosity and texture will determine actual material quantities. Ensure primer does not puddle and substrate has complete coverage.

AlphaGuard base coat can be applied as soon as the primer has become tack free.

ALPHAGUARD BIO MIXING INSTRUCTIONS

Using a low speed "Jiffy" type mixer, mix AlphaGuard BIO Part A for one minute.

Combine Part B with Part A in its entirety. Do not breakdown kits into smaller quantities.

Mix the components thoroughly until completely blended (typically 2 minutes). Mix only enough material that can be used within the pot life (20-25 minutes).

FLASHING AND STRIPPING INSTALLATION

Base coat and fiberglass reinforcement must be installed on all curbs, penetrations, and drains before moving to installation in the field.

Install masking tape or similar along the top edge of flashings where base coat will terminate.

Prime all metal surfaces with AlphaGuard M-Prime prior to installing flashings.

Install base coat to flashing surfaces according to manufacturer's written instructions. Extend coating up vertical surfaces a minimum of 8" and out onto horizontal surfaces 4".

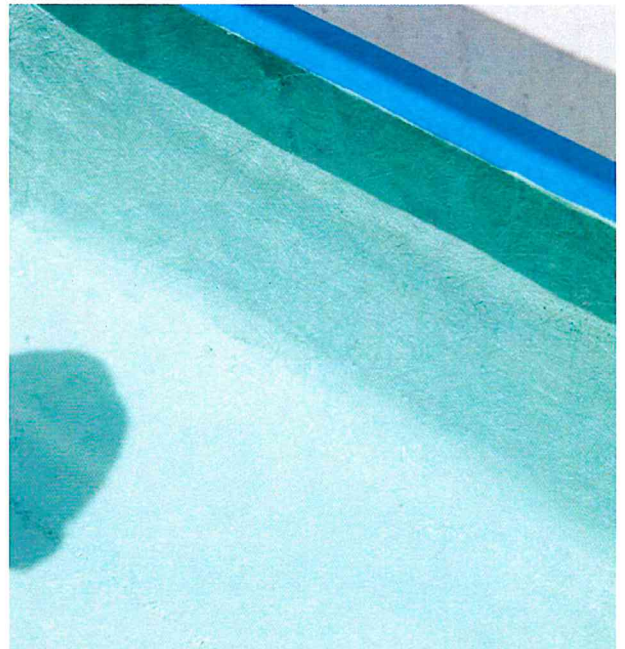
Back roll to achieve a minimum wet mil coating thickness as required by the manufacturer.

Install fiberglass reinforcement immediately into wet base coat. Extend reinforcement up vertical surfaces a minimum of 8" and out onto horizontal surfaces 4". Install according to manufacturer's written instructions.

Lap adjacent flashing pieces of fiberglass no less than 3". Roll the surface of the fiberglass to completely embed it into the wet base coat.



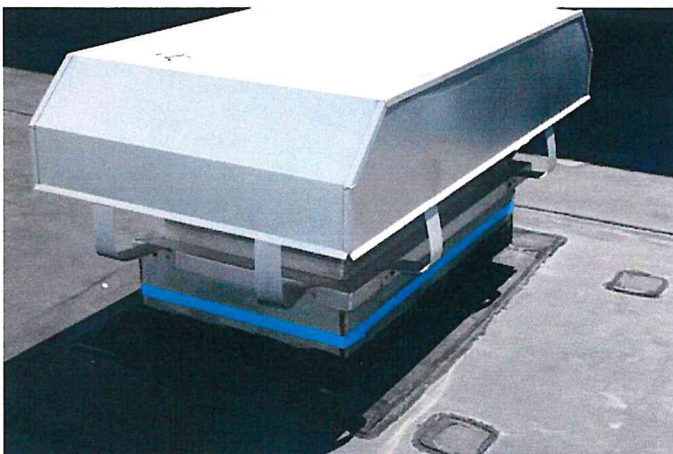
Prime all metal surfaces with M-Prime.



The fiberglass reinforcement must be backrolled to ensure material saturates through the reinforcement.



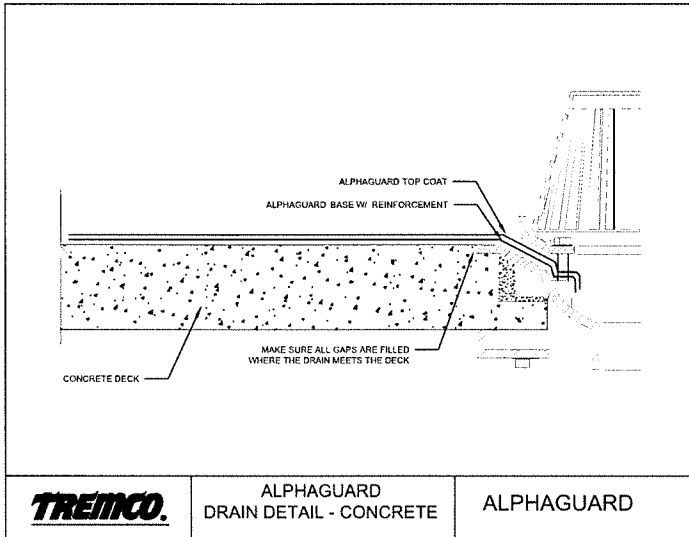
Fiberglass must be fully encapsulated in base coat without pin holes, voids, or openings.



Tape all edges to provide a straight line for all flashing details.

ROOF DRAINS

Remove drain strainer and clamping ring. Remove all rust and debris from the surface of drain bowl. If necessary use a grinder to sand metal surfaces down to clean, bare, metal.



Prime metal surfaces with AlphaGuard M-Prime.

Install base coat onto surrounding concrete deck and metal drain bowl flange. Install a target piece of reinforcement immediately into the wet base coat and roll to fully embed/saturate the material.

After top coat has been installed re-install drain clamping ring and strainer. Replace broken drain ring clamping bolts if necessary.

ALPHAGUARD MEMBRANE APPLICATION

Base Coat Application:

Install base coat directly onto primed concrete surface and spread coating evenly according to manufacturer's written instructions. Back roll to achieve the desired minimum wet mil thickness.

Install reinforcement immediately into wet base coat. Using a wet roller, fully embed the reinforcement into the wet base coat. Roll until fully saturated. Reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.

Lap adjacent rolls no less than 3". End laps shall be no less than 6". Lap onto flashing no less than 3".

Allow base coat to cure a before installing top coat.

Top Coat Application:

Apply top coat over cured base coat beginning with flashings then install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions. Back roll to achieve a minimum thickness of 32 wet mils on both flashings and field.

Priming of the base coat with Geogard Primer may be required if top coat is not applied within 72 hours of the base coat application.

Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

WALKWAY INSTALLATION

Non-Skid Walkway Application:

1. Identify walkway areas as indicated, or as directed by Owner.
2. Apply additional application of top coat to taped walkway area at 1¼ gals / SQ (20 wet mils).
3. Broadcast approximately 20-30 lbs. per 100 sq.ft. of 20-40 mesh silica sand or quartz in the wet top coat material.
4. Immediately back roll sand and top coat, creating an even dispersal of sand.
5. Remove tape outlining walkway immediately.

** If walkway application is not applied within 72 hours of the top coat application the top coat shall be primed with Geogard Primer.*

FLASHING DETAILS

All details are to be completed before the field of the roof. Apply the basecoat to the walls, penetrations and curbs before the field of the roof. After the field of the roof has been completed with basecoat, apply the topcoat to the walls, penetrations and curbs, followed by the field of the roof.

Parapet Walls & Coping Walls:

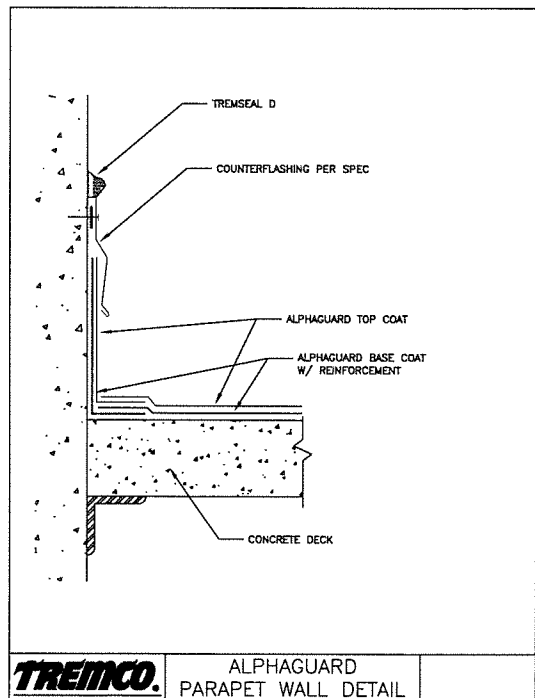
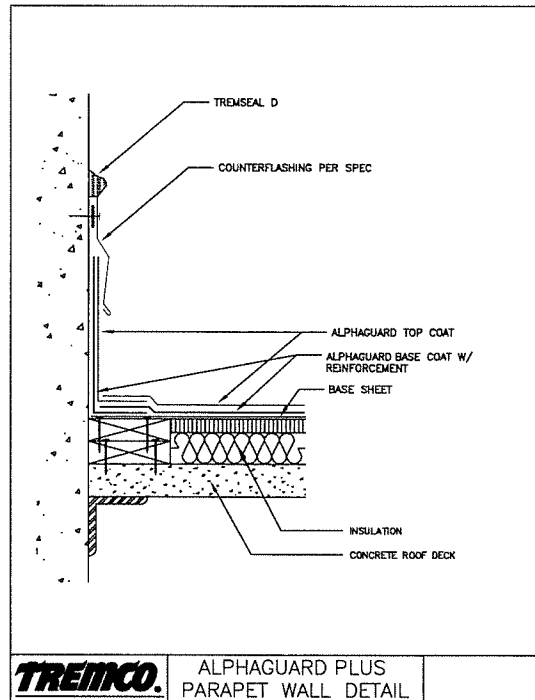
Before flashing a wall, be sure that the wall is properly cleaned and primed as appropriate. Ensure that the wall is of sound construction before flashing.

Once substrates are appropriately cleaned and prepared, apply base coat to the substrate, at the required mil thickness. The base coat should only be applied to the area that you intend to embed the reinforcement into at any given time. Using a roller or brush, fully saturate the reinforcement, working from the center outwards.

The AlphaGuard material should extend 8" above the roof substrate, per NRCA recommendations. The toe of the flashing should extend 4" onto the roof substrate, allowing for an adequate surface to lap the AlphaGuard field base coat onto the roof substrate, per NRCA recommendations. The toe of the flashing must extend a minimum 4" onto the roof substrate, allowing for adequate surface for the AlphaGuard field base coat to lap.

When encountering a corner, the reinforcement should wrap by 3-4" and be fully embedded into the AlphaGuard base coat. Using a brush, work the reinforcement into the corner. It may be necessary to make relief cuts to form tightly.

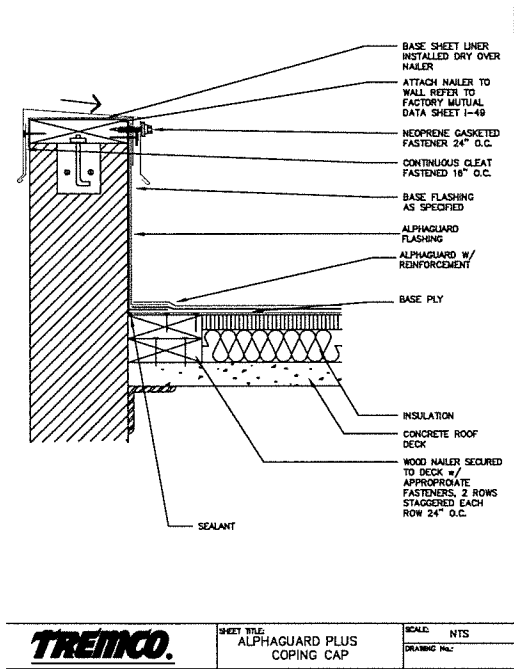
Inspect the wall and corners for any pinholes or unsaturated areas. If any areas exist, reapply a small amount of AlphaGuard base coat until areas are fully saturated.



Insulated Curbs:

Before flashing an insulated curb with AlphaGuard, one ply of BURmastic Composite ply must be set in BURmastic SF over the curb wall and onto the field of the roof. Remove excess BURmastic SF at laps and allow to cure overnight.

Once the BURmastic SF has cured, AlphaGuard can be applied directly to the BURmastic Composite ply. The AlphaGuard material should extend above the BURmastic Composite ply by at least 1". The toe of the flashing should extend 4" onto the roof substrate, allowing for an adequate surface to lap the AlphaGuard field base coat.



Wood or Solid Curbs:

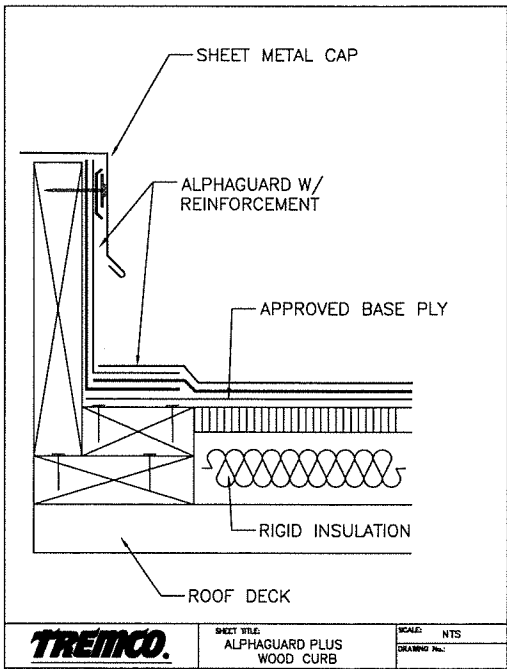
Once substrates are appropriately cleaned and prepared, apply AlphaGuard base coat to the substrate, at the required mil thickness. The base coat should only be applied to the area that you intend to embed the reinforcement into at any given time. Using a roller or brush, fully saturate the reinforcement, working from the center outwards.

The AlphaGuard material should extend 8" above the roof substrate, per NRCA recommendations. The toe of the flashing should extend 4" onto the roof substrate, allowing for an adequate surface to lap the AlphaGuard field base coat to lap.

When encountering a corner, the reinforcement should wrap by 3-4" and be fully embedded into the AlphaGuard base coat. Using a brush, work the reinforcement into the corner. It may be necessary to make relief cuts to form tightly.

Inspect the curb and corners for any pinholes or unsaturated areas. If any areas exist, reapply a small amount of AlphaGuard base coat until areas are fully saturated.

When encountering a corner, the reinforcement should wrap by 3-4" and be fully embedded into the AlphaGuard base coat. Using a brush, work the reinforcement into the corner. It may be necessary to make relief cuts to form tightly. Inspect the curb and corners for any pinholes or unsaturated areas. If any areas exist, reapply a small amount of AlphaGuard basecoat until areas are fully saturated.



Soil Stacks, Pipe Penetrations and Pitch Pockets:

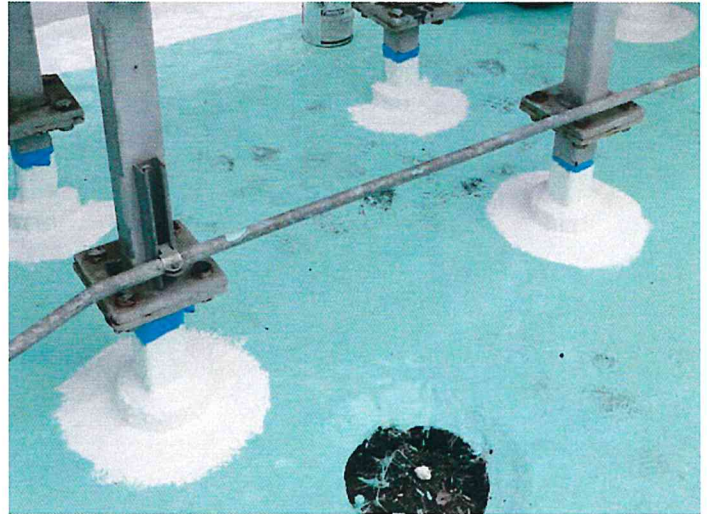
All penetrations should be properly prepared by grinding metal surfaces to a bright metal, removing asphalt residue and priming with the appropriate primers (see chart 1).

Once a penetration has been properly prepared, mark them at least 8" above the roof deck. Tape along these marks to ensure you have a clean, straight line.

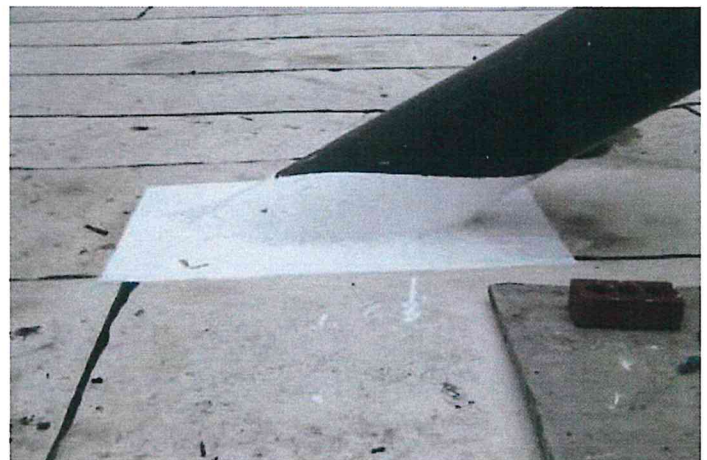
On round penetrations, cut pieces to sizes that are manageable and tear the bottom edge, 2-3" from the edge. This will allow the reinforcement to conform to the pipe. Apply the AlphaGuard base coat and fully embed the reinforcement. The field base coat should extend over the toe of the flashing, to the base of the pipe. Once cured, the AlphaGuard top coat can be applied, followed by the field top coat. On square penetrations, cut pieces that are manageable. Cut the pieces to go 8" above the field of the roof and 4" onto the field of the roof. Apply the AlphaGuard base coat and fully embed the reinforcement. The field base coat should extend over the toe of the flashing, to the base of the pipe. Once cured, the AlphaGuard top coat can be applied, followed by the field top coat.



AlphaGuard as a flashing solution, is compatible with a variety of roofing systems.



Flashing pipes and stands are easy and seamless.



Penetrations on MB roof systems can be flashed with AlphaGuard as well.



Penetrations that previously needed pitch pockets are flashed with AlphaGuard. This eliminates possible points of water infiltration.

Internal Roof Drains:

Prior to applying AlphaGuard to a roof drain detail, inspect the drain bowl for cracks and holes. Grind the bowl to remove any residual roofing products or asphalt residue. The drain should have a clean, rust free surface.

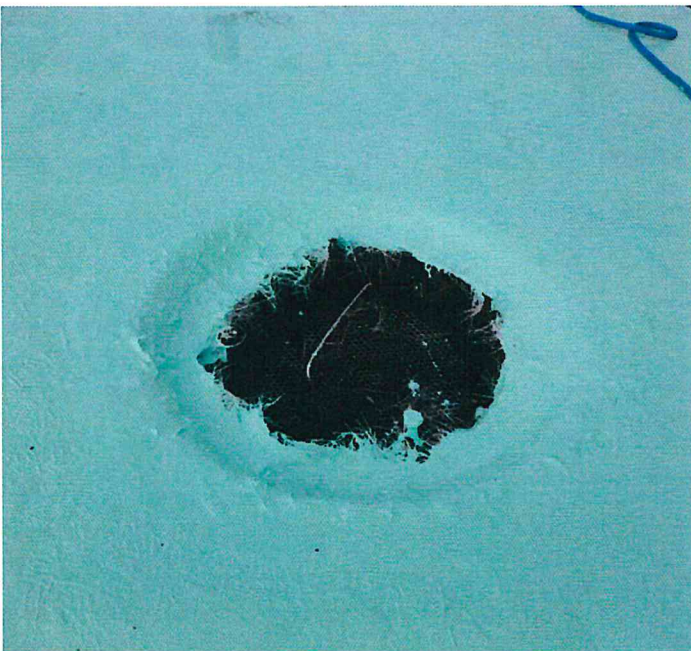
For insulated roof systems, a base sheet of BURmastic Composite ply adhered in BURmastic SF should extend onto the drain bowl to the inside edge of the bowl. The transition from the insulation board to the drain bowl should be within 1/8" vertically and 1/8" horizontally. A tight fit is necessary at the areas.

For concrete decks, make sure that the gap between the deck and the drain bowl is 1/8" or less. For gaps greater than 1/8", a urethane sealant should be used to fill the void. Once the drain is prepared properly, the field base coat and reinforcement should be extended into the drain past where the ring meets the bowl and down into the bowl, followed by the top coat. Reinstall the drain bowl and basket once the material is completely cured.

For restoration projects, make all necessary repairs to the existing drain detail. Ensure that the existing roofing material is adhered tightly to the drain bowl and abutting insulation. Once the drain is prepared properly, the field base coat and reinforcement should be extended into the drain past where the ring meets the bowl, followed by the top coat. Reinstall the drain bowl and basket once the material is completely cured.



For concrete and insulated systems, extend AlphaGuard into the drain bowl. Ensure that the drain bowl is prepared per requirements.



When flashing a drain, AlphaGuard will conform to the drain bowl, eliminating areas where water can penetrate.

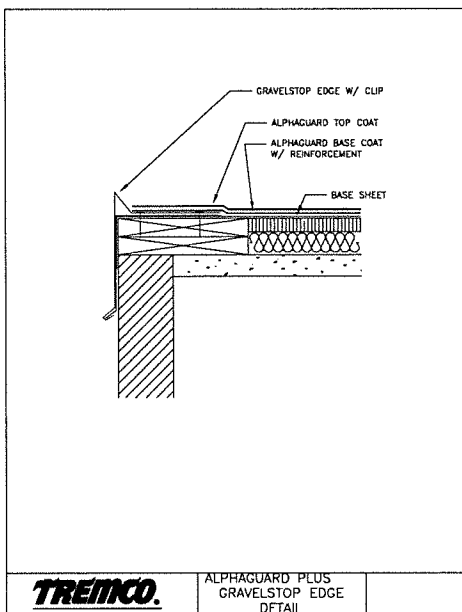


Completed drain detail.

Gutters & Metal Edge Details:

For pre-manufactured metal edge systems, such as TremLock EES, TremLock Fascia and TremLock Coping, follow the requirements of the detail drawings below.

For shop fabricated details, the metal edge or gutter should be installed after the base layer of AlphaGuard is applied. The metal edge should then be flashed in with a base coat of AlphaGuard with reinforcement embedded followed by a top coat of AlphaGuard. The AlphaGuard should extend the full length of the flange along with the reinforcement.



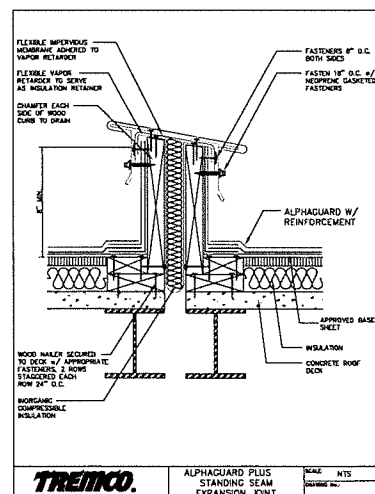
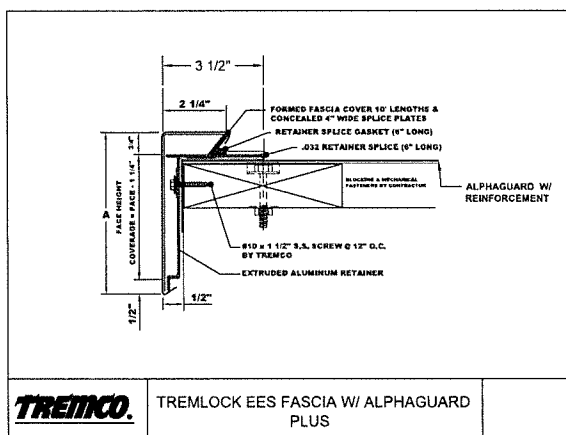
Expansion Joints:

Expansion joints would be flashed in the same manner as a wood curb. Once substrates are appropriately cleaned and prepared, apply AlphaGuard base coat to the substrate, at the required mil thickness. The base coat should only be applied to the area that you intend to embed the reinforcement into at any given time. Using a roller or brush, fully saturate the reinforcement, working from the center outwards.

The AlphaGuard material should extend 8" above the roof substrate, per NRCA recommendations. The toe of the flashing should extend 4" onto the roof substrate, allowing for an adequate surface to lap the AlphaGuard field base coat to lap.

When encountering a corner, the reinforcement should wrap by 3-4" and be fully embedded into the AlphaGuard base coat. Using a brush, work the reinforcement into the corner. It may be necessary to make relief cuts to form tightly.

Inspect the expansion joint and corners for any pinholes or unsaturated areas. If any areas exist, reapply a small amount of AlphaGuard base coat until areas are fully saturated. Once the AlphaGuard flashings are installed, a stainless steel or copper cap would be installed per Tremco specifications.



ALPHAGUARD APPLICATION DIRECT TO CONCRETE

Base coat and fiberglass reinforcement installation:

- Install base coat directly onto primed concrete surface and spread coating evenly according to Tremco's written instructions.
- Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
- Install fiberglass reinforcement immediately into wet base coat. Roll surface of fiberglass to fully embed into wet base coat. Roll until fully saturated.
- Lap adjacent rolls of glass mat no less than 3". End laps shall be no less than 6".
- Lap onto flashing no less than 3".
- Roll the surface of the fiberglass to completely embed into the wet base coat.
- Allow base coat to cure a before installing top coat.
- Fiberglass reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.

Top coat installation for field of roof and flashings:

- Priming of the base coat may be required if top coat is not applied within 72 hours of the base coat application. The base coat shall be lightly primed with manufacturer's recommended primer.
- Install top coat on flashings first. Extend coating up vertical surfaces a minimum of 8 " and out onto horizontal surfaces.
- Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
- Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.

- Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

WALKWAY INSTALLATION

Install walkways following application of top coat. Locate as indicated, or as directed by Owner.

- If walkway application is not applied within 72 hours of the top coat application the top coat shall be primed with manufacturer's recommended primer.
- Apply additional application of top coat to taped walkway area according to manufacturer's written instructions.
- Broadcast approximately 20-30 lbs. per 100 sq. ft. of 20-40 mesh silica sand or quartz in the wet top coat material.
- Immediately back roll sand and top coat, creating an even dispersal of sand. Remove tape outlining walkway immediately.

ALPHAGUARD PLUS APPLICATION INSULATED SYSTEMS

BURmastic Roof System Installation:

- Install roof insulation.
- Plan placement of SF BURmastic Roofing System to ensure that water flows over or along, but not against exposed edges.
- Starting at the low point of the roof, embed approved ply sheets in a uniform, continuous application of BURmastic Adhesive SF.
- Ply shall never touch ply.
- Apply BURmastic Adhesive SF at a rate of 2 Gal/100 sf.

Base coat and fiberglass reinforcement installation:

- Install base coat directly onto approved ply sheet and spread coating evenly according to Tremco's written instructions.
- Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
- Install fiberglass reinforcement immediately into wet base coat. Roll surface of fiberglass to fully embed into wet base coat. Roll until fully saturated.
- Lap adjacent rolls of glass mat no less than 3". End laps shall be no less than 6".
- Lap onto flashing no less than 3".
- Roll the surface of the fiberglass to completely embed into the wet base coat.
- Allow base coat to cure before installing top coat.
- Fiberglass reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.

Top coat installation for field of roof and flashings:

- Priming of the base coat is required if top coat is not applied within 72 hours of the base coat application. The base coat shall be lightly primed with manufacturer's recommended primer.
- Install top coat on flashings first. Extend coating up vertical surfaces a minimum of 8 " and out onto horizontal surfaces.
- Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
- Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.
- Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

WALKWAY INSTALLATION

Install walkways following application of top coat. Locate as indicated, or as directed by Owner.

- If walkway application is not applied within 72 hours of the top coat application the top coat shall be primed with manufacturer's recommended primer.
- Apply additional application of top coat to taped walkway area according to manufacturer's written instructions.
- Broadcast approximately 20-30 lbs. per 100 sq. ft. of 20-40 mesh silica sand or quartz in the wet top coat material.
- Immediately back roll sand and top coat, creating an even dispersal of sand. Remove tape outlining walkway immediately.

ALPHAGUARD APPLICATION RESTORATION

Base coat and fiberglass reinforcement installation:

- Prime with required primer (see chart 1) and install base coat onto approved substrate, spread coating evenly according to Tremco's written instructions.
- Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
- Install fiberglass reinforcement immediately into wet base coat. Roll surface of fiberglass to fully embed into wet base coat. Roll until fully saturated.
- Lap adjacent rolls of glass mat no less than 3". End laps shall be no less than 6".
- Lap onto flashing no less than 3".
- Roll the surface of the fiberglass to completely embed into the wet base coat.
- Allow base coat to cure a before installing top coat.
- Fiberglass reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.

Top coat installation for field of roof and flashings:

- Priming of the base coat is required if top coat is not applied within 72 hours of the base coat application. The base coat shall be lightly primed with manufacturer's recommended primer.
- Install top coat on flashings first. Extend coating up vertical surfaces a minimum of 8 " and out onto horizontal surfaces.
- Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
- Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.
- Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

WALKWAY INSTALLATION

Install walkways following application of top coat. Locate as indicated, or as directed by Owner.

- If walkway application is not applied within 72 hours of the top coat application the top coat shall be primed with manufacturer's recommended primer.
- Apply additional application of top coat to taped walkway area according to manufacturer's written instructions.
- Broadcast approximately 20-30 lbs. per 100 sq. ft. of 20-40 mesh silica sand or quartz in the wet top coat material.
- Immediately back roll sand and top coat, creating an even dispersal of sand. Remove tape outlining walkway immediately.

INSPECTION & REPAIR

Final Inspection

Arrange for roofing system manufacturer's technical personnel to inspect the fluid-applied membrane on completion. Prior to manufacturer's final inspection the contractor shall examine the completed work for the following deficiencies:

Inspect completed Top Coat installation for pin holes, voids, exposed base coat, exposed reinforcement, rough fiberglass, blisters, un-adhered material or any other deficiencies that could compromise waterproofing integrity and long term performance.

Correct deficiencies as follows:

Pin holes/voids/exposed base coat or reinforcement:

1. Install Geogard Primer over Top Coat at a coverage rate of 1 gal/500 sf. Allow to dry.
2. Install new Top Coat at a coverage rate of 2 gal/100 sf.

Rough fiberglass reinforcement:

1. Sand or grind fiberglass reinforcement down flush to surrounding Base Coat surface.
2. Install Geogard Primer over area at a coverage rate of 1 gal/600 sf. Allow to dry.
3. Install new Top Coat at a coverage rate of 2 gal/100 sf.

Blisters/un-adhered Top Coat:

1. Cut out and remove loose coating.
2. Remove moisture if present.
3. Install Geogard Primer over area at a coverage rate of 1 gal/500 sf. Allow to dry.
4. Install new Top Coat at a coverage rate of 2 gal/100 sf.

Repair & Maintenance

The fluid-applied membrane does not require additional surfacing or coatings for the duration of the warranty service life. However, the following preventive maintenance and general rooftop housekeeping procedures should be performed on a regular basis:

Inspect the fluid-applied membrane for physical damage such as punctures, splits, or tears.

Inspect flashing components and details for openings that could allow moisture entry.

Inspect rooftop for debris on the membrane and around drains. Remove debris and ensure all drain strainers are clear.

Dirt and debris that has accumulated on the roof surface can be removed to preserve the surfaces solar reflectivity. Remove dirt and debris with a solution of soap and water.

Dispose of rinse water according to local environmental regulations.

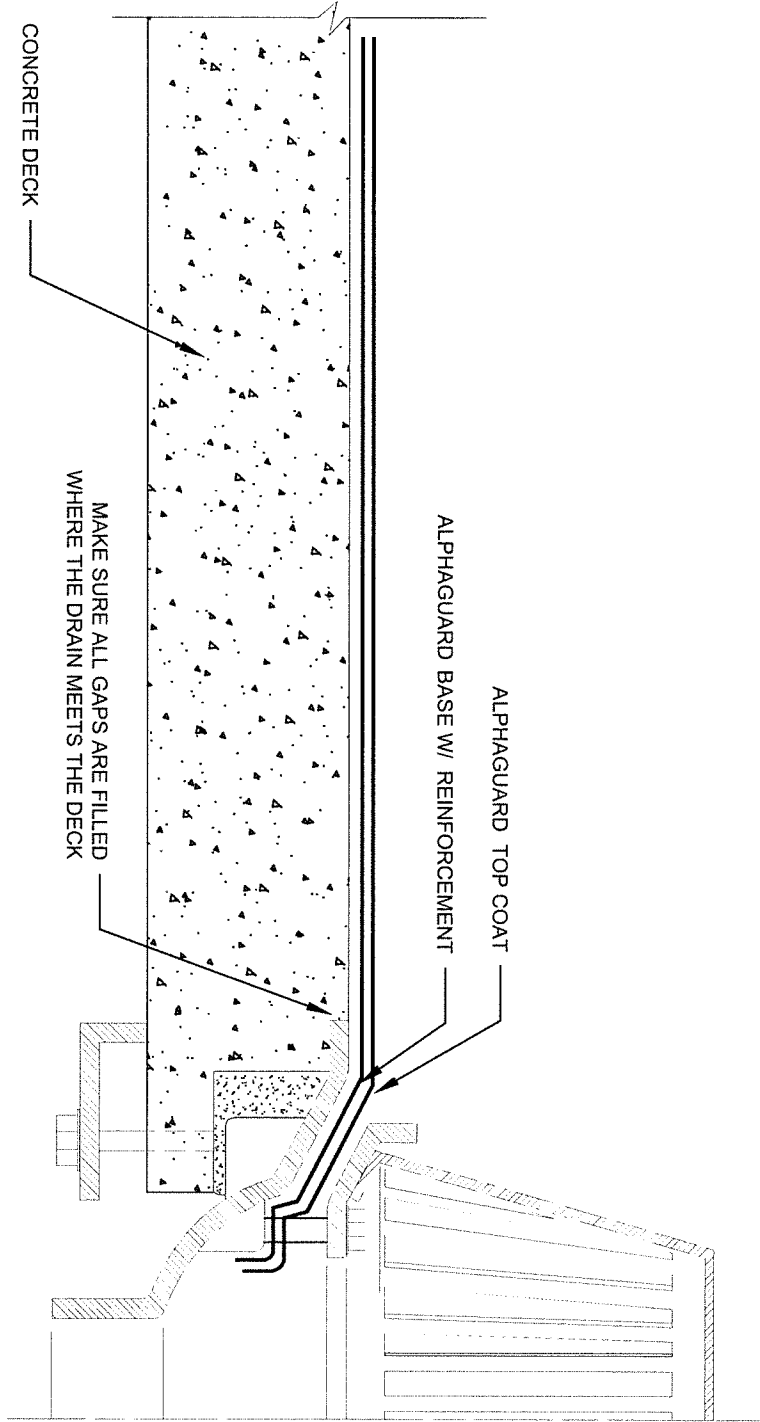
Repair & Maintenance

If inspection reveals that repairs are needed in the membrane or flashings follow these general guidelines:

Punctures/splits/tears:

1. Clean surface of membrane with soap and water. Let dry.
2. Install Geogard Primer over defective area at a coverage rate of 1 gal/500 sf.
3. Install Base Coat over defect at a coverage rate of 3 gal/100 sf and install reinforcement into wet material.
4. Ensure that reinforcement is completely saturated and does not contain pin holes or voids.
5. Once Base Coat is dry install Top Coat at a coverage rate of 2 gal/100 sf.

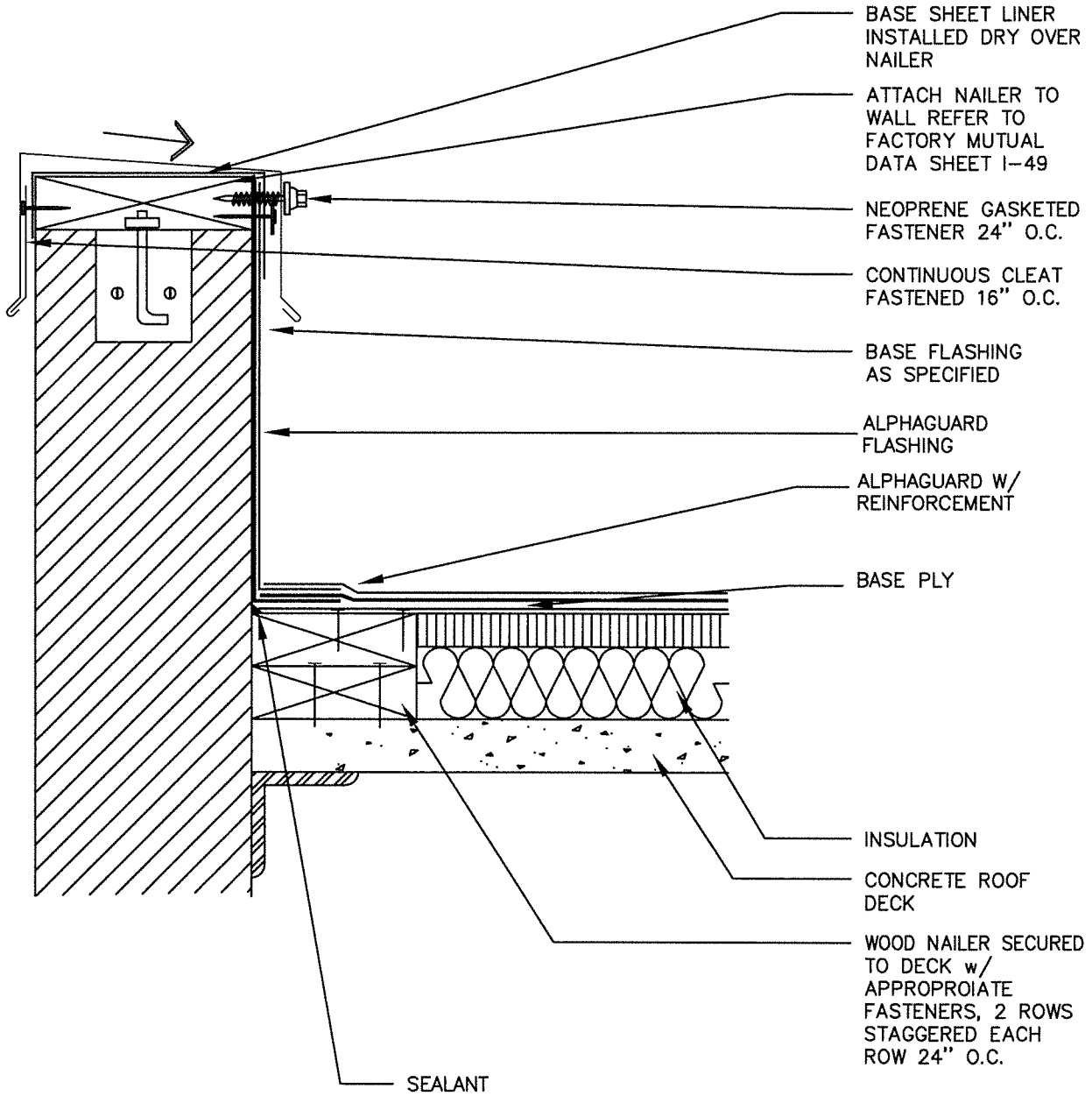
Detail Drawings



TREMCO®

ALPHAGUARD MT
DRAIN DETAIL - CONCRETE

ALPHAGUARD

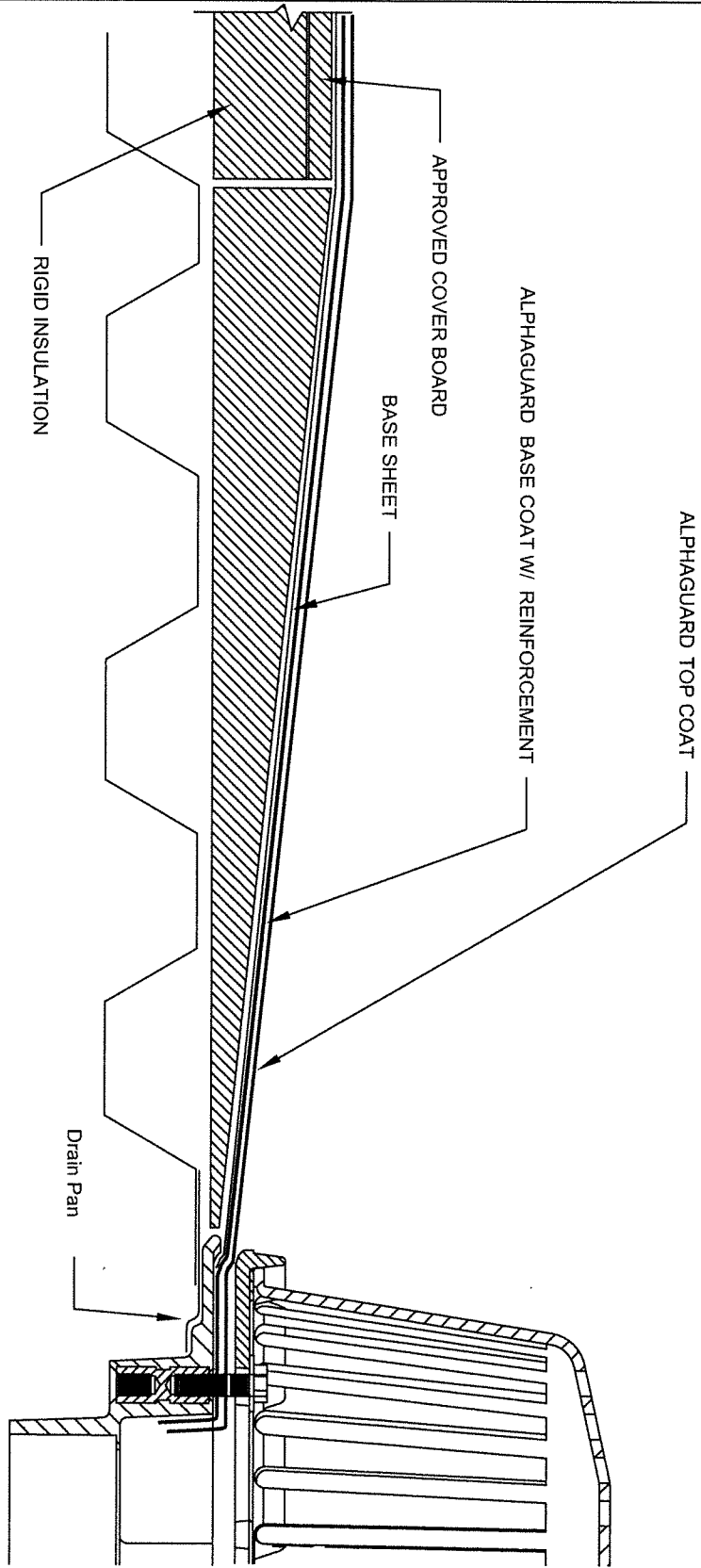


TREMCO®

SHEET TITLE:
 ALPHAGUARD PLUS
 COPING CAP

SCALE: NTS

DRAWING No.:



	<p>ALPHAGUARD PLUS DRAIN DETAIL - RIGID INSULATION</p>	<p>ALPHAGUARD</p>
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FLEXIBLE IMPERVIOUS
MEMBRANE ADHERED TO
VAPOR RETARDER

FLEXIBLE VAPOR
RETARDER TO SERVE
AS INSULATION RETAINER

CHAMFER EACH
SIDE OF WOOD
CURB TO DRAIN

FASTENERS 8" O.C.
BOTH SIDES

FASTEN 18" O.C. w/
NEOPRENE GASKETED
FASTENERS

8" MIN.

ALPHAGUARD W/
REINFORCEMENT

WOOD NAILER SECURED
TO DECK w/ APPROPRIATE
FASTENERS, 2 ROWS
STAGGERED EACH
ROW 24" O.C.

INORGANIC
COMPRESSIBLE
INSULATION

APPROVED BASE
SHEET

INSULATION

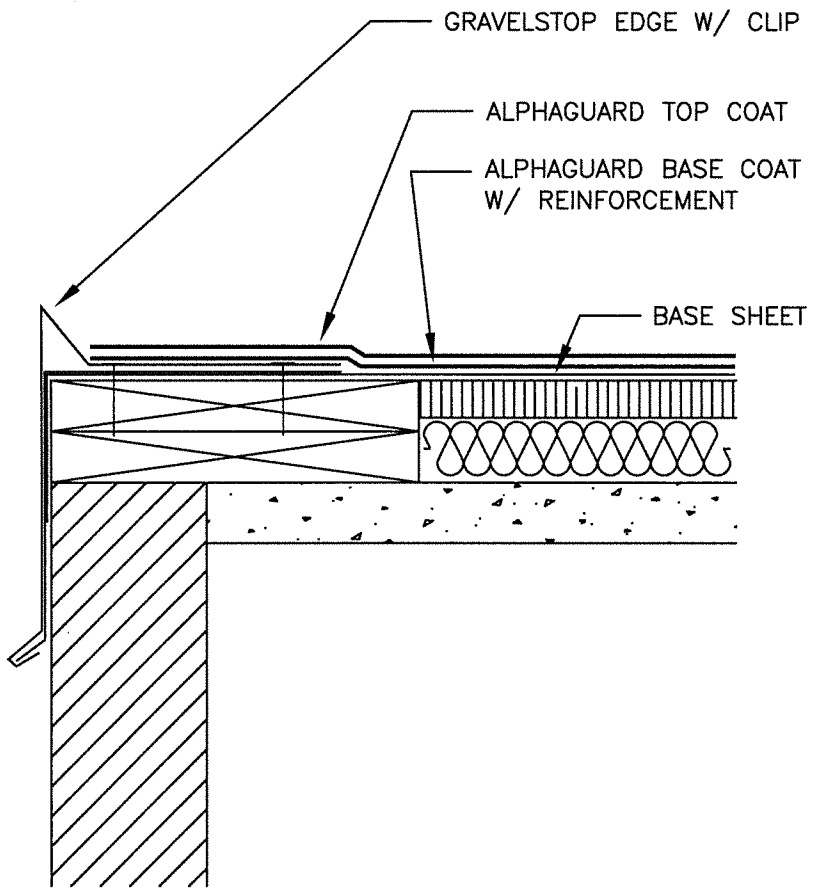
CONCRETE ROOF
DECK



ALPHAGUARD PLUS
STANDING SEAM
EXPANSION JOINT

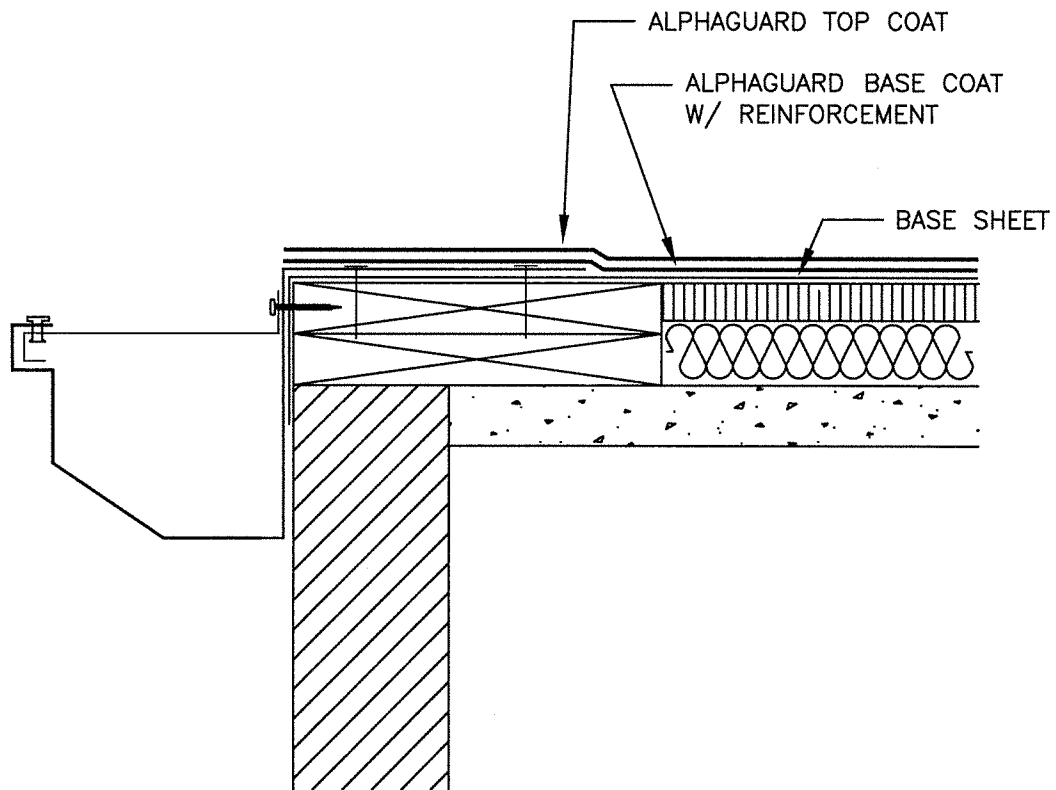
SCALE: NTS

DRAWING No.:



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ALPHAGUARD PLUS
GRAVELSTOP EDGE
DETAIL

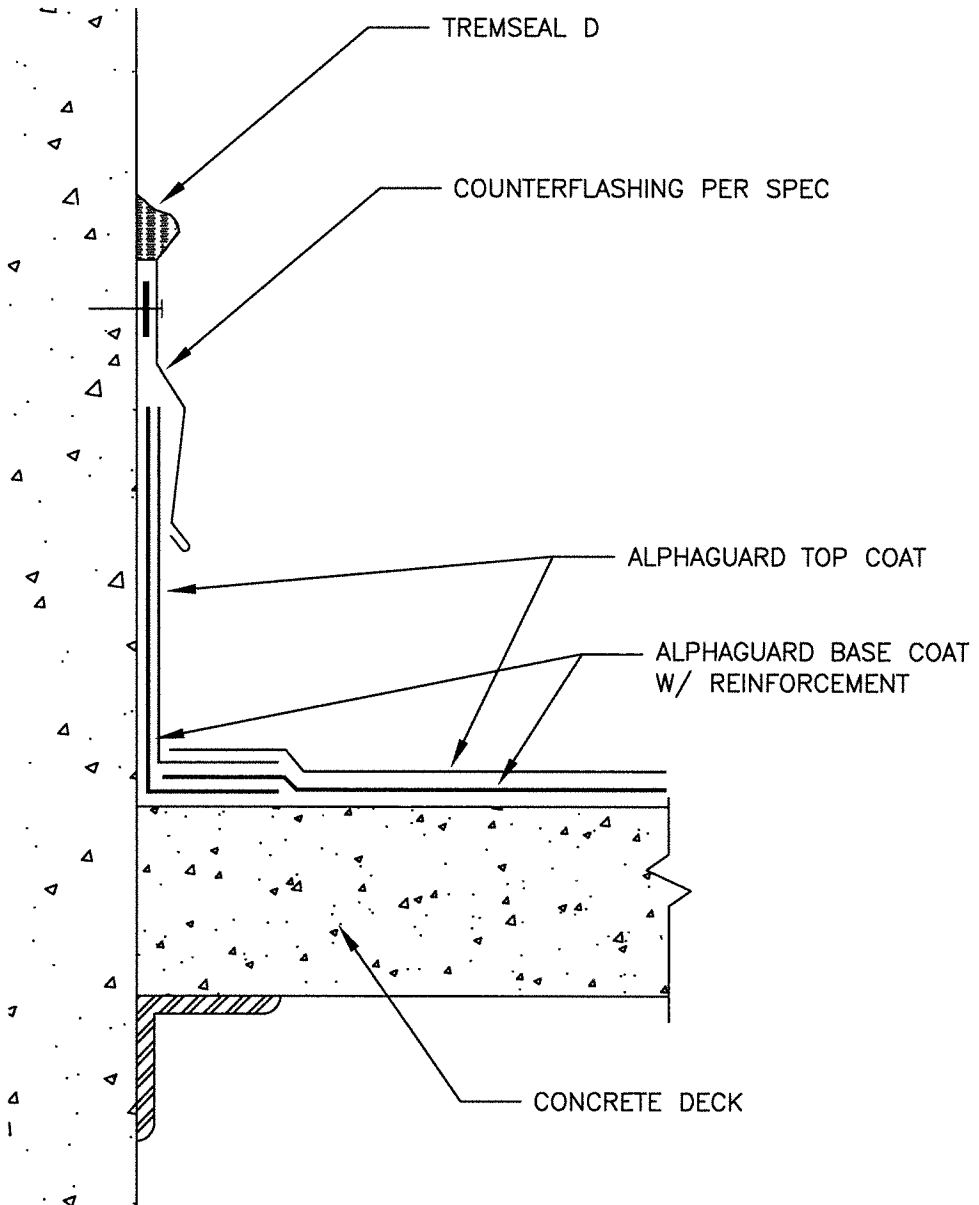


NOTES :

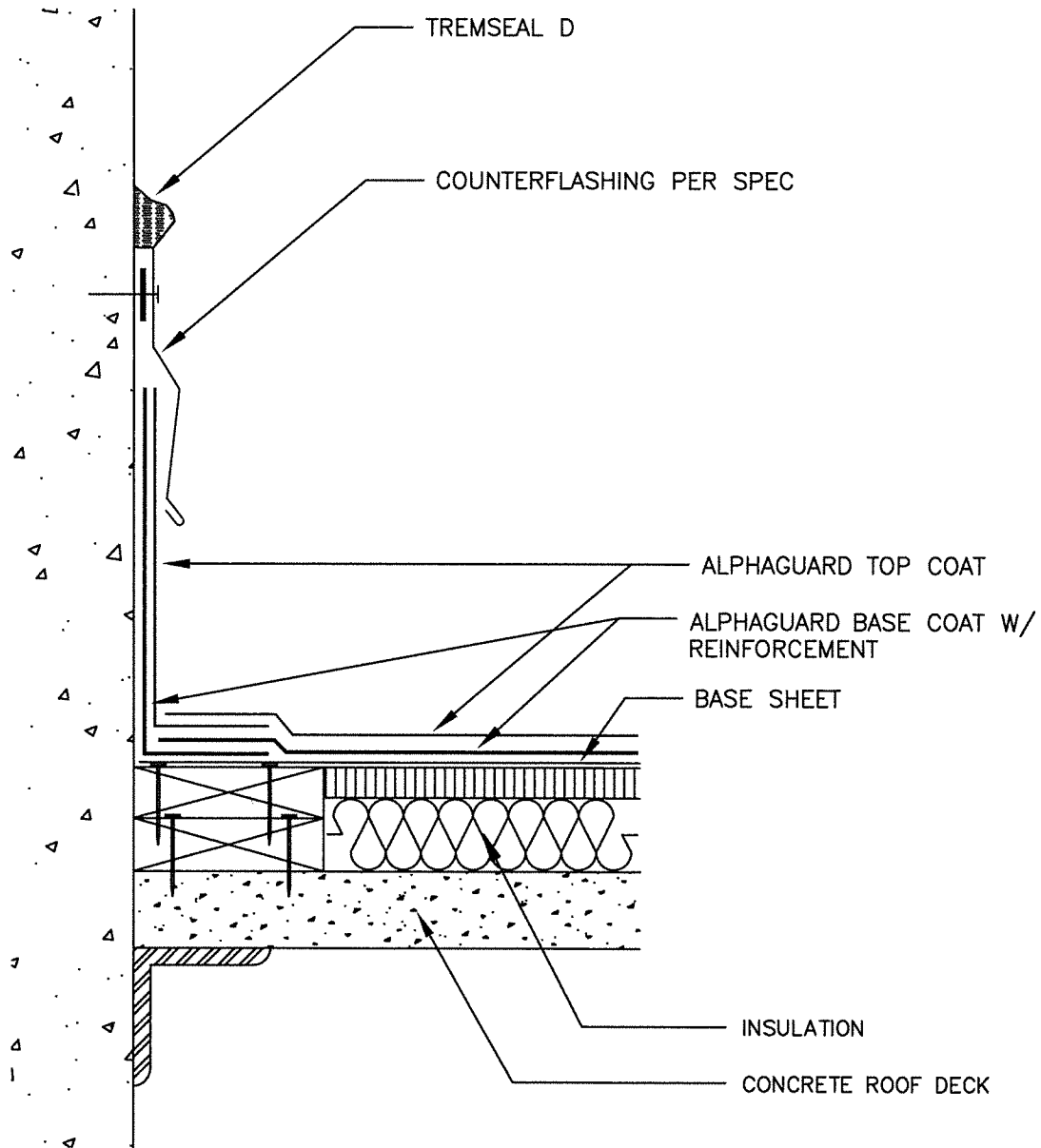
1. SLOPE GUTTER TO DOWNSPOUTS 1/4" PER 1' MINIMUM.

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ALPHAGUARD PLUS
GUTTER EDGE DETAIL

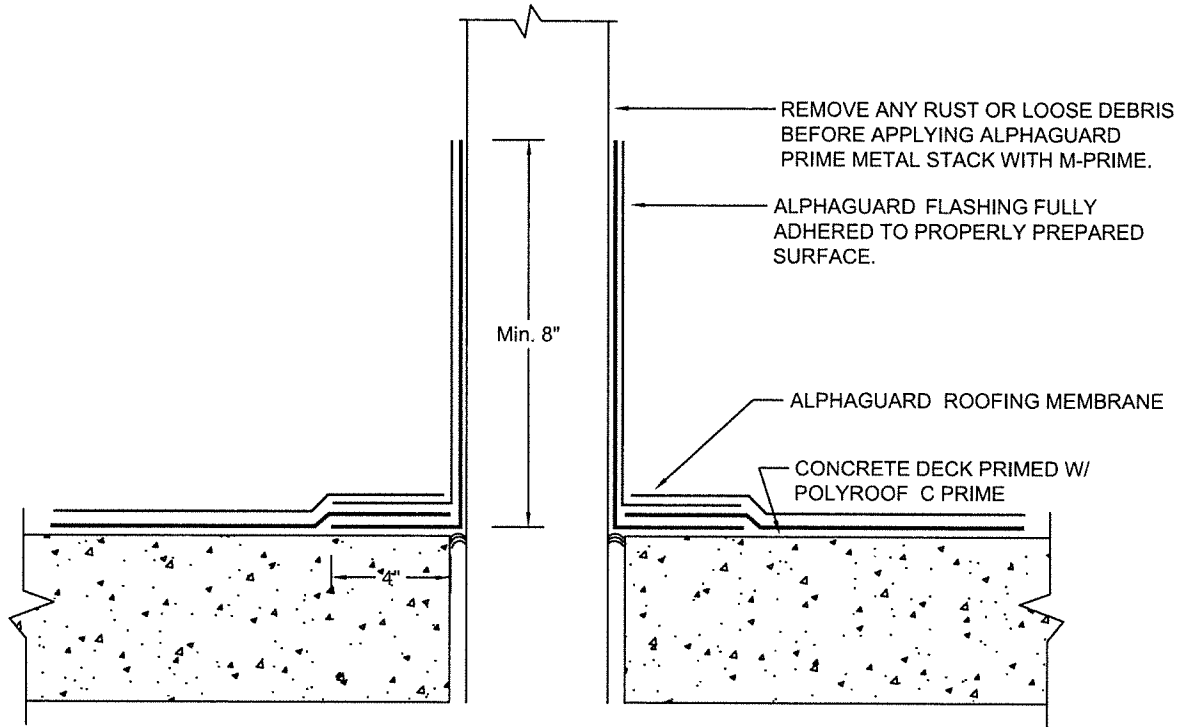


ALPHAGUARD
 PARAPET WALL DETAIL



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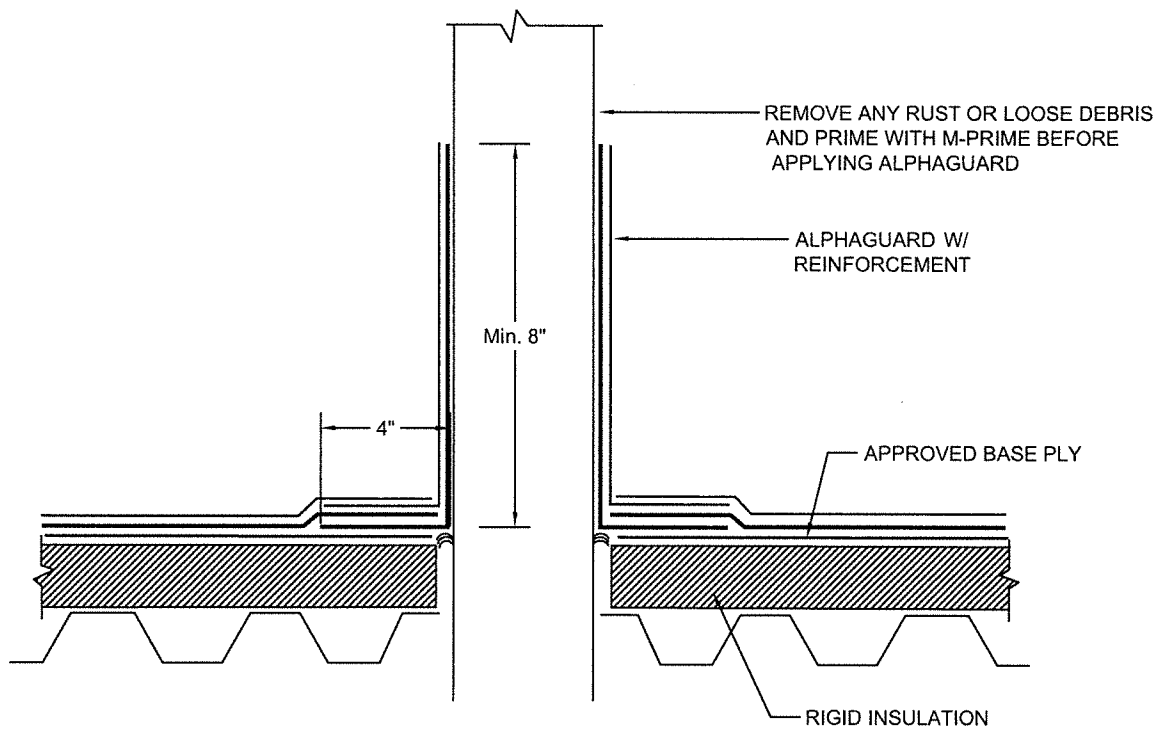
ALPHAGUARD PLUS
PARAPET WALL DETAIL



ALPHAGUARD

ROOF PENETRATION - FULLY ADHERED TO CONCRETE DECK

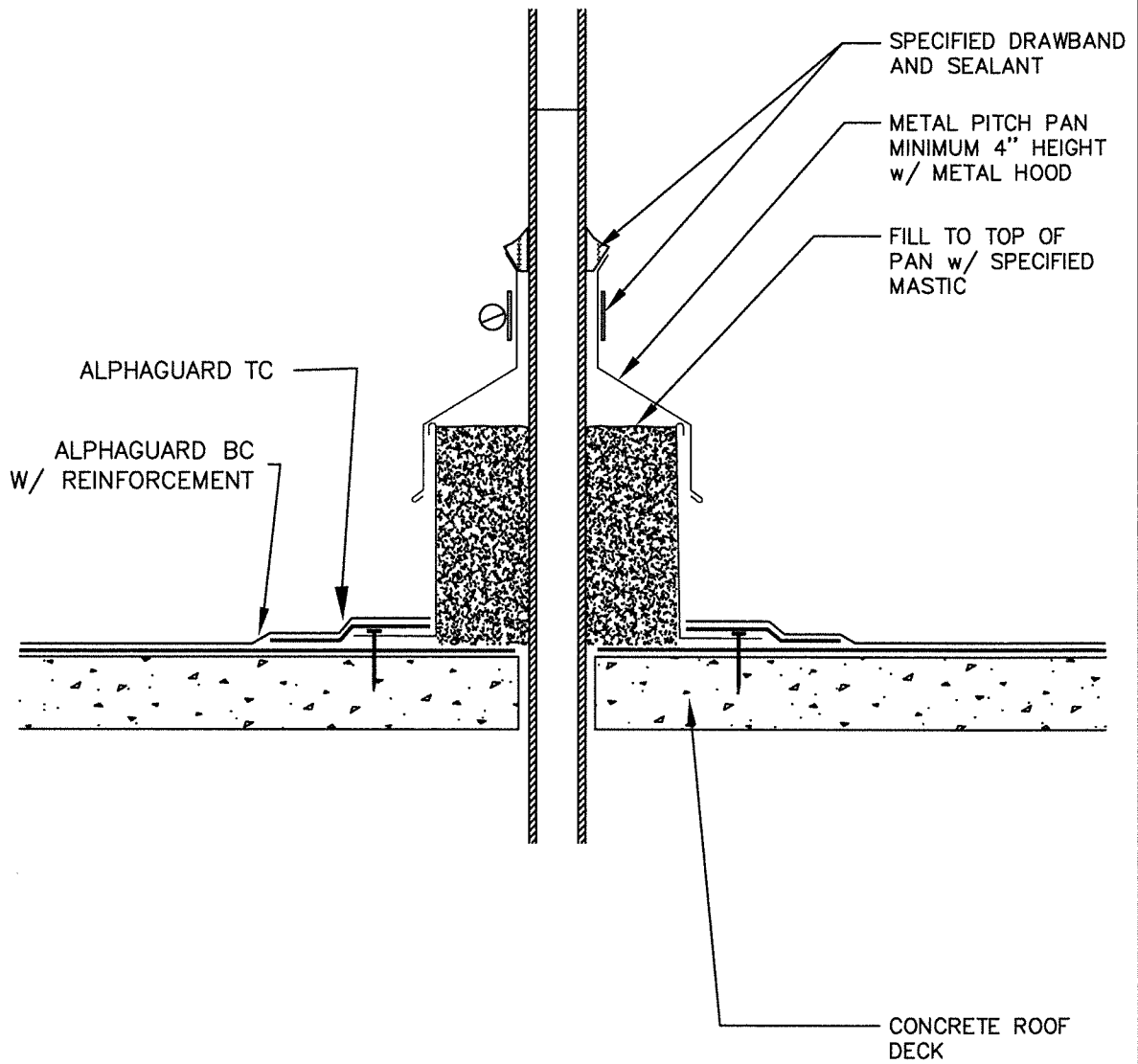
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ALPHAGUARD

ROOF PENETRATION - METAL
DECK W/ RIGID INSULATION

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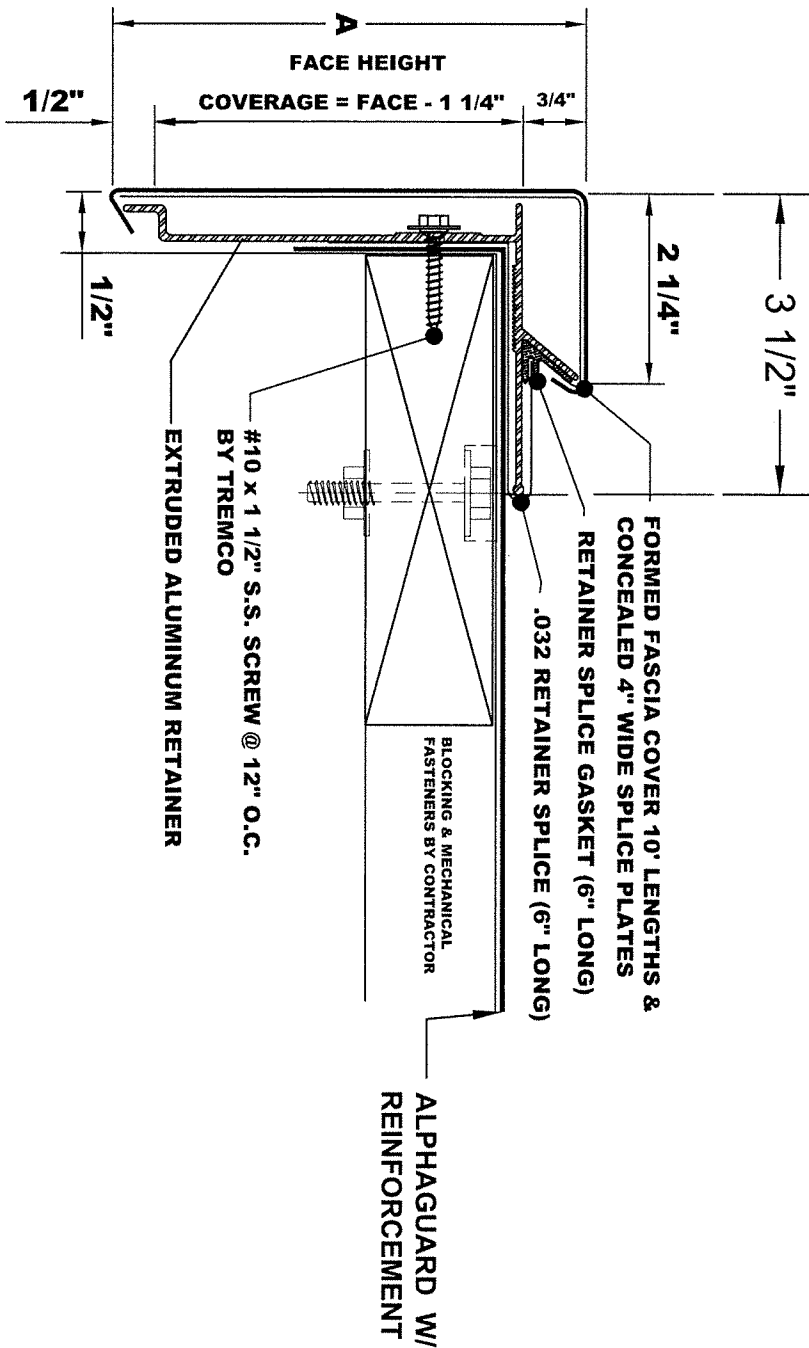
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SHEET TITLE:

ALPHAGUARD PITCH POCKET

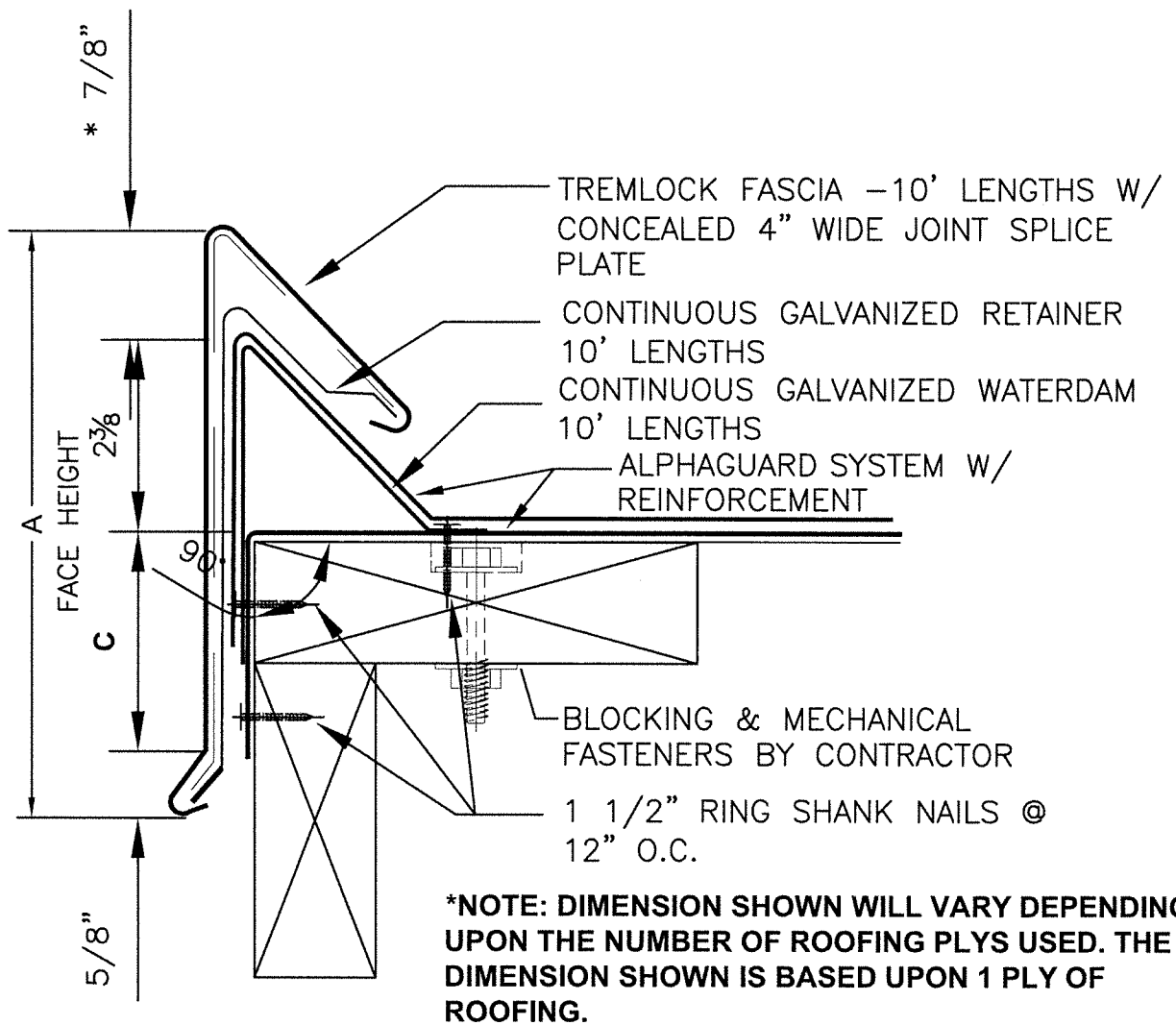
SCALE: NTS

DRAWING No.:



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TREMLOCK EES FASCIA W/ ALPHAGUARD PLUS

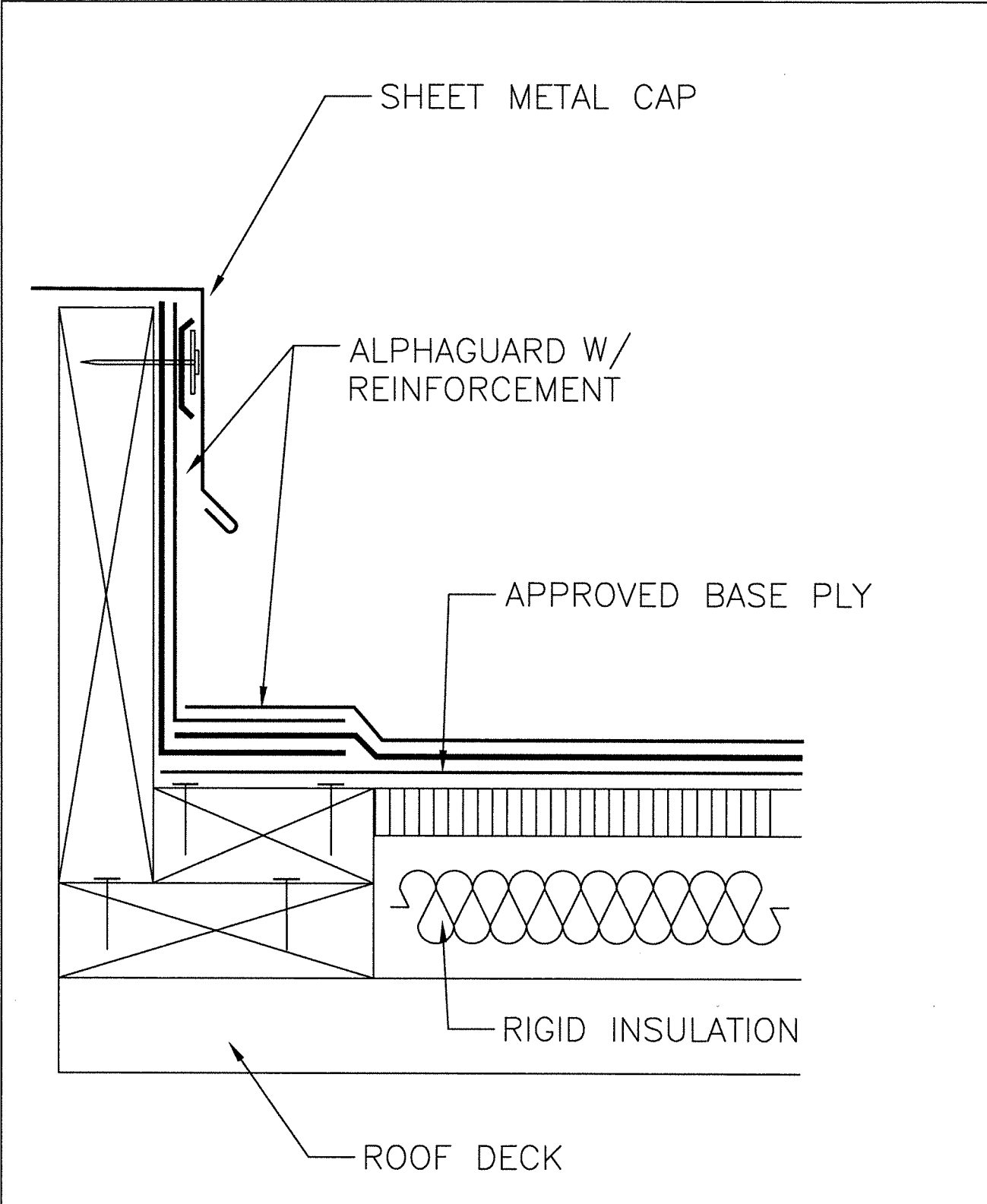


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SHEET TITLE:
TREMLOCK FASCIA W/ ALPHAGUARD
PLUS

SCALE: NTS

DRAWING No.:



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SHEET TITLE:
ALPHAGUARD PLUS
WOOD CURB

SCALE: NTS
DRAWING No.:

TREMCO

ROOFING & BUILDING MAINTENANCE

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Mill Valley Middle School Roofing Project # 2019/20-MVMS-03

