**Tremco, Inc. Commercial Sealants and Waterproofing**

**Section 07 14 13 HOT FLUID-APPLIED WATERPROOFING
Horizontal Deck Applications**

Specifier: This guide specification section specifies Tremco TREMproof® 6100 hot fluid-applied rubberized asphalt waterproofing. TREMproof 6100 is ideally suited for new and remedial waterproofing applications. It is applicable to horizontal concrete surfaces and is formulated for application to the top level of structures, including plaza decks, roof decks, and between-slab exposed top-level parking areas. It can be applied as part of a vegetated roof assembly.

TREMproof 6100 is applied over properly cured concrete surfaces in conjunction with the recommended primer. The system includes reinforcing fabric, transition flashing, protection course and drainage mat. TREMproof 6100 meets SCAQMD and CARB requirements for low VOC products.

Separate guide specification sections are available from Tremco for vertical and vegetative roof applications. This section is easily edited using several common commercial specification software tools.

We recommend you consult with your Tremco technical representative, who can be contacted through: Tremco, Inc., Commercial Sealants and Waterproofing Division, Beachwood OH; (866) 321‑6357; email: techresources@tremcoinc.com;  [www.tremcosealants.com](http://www.tremcosealants.com).

Tremco sealant and waterproofing products appear in the following CSI MasterFormat specifications sections:

• Section 07 01 91 Joint Sealant Rehabilitation and Replacement
• Section 07 14 13.01 Hot Fluid-Applied Waterproofing, Deck (TREMproof 6100)
• Section 07 14 16.02 Cold Fluid-Applied Waterproofing, Vertical (TREMproof 250GC)
• Section 07 14 16.04 Cold Fluid-Applied Waterproofing, Vegetative Roof (TREMproof 250GC)
• Section 07 17 00 Bentonite Waterproofing (Paraseal GM/LG 60 mil)
• Section 07 18 00.01 Traffic Coatings, Vehicular
• Section 07 18 00.02 Traffic Coatings, Pedestrian
• Section 07 18 00.03 Traffic Coatings, Vehicular and Pedestrian
• Section 07 27 13 Modified Bituminous Sheet Waterproofing, Vapor-Retarding (ExoAir 110)
• Section 07 27 23 Board Product Waterproofing, Vapor Permeable (SECUREROCK ExoAir 430)
• Section 07 27 26.01 Fluid-Applied Membrane Waterproofing, Vapor-Retarding (ExoAir 120)
• Section 07 27 26.02 Fluid-Applied Membrane Waterproofing, Vapor Permeable (ExoAir 220)
• Section 07 27 26.03 Fluid-Applied Membrane Waterproofing, Vapor Permeable (ExoAir 230)
• Section 07 84 13 Penetration Firestopping
• Section 07 84 46 Fire-Resistive Joint Systems
• Section 07 92 00 Joint Sealants
• Section 08 85 00 Glazing Sealants
• Section 32 13 73 Concrete Paving Joint Sealants

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SECTION 07 14 13 – HOT FLUID-APPLIED WATERPROOFING

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes:

Hot fluid-applied rubberized asphalt waterproofing, horizontal deck applications.

Polyurethane methacrylate cold-applied waterproofing membrane for flashing applications.

[Protection course] [Drainage panels] [Insulation] [Insulation drainage panels].

* + - 1. RELATED REQUIREMENTS

Specifier: If retaining this optional Related Requirements Article, edit to include only those sections included in project manual.

Section 03 31 00 "Cast-in-Place Concrete" for moisture curing of concrete waterproofing substrate.

Section 04 20 00 "Unit Masonry" for compatibility with flashing components.

Section 07 21 00 "Thermal Insulation" for foundation and perimeter insulation.

Division 07 air barrier section for wall waterproofing and interface coordination.

Section 07 72 73 "Membrane Leak Detection System" for requirements for EFVM leak detection system installation and membrane leak testing.

Section 07 76 13 "Roof Pavers" for requirements for roof ballast and roof decking pavers and support pedestal systems.

Section 07 92 00 "Joint Sealants" for joint sealants and accessories and joint preparation.

Section 07 90 00/07 95 00 "Expansion Control/Protection" for expansion joint systems.

Section 33 46 00 "Subdrainage" for drainage pipe and conduits, drainage panels, and filter fabrics.

* + - 1. REFERENCES

Specifier: If retaining this optional References Article, edit to include only those references cited in the edited section.

* + - * 1. References, General: Versions of the following standards current as of the date of issue of the project apply to the Work of this Section.
				2. ASTM International (ASTM): [www.astm.org](http://www.astm.org):

ASTM C920 - Standard Specification for Elastomeric Joint Sealants

ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating

ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

ASTM D4716 - Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head

ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials

CAN/CGSB-37.50-M89: Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing

* + - * 1. U. S. Environmental Protection Agency (EPA): [www.epa.gov](http://www.epa.gov):

40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings

* + - 1. ADMINISTRATIVE REQUIREMENTS
				1. Preinstallation Conference: Conduct conference at Project Site.

Review requirements for waterproofing products and installation, including surface preparation, substrate conditions, expansion joints as required, project and manufacturer's details, installation procedures, mockups, testing and inspection requirements, protection and repairs, and coordination and sequencing of waterproofing work with work of other Sections.

* + - 1. ACTION SUBMITTALS
				1. Product Data: For each type of waterproofing product (and expansion joint accessory if applicable) specified, including:

Technical data indicating compliance with requirements.

Substrate preparation instructions and recommendations.

* + - * 1. Shop Drawings: Show locations for waterproofing system components. Show details for each type of substrate, joints, corners, and edge conditions, including flashings, counterflashings, penetrations, transitions, and terminations.
			1. INFORMATIONAL SUBMITTALS
				1. Qualification Data: For Installer, manufacturer, and waterproofing Inspector].

Certification of manufacturer's approval of Installer.

* + - * 1. Product Test Reports: Test data for waterproofing products and waterproofing system, by qualified testing agency, indicating proposed waterproofing meets performance requirements, when requested by Architect.
				2. Warranty: Sample of unexecuted manufacturer and installer special warranties.
				3. Field quality control reports.
			1. QUALITY ASSURANCE
				1. Installer Qualifications: A manufacturer-approved firm with minimum [three] years' experience in installation of specified products in successful use on similar projects, employing workers trained by manufacturer, including a full-time on-site supervisor with a minimum of [three] years' experience installing similar work, and able to communicate verbally with Contractor[, Architect,] and employees.
				2. Manufacturer Qualifications: A qualified manufacturer [listed in this Section] with minimum five years' experience in manufacture of waterproofing as one of its principal products.

Manufacturer's product submitted has been in satisfactory operation on five similar installations for at least five years.

Specifier: Retain "Approval of Manufacturers and Comparable Products" Paragraph below to provide control over qualifying of substituted manufacturers.

Approval of Manufacturers and Comparable Products: [Submit] [Prime Bidder must submit] the following in accordance with project substitution requirements, within time allowed for substitution review:

Completed and signed Substitution Request form.

Product data, including certified independent test data indicating compliance with requirements.

Sample shop drawings from similar project.

Project references: Minimum of five installations of similar system not less than five years old, with Owner and Architect contact information.

Name and resume of proposed qualified Inspector.

Sample warranty.

Specifier: Retain "Waterproofing Inspector Qualifications" Paragraph if Contractor is required to provide manufacturer inspections under Part 3 Field Quality Control article.

* + - * 1. Waterproofing Inspector Qualifications: An independent party certified as a waterproofing inspector acceptable to Architect, retained by the Contractor and experienced in the installation and maintenance of the specified waterproofing system, qualified to perform 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.

Specifier: Retain "Testing Agency Qualifications" Paragraph if Contractor is required to provide independent inspections under Part 3 Field Quality Control article.

* + - * 1. Testing Agency Qualifications: Qualified independent agency experienced in the installation of the specified waterproofing system, and qualified to perform observation and inspection specified in Field Quality Control Article to determine Installer’s compliance with the requirements of this Project, acceptable to Architect, retained by the Contractor.
				2. Mockups: Provide waterproofing mockup application within mockups required in other sections, or if not specified, in an area of not less than 150 sq. ft. (14 sq. m) of surface where directed by Architect for each type of substrate condition. Include examples of surface preparation, crack and joint treatment, waterproofing application, and flashing, transition, and termination conditions, to set quality standards for execution.

Include intersections of deck waterproofing with adjacent vertical waterproofing and moisture control systems, including Air Barrier Membrane(s)

If applicable, include no less than 13 ft (3.96m) including a minimum of one splice joint of Willseal® Expansion Joint System.

* + - 1. DELIVERY, STORAGE AND HANDLING
				1. Accept materials on site in manufacturer's unopened original packaging.
				2. Store products in weather protected environment, clear of ground and moisture, within temperature ranges recommended by waterproofing manufacturer.

Specifier: Retain first option in "Construction Waste" Paragraph below for LEED projects; retain second option for other projects.

* + - * 1. Construction Waste: Store and dispose of packaging materials and construction waste in accordance with requirements of Division 01 Section ["Construction Waste Management"] ["Temporary Facilities and Controls."]
			1. ENVIRONMENTAL REQUIREMENTS
				1. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer.

Protect substrates from environmental conditions that affect waterproofing performance.

Do not apply waterproofing to a damp or wet substrate or during snow, rain, fog, or mist.

* + - 1. SCHEDULING
				1. Coordinate installation of waterproofing with completion of roofing and other work requiring interface with waterproofing.
				2. Schedule work so waterproofing applications may be inspected prior to concealment.
				3. Ensure waterproofing materials are cured before covering with other materials.
			2. WARRANTY
				1. Applicator:  Company specializing in performing the work of this section qualified by system manufacturer for warranted membrane installation. Applicator shall submit the following certification for review:

Applicator shall submit documentation from the membrane manufacturer to verify contractor’s status as a qualified approved applicator for warranted installations.

Specifier: Consult Tremco representative for available special project warranty terms and conditions.

* + - * 1. Special Manufacturer's Warranty: Manufacturer's standard form in which waterproofing manufacturer agrees to furnish waterproofing material to repair or replace those materials installed according to manufacturer's written instructions that exhibit material defects or otherwise fail to perform as specified under normal use within warranty period specified.

Access for Repair: Owner shall provide unimpeded access to the Project and the waterproofing system for purposes of testing, leak investigation, and repair, and shall reinstall removed cladding and overburden materials upon completion of repair.

Cost Limitation: Manufacturer's obligation for repair or replacement shall be limited to the original installed cost of the work.

Warranty Period: [\_\_] years date of Substantial Completion.

* + - * 1. Special warranties specified in this article exclude deterioration or failure of traffic coating materials from the following:

Movement of the structure caused by structural settlement or stresses on the traffic coating exceeding manufacturer's written specifications for elongation.

Mechanical damage caused by outside agents.

1. PRODUCTS
	* + 1. MANUFACTURERS

Specifier: Retain option for substitutions below and edit if required for project.

* + - * 1. Basis-of-Design Products: Provide waterproofing products manufactured by **Tremco, Inc., Commercial Sealants and Waterproofing Division,** Beachwood OH; (866) 321-6357; email: techresources@tremcoinc.com; [www.tremcosealants.com](http://www.tremcosealants.com), [or comparable products of other manufacturer approved by Architect in accordance with Instructions to Bidders and Division 01 General Requirements]. If applicable, provide expansion joint products manufactured by Willseal, Hudson, NH; [www.willseal.com](http://www.willseal.com/) .
				2. Source Limitations: Provide waterproofing system materials and accessory products from single source from single manufacturer.
			1. PERFORMANCE REQUIREMENTS
				1. General: Waterproofing system shall be capable of performing as a continuous watertight installation and as a moisture drainage plane transitioned to adjacent flashings and discharging water to the building exterior. Waterproofing shall accommodate normal substrate movement and seal expansion and control joints, construction material transitions, opening transitions, penetrations, and perimeter conditions without resultant moisture deterioration.

Specifier: Paragraph below may apply to limitations on VOCs of authorities having jurisdiction; verify local requirements.

* + - * 1. VOC Content: 250 g/L maximum per 40 CFR 59, Subpart D (EPA Method 24) and complying with requirements of authorities having jurisdiction.
				2. Compatibility: Provide waterproofing system materials that are compatible with one another and with adjacent materials under conditions of service and application required, as demonstrated by waterproofing manufacturer based on testing and field experience.
			1. WATERPROOFING MEMBRANE
				1. Hot Fluid-Applied Rubberized Asphalt Waterproofing: Single component, 100 percent solids; hot fluid-applied, rubberized asphalt formulated for application of not less than 215 mils (5.46 mm) (wet), applied in two applications in conjunction with an interlayer of reinforcing fabric.

Basis of Design Product: **Tremco, Inc., TREMproof 6100**.

Vapor Permeance, ASTM E96/E96M: Maximum 0.03 perms (1.7 ng/Pa x s x sq. m).

VOC Content: 0 g/L.

Flash Point, ASTM D92: 604 °F (318 °C)

Low Temperature Flexibility, CAN/CGSB 37.50-M89; Section 4.10: Pass

Low Temperature Crack Bridging, CAN/CGSB 37.50-M89; Section 4.11: Pass

Flow, ASTM D5329: 0

Heat Viscosity, CAN/CGSB 37.50-M89: 11 sec

* + - * 1. Polyurethane methyl methacrylate system: Seamless, high-solids-content, cold liquid-applied, elastomeric, flashing system.

Basis of Design Products: Tremco, Inc., **TREMproof PUMA**

Specifier: Retain "Recycled Content" subparagraph if Project requirements include stipulating recycled content quantity.

* + - 1. ACCESSORY MATERIALS
				1. General: Accessory materials as described in manufacturer's written installation instructions, recommended to produce complete waterproofing system meeting performance requirements, and compatible with waterproofing material and adjacent materials.
				2. Substrate Patching Material: Waterproofing manufacturer's standard trowel-grade filler material.
				3. Primer: Tremco approved primer meeting VOC limitations and recommended for substrate by waterproofing manufacturer.
				4. Reinforcing Fabric: Waterproofing manufacturer's standard spun-bonded polyester fabric

Basis of Design Product: **Tremco, Reinforcing Fabric**.

* + - * 1. Elastomeric Sheet: Thermoset neoprene rubber sheet not less than 60 mil (1.52 mm).

Basis of Design Product: **Tremco, Elastomeric Sheeting**.

* + - * 1. Elastomeric Detail Sheet: Blended thermoset elastomeric sheet reinforced with polyester woven scrim.

Basis of Design Product: **Tremco, TRA Elastomeric Sheeting**.

* + - * 1. Composite Elastomeric Sheet: Waterproofing manufacturer's standard consisting of a SEBS rubber faced on two sides with absorbent non-woven felt.

Basis of Design Product: **Tremco, DualFlex**.

* + - * 1. Metal Termination Bars: Waterproofing manufacturer's standard aluminum or stainless steel termination bar, with stainless steel fasteners.
				2. Joint Sealant: ASTM C 920, single-component urethane, approved by waterproofing manufacturer for adhesion and compatibility with waterproofing and accessories.

Basis of Design Product: Tremco, Dymonic 100.

* + - * 1. Expansion Joint Pre-compressed or Closed Cell, Monolithic Foam System. Foam Structure Must not Contain Unbonded Foam Laminations;

**Willseal® Coreseal** for use in both vertical and horizontal below grade system applications requiring +/-25% movement capability, closed cell, and a lightweight seal.

**Willseal® Color Coreseal** for use in both vertical and horizontal below grade system applications requiring +/-25% movement capability, closed cell, and a lightweight seal.

**Willseal® Color Coreseal – CM** for use in both vertical and horizontal below grade Tremco system applications requiring +/-25% movement capability, closed cell, and a lightweight seal with an integrated waterproofing membrane.

**Willseal® 250 BG** for use in below grade applications, requiring +/- 50% movement capability

* + - * 1. Protection Course: [Waterproofing manufacturer's standard protection course material recommended for application.] [Provide the following:]

Specifier: If stipulating type of protection course, retain second option in "Protection Course" Paragraph above and retain one or more of following protection course products based upon Project requirements. If more than one protection course is retained, add description of location or indicate location of each on Drawings.

Select HDPE sheet thickness below based upon Project requirements. 20 mils thickness provides basic waterproofing and vapor barrier protection; 40 mils thickness also provides root barrier; 60 mils thickness provides protection against methane gas infiltration.

Polyethylene sheet, [20 mil (0.51 mm)] [40 mil (1.02 mm)] [60 mil (1.52 mm)] thick.

Basis of Design Product: **Tremco, Polyethylene Protection/Barrier Course**.

Smooth-surfaced modified bitumen sheet, 80 mils (2 mm) thick.

Basis of Design Product: **Tremco, PowerPly Standard Smooth**.

White granular-surfaced modified bitumen sheet, 120 mils (3 mm) thick.

Basis of Design Product: **Tremco, PowerPly Standard White Granular**.

Woven glass-fiber fabric, synthetic resin-impregnated.

Basis of Design Product: **Tremco, 2011**.

Asphalt-impregnated fiberglass ply felt.

Basis of Design Product: **Tremco, 2178**.

Premium asphalt-impregnated and coated fiberglass ply felt.

Basis of Design Product: **Tremco, 2190**.

Extruded hollow-core copolymer mat.

Basis of Design Product: **Tremco, 2450**.

Semi-flexible, asphaltic fiberglass-faced sheet with polymer-modified asphalt core.

Basis of Design Product: **Tremco, 2550/2560**.

UV-resistant, lightweight polyester mat.

Basis of Design Product: **Tremco, Protection Mat**.

* + - 1. DRAINAGE PANELS
				1. Drainage Mat: Composite mat with drainage core, filter fabric, and protective polymeric film[, recommended by waterproofing manufacturer for application.] [. Provide the following:]

Polystyrene core with nonwoven, needle-punched polypropylene fabric face and polymeric film backing; flow rate 18 gpm per foot (224 lpm per m) per ASTM D 4716.

Basis of Design Product: **TREMDrain 1000**.

Polystyrene core with woven polypropylene fabric face and polymeric film backing; flow rate 18 gpm per foot (224 lpm per m) per ASTM D 4716.

Basis of Design Product: **TREMDrain 2000**.

High compressive strength polystyrene core with nonwoven, needle-punched polypropylene fabric face and polymeric film backing; flow rate 9 gpm per foot (112 lpm per m) per ASTM D 4716.

Basis of Design Product: **TREMDrain S**.

Water-retaining perforated dimpled polystyrene core with spun-bonded polyolefin fabric on bottom face and [spun-bonded polyolefin fabric] [copper hydroxide-treated non-woven, needle punched root barrier fabric] on top face; flow rate [18 gpm per foot (224 lpm per m) at 1/2 inch (12 mm) thick] [80 gpm per foot (994 lpm per m) at 1 inch (25 mm) thick] per ASTM D 4716.

Basis of Design Product: **TREMDrain GS**.

* + - 1. INSULATION

Specifier: Retain "Insulation, General" Paragraph below if specifying insulation in another Section.

* + - * 1. Insulation, General: Comply with Section 07 21 00 "Thermal Insulation."

Specifier: Retain "Board Insulation" Paragraph below if board insulation is required over waterproofing and is not specified in another Section. If not indicated on Drawings, insert thickness requirement.

* + - * 1. Board Insulation: Extruded-polystyrene board insulation according to ASTM C578, square or shiplap edged.

Specifier: Type IV and Type VI insulations in first two subparagraphs below are usually limited to vertical applications. Type VII and Type V insulations, with higher compressive strengths, are used on plaza decks.

Type VI, 40-psi (276-kPa) minimum compressive strength.

Type VII, 60-psi (414-kPa) minimum compressive strength.

Type V, 100-psi (690-kPa) minimum compressive strength.

* + - 1. INSULATION DRAINAGE PANELS

Retain "Unfaced, Plaza-Deck, Insulation Drainage Panels" paragraph below if required for horizontal use.

* + - * 1. Unfaced, Plaza-Deck, Insulation Drainage Panels: Extruded-polystyrene board insulation, ASTM C578, Type VII, 60-psi (414-kPa) minimum compressive strength; unfaced; with shiplapped or channel edges and with one side having ribbed drainage channels.

Retain "Geotextile-Faced, Plaza-Deck, Insulation Drainage Panels" Paragraph below if required for horizontal use.

* + - * 1. Geotextile-Faced, Plaza-Deck, Insulation Drainage Panels: Extruded-polystyrene board insulation, ASTM C578, Type VII, 60-psi (414-kPa) minimum compressive strength; with tongue-and-groove edges, with one side having grooved drainage channels, and faced with manufacturer's standard, nonwoven-geotextile filter fabric.
			1. FLASHING SYSTEM
				1. Primer: Two-component, chemically curing methyl methacrylate

Basis of Design Product: **Tremco PUMA Primer**

* + - * 1. Base Coats: Polyurethane methacrylate

Basis of Design Product: **Tremco PUMA BC R**

1. EXECUTION
	* + 1. EXAMINATION
				1. Surface Condition: Before applying waterproofing materials and accessories, examine substrate and conditions to ensure substrates are fully cured, smooth, clean, dry, and free from high spots, depressions, loose and foreign particles and other deterrents to adhesion, and conditions comply with manufacturer's written recommendations.

Verify concrete and masonry surfaces are visibly dry, have cured for time period recommended by waterproofing manufacturer, and are free from release agents, curing agents, laitance, and other contaminates. Test for waterproofing adhesion per manufacturer's recommended method. Notify Architect of unsatisfactory conditions.

Test for capillary moisture per manufacturer’s recommended method.

Verify masonry joints are filled with mortar and struck flush.

* + - * 1. Proceed with installation only after unsatisfactory conditions have been corrected.
			1. INTERFACE WITH OTHER WORK
				1. Sequencing of Work: Coordinate sequencing of waterproofing work with work of other sections that form portions of building envelope moisture control to ensure that expansion joints, flashings and transition materials can be properly installed and inspected.
				2. Subsequent Work: Coordinate waterproofing work with work of other sections installed subsequent to waterproofing to ensure complete inspection of installed waterproofing and sealing of waterproofing penetrations necessitated by subsequent work.
			2. PREPARATION
				1. Clean, prepare, and treat substrates in accordance with waterproofing manufacturer's written instructions.

Mask adjacent finished surfaces.

Remove contaminants and film-forming coatings from substrates.

Remove projections and excess materials and fill voids with substrate patching material.

Prepare and treat joints and cracks in substrate per ASTM D 4258 and waterproofing manufacturer's written instructions.

For accessory materials, follow manufacturers application instructions.

* + - * 1. Detail Preparation: Prepare non-moving shrinkage cracks, large cracks, construction joints, expansion joints, projections and protrusions, penetrations, drains, and changes in plane in accordance with waterproofing manufacturer's written instructions and details, using accessory materials specified.

Adhere strips of elastomeric sheet to moving joints and large cracks by embedding in a layer of hot rubberized asphalt and overlay with coat of hot rubberized asphalt.

* + - * 1. Transitions to Adjacent Materials: Install elastomeric and composite reinforced flashing to form connect and seal waterproofing material to adjacent components of building waterproofing system, including, but not limited to, roofing system waterproofing, exterior fenestration systems, door framing, and other openings

Seal top of through-wall flashings to waterproofing with continuous transition strips of type recommended by waterproofing manufacturer for application.

Install elastomeric sheets at terminations of waterproofing membrane according to manufacturer's written instructions.

Install termination bars and mechanically fasten to top of elastomeric flashing sheet at terminations and perimeter of waterproofing.

* + - 1. FLASHING INSTALLATION
				1. General: Apply flashing material within manufacturer’s recommended application temperature ranges.
				2. Primer: Apply primer to substrates at required rate, using roller or brush. Allow to dry. Reprime areas if required by manufacturer’s written instructions.
				3. Flashing: Apply a cant of Tremco PUMA BC T 1" (2.5 cm) wide at the juncture of all horizontal and vertical surfaces (such as curbs, wall sections, columns or penetrations through the deck). Tool Tremco PUMA BC T to form a 45° cant. Use sufficient pressure to force out any trapped air and to assure complete wetting of the surface. Remove excess material from the deck or wall surface. Apply a strip of tape (masking tape or duct tape) to the vertical sections, 2 to 3" above the Tremco PUMA BC T cant to provide a neat termination of Tremco PUMA BC R. Apply Tremco PUMA Primer over the Tremco PUMA BC T cant before applying coating.
				4. Penetrations: For penetrations, apply Tremco PUMA Primer over the cant, up the penetration to 1” below the top of the projected overburden. Allow primer to cure. Apply the Tremco PUMA BC R mixture using a medium-nap roller to achieve a minimum thickness of 60 mils over the primed pentration, over the cant, and extended minimum of 12 inches onto the horizontal plane. Spiked rollers are not required for change in plane.
			2. WATERPROOFING INSTALLATION
				1. General: Apply waterproofing material to form a seal with strips and transition strips and to achieve a continuous waterproofing according to waterproofing manufacturer's written instructions. Apply waterproofing material within manufacturer's recommended application temperature ranges.
				2. Primer: Apply primer to substrates at required rate, using roller, brush, or airless spray. Allow to dry. Reprime areas if required by manufacturer’s written instructions.
				3. Heat and apply rubberized asphalt according to manufacturer's written instructions. Heat rubberized asphalt in an oil- or air-jacketed melter with mechanical agitator specifically designed for heating rubberized asphalt.

Specifier: Retain first paragraph below if appropriate to scope of Project.

* + - * 1. Start application with manufacturer's authorized representative present.
				2. Hot Fluid-Applied Rubberized Asphalt Waterproofing, Reinforced: Apply waterproofing in total wet film thickness recommended in writing by waterproofing manufacturer, but not less than 215‑mil (5.5‑mm) wet film thickness, applied in two or more equal coats applied using methods recommended by waterproofing manufacturer, as follows:

Apply first coat at minimum thickness of 90 mils (2.3 mm).

Thoroughly embed reinforcing fabric in first coat while still liquid, with slight overlap of fabric edges.

Apply second coat at not less than 125 mils (3.2 mm) and as required to achieve total thickness of not less than 215 mils (5.5 mm).

* + - * 1. Terminations: Install terminations of waterproofing membrane in accordance with ASTM C 898 and ASTM C1471, as applicable to application, at not less than minimum height recommended by waterproofing manufacturer. Overlap waterproofing on to intersecting construction a minimum of 24 inches (600 mm).
				2. Do not cover waterproofing until it has been tested and inspected by Owner's testing agency.
				3. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates and reapply waterproofing components.
			1. PROTECTION INSTALLATION
				1. Protection Course: Cover waterproofing with protection course prior to backfilling or subjecting installation to traffic. Overlap joints.
				2. Drainage Panel: Place and secure drainage panels using methods that do not penetrate waterproofing. Face geotextile away from deck substrate. Lap edges and ends of geotextile.
				3. Insulation: Install one or more layers of board insulation as required, staggering joints. Fit within 1/2 inch (12 mm) of projections and penetrations.

On vertical surfaces, set insulation units into rubberized asphalt according to insulation manufacturer's written instructions.

On horizontal surfaces, loosely lay insulation units according to insulation manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

* + - 1. FIELD QUALITY CONTROL
				1. Contractor's Inspector: Contractor shall engage manufacturer's qualified Inspector full-time during the Work to perform tests and inspections, including documenting of waterproofing prior to concealment.

Contractor's Inspector shall measure membrane thickness with pin tester at least once for every 100 sq. ft. (10 sq. m).

Provide written report of tests and inspections.

Where applicable, inspect transitional material such as expansion joints, flashings, insulation are installed per manufacturers recommendations.

Retain "Testing Agency" Paragraph below if applicable to Project, and edit to identify party retaining independent agency to perform tests and inspections.

* + - * 1. Testing Agency: [Owner will engage] [Engage] a qualified testing agency to inspect substrate conditions, surface preparation, waterproofing application, protection, and drainage components, and to furnish reports to Architect.

Testing includes EVFM inspection prior to concealing waterproof membrane as specified in Section 07 72 73 "Membrane Leak Detection System."

* + - * 1. Coordination of Testing: Cooperate with testing agency. Allow access to work areas and staging. Notify testing agency in writing of schedule for Work of this Section to allow sufficient time for testing and inspection.

Do not cover Work until testing and inspection is completed and accepted.

* + - * 1. Reporting: Forward written inspection reports to the Architect within 10 working days of the inspection and test being performed.
				2. Correction: Correct deficient applications not passing tests and inspections, make necessary repairs, and retest as required to demonstrate compliance with requirements.
			1. CLEANING AND PROTECTING
				1. Clean spills, stains, and overspray resulting application utilizing cleaning agents recommended by manufacturers of affected construction. Remove masking materials.
				2. Protect waterproofing from damage from subsequent work. Protect waterproofing materials from exposure to UV light for period in excess of that acceptable to waterproofing manufacturer; replace overexposed materials and retest.

END OF SECTION