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

**Section 07 62 00 SHEET METAL FLASHING AND TRIM**

Specifier: This guide specification section specifies Tremco TREMproof® PUMA Decorative Flashing as a replacement for sheet metal flashing in below-grade to above-grade transitions. TREMproof® PUMA Flashing System is a quick-cure, liquid-applied system based on PUMA technology. This system cures within 30 minutes, even in temperature below freezing, and has tenacious adhesion to concrete and metal.

Separate guide specification sections are available from Tremco for below-grade and above-grade 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 17 00 Bentonite Waterproofing (Paraseal GM/LG 20 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 62 00 – SHEET METAL FLASHING AND TRIM

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

Polyurethane methacrylate cold-applied waterproofing membrane for flashing applications as a replacement for standard sheet metal flashing

* + - 1. RELATED REQUIREMENTS

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

Division 01 Section "General Requirements"

Division 01 Section "Special Procedures"

Division 05 Section "Structural Steel”

Division 07 Section "Modified Bituminous Membrane Roofing"

Division 07 Section "Joint Sealants"

* + - 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 D 1353 - Standard Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products

ASTM D 1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings

ASTM D 822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings

ASTM D 638 - Standard Test Method for Tensile Properties of Plastics

ASTM D 5147 - Standard Guide to Testing Solvent-Borne Architectural Coatings

ASTM D 4073 - Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membranes

ASTM D 2240 - Standard Test Method for Rubber Property—Durometer Hardness

ASTM D 4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

ASTM C 1305 - Standard Test Method for Crack Bridging Ability of Liquid-Applied Waterproofing Membrane

ASTM C 501 - Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser

ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material

ASTM D 5602 - Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens

ASTM D 570 - Standard Test Method for Water Absorption of Plastics

ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials

ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

ASTM D 1929 - Standard Test Method for Determining Ignition Temperature of Plastics

ASTM D 2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics

ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

* + - * 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 flashing products and installation, including surface preparation, substrate conditions, 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 flashing product specified, including:

Technical data indicating compliance with requirements.

Substrate preparation instructions and recommendations.

* + - * 1. Shop Drawings: Show locations for flashing 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 flashing system, by qualified testing agency, indicating proposed flashing solution 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 [two] 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 [two] 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/flashing as one of its principal products.

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

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 10 lineal ft. 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 flashing with adjacent vertical waterproofing and moisture control systems, including Air Barrier Membrane(s)

* + - 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: 20 years date of Substantial Completion.

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].
				2. Source Limitations: Provide waterproofing system materials and accessory products from single source from single manufacturer.
			1. PERFORMANCE REQUIREMENTS
				1. General: Flashing system shall be capable of performing as a continuous watertight installation. Flashing shall accommodate normal substrate movement and seal 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: 0 g/L maximum per 40 CFR 59, Subpart D (EPA Method 24) and complying with requirements of authorities having jurisdiction.
				2. Compatibility: Provide flashing 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 FLASHING SYSTEM
			2. FLASHING SYSTEM
				1. Polyurethane methyl methacrylate system: Seamless, high-solids-content, cold liquid-applied, elastomeric, flashing system.

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

% Solids, ASTM D1353: 100%

Elongation, ASTM D638: 407%

Tearing Resistance, ASTM D4073: 91 lbf

Hardness (Shore A), ASTM D2240: 65 to 87

Low-Temperature Crack Bridging, ASTM C1305: Passes

Taber Abrasion, ASTM C501: Passes

Water Absorption, ASTM D570: < 0.1%

Water Vapor Transmission, ASTM E96: 0.03 perms

Adhesion-in-peel, ASTM C794: Concrete failure with primer

* + - 1. Components
				1. Primer: Two-component, chemically curing methyl methacrylate

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

* + - * 1. Base Coat: Modified polyurethane methacrylate

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

* + - * 1. Top Coat: Two-component, chemically curing methyl methacrylate

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

1. EXECUTION
	* + 1. EXAMINATION
				1. Surface Condition: Before applying waterproofing materials, 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 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.

All concrete surfaces must be shotblast or mechanically abraded using appropriate Cup Grinding Wheel or Zec Wheel to provide required CSP prior to any coating application. For proper methods, refer to ICRI's Technical Guideline No. 310.2R-2013. For supplier information contact Tremco's Technical Service. Do not acid etch.

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

Remove contaminants and film-forming coatings from substrates.

Prepare and treat joints and cracks in substrate per ASTM D 4258 and waterproofing manufacturer's written 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. Re-prime areas if required by manufacturer’s written instructions.
				3. Detailing: 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.
				4. Flashing: Apply Tremco PUMA Flashing in accordance to manufacturer’s recommended application instructions.
				5. Top Coat: Apply Tremco PUMA TC in accordance to manufacturer’s recommended application instructions.
				6. 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. 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 flashing thickness with a wet mil gauge at least once for every 50 lineal ft.

Provide written report of tests and inspections.

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

* + - * 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 flashing from damage from subsequent work.

END OF SECTION