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

**Section 07 18 00 TRAFFIC COATINGS Vehicular Traffic Coatings Guide Specification**

Specifier: This guide specification section specifies **Tremco Vulkem® 350FC/950NF/EWS Hybrid** deck coating system of polyurethane traffic and methyl methacrylate (MMA) coating products. This deck coating system is a cold applied vehicular traffic deck coating system designed for waterproofing concrete slabs and protecting occupied areas underneath from water damage. Additionally, the system will protect concrete from damaging effects of deicing salts, gasoline, oils and antifreeze.

**Vulkem 350FC Base Coat** is a two-component, fast-curing, VOC-compliant, chemically curing urethane membrane that bonds firmly to clean, dry, and prepped concrete and metal surfaces. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16” (1.5 mm). Vulkem 350FC will prevent water migration between itself and the substrate and its compatible with all of Tremco’s urethane and top coats.

**Vulkem 950NF Intermediate Coat** is a two-component urethane that is applied after the Vulkem 350FC Base Coat has cured. The intermediate coat is loaded with aggregate to give the system excellent impact, abrasion and chemical resistance

**Tremco PUMA TC** is a methyl methacrylate (MMA) top coat that is applied after Vulkem 950NF has cured. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete the Vulkem EWS system.

Basic Uses

Specially formulated for the odor-sensitive applications in heavily occupied areas It is ideal for restoration work where both time and odor are a concern.

Medium-Duty applications include waterproofing parking stalls and similar primarily concrete substrates requiring an elastomeric waterproofing system.

Heavy-Duty vehicular traffic deck coating applications include waterproofing concrete slabs and protecting occupied areas underneath from water damage. The system also protects concrete from damaging effects of water deicing salts, chemicals, gasoline, oils and anti-freeze.

This section is easily edited using several common commercial specification software tools.

We recommend you consult with your Tremco construction 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 products appear in the following CSI MasterFormat guide specifications available from Tremco:

• Section 07 01 91 Joint Sealant Rehabilitation and Replacement

• Section 07 14 13.01 Hot Fluid-Applied Waterproofing, Deck (TremPROOF 6100)

• Section 07 14 13.02 Hot Fluid-Applied Waterproofing, Vegetated Roof (TremPROOF 6100)

• Section 07 14 16.01 Cold Fluid-Applied Waterproofing, Vertical and Deck (TremPROOF 250GC)

• Section 07 14 16.02 Cold Fluid-Applied Waterproofing, Vertical (TremPROOF 250GC)

• Section 07 14 16.03 Cold Fluid-Applied Waterproofing, Deck (TremPROOF 250GC)

• Section 07 14 16.04 Cold Fluid-Applied Waterproofing, Vegetative Roof (TremPROOF 250GC)

• Section 07 17 16.01 Bentonite Waterproofing (Paraseal)

• Section 07 17 16.02 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, Mechanical Rooms

• Section 07 27 13 Modified Bituminous Sheet Air Barriers, Vapor-Retarding (ExoAir 110)

• Section 07 27 23 Board Product Air Barriers, Vapor Permeable (SECUREROCK ExoAir 230)

• Section 07 27 26.01 Fluid-Applied Membrane Air Barriers, Vapor-Retarding (ExoAir 120)

• Section 07 27 26.02 Fluid-Applied Membrane Air Barriers, Vapor Permeable (ExoAir 220)

• Section 07 27 26.03 Fluid-Applied Membrane Air Barriers, Vapor Permeable (ExoAir 230)

• Section 07 92 00 Joint Sealants

• Section 08 85 00 Glazing Sealants

• Section 32 13 73 Concrete Paving Joint Sealants

This document includes Specifier notes in hidden text. To view hidden text, [www.bim.net/displaying-hidden-text-in-microsoft-word-step-by-step-instructions-for-windows-and-mac/](http://www.bim.net/displaying-hidden-text-in-microsoft-word-step-by-step-instructions-for-windows-and-mac/)

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SECTION 07 18 00 – TRAFFIC COATINGS, VEHICULAR TRAFFIC

Part 1 – GENERAL

* + - 1. SECTION INCLUDES

Polyurethane traffic coatings for vehicular traffic applications.

Pavement markings.

* + - 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 traffic coating substrate.

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

Sections 07 90 00 / 07 95 00 Joint Protection/ Expansion Control

* + - 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 D1353 – Standard Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products

ASTM D1640 – Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature

ASTM D822 – Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings

ASTM D638 – Standard Test Method for Tensile Properties of Plastics

ASTM D5147 – Standard Test Method for Sampling and Testing Modified Bituminous Sheet Material

ASTM D4073 – Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membrane

ASTM D624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

ASTM D2240 – Standard Test Method for Rubber Property- Durometer Hardness

ASTM B117 – Standard Test Method to Determine the Corrosive Effect of Salt on Metallic Objects

ASTM E96 – Standard Test Method for Water Vapor Transmission of Materials

ASTM D5602 – Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens

ASTM D570 – Standard Test Method for Water Absorption of Plastics

ASTM D412 – Measures the Elasticity of a Material While Under Tensile Strain

ASTM C794 – Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants

ASTM D903 – Standard Test Method for Peeling or Stripping Strength of Adhesive Bonds

ASTM D1929 – Standard Test Method for Determining Ignition Temperate of Plastics

ASTM D635 – Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

ASTM D3029 – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimens by Means of a Tup (Falling Weight)

ASTM D2843 – Standard Test Method for Density of Smoke from the Burning of Decomposition of Plastics

ASTM D4060 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abrasion

ASTM B117 – Standard Practice for Operating Salt Spray (Fog) Apparatus

* + - * 1. International Concrete Repair Institute (ICRI): [www.icri.org](http://www.icri.org):

ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair

* + - * 1. Sealant, Waterproofing, and Restoration Institute (SWRI): [www.swrionline.org](http://www.swrionline.org):

SWR Institute Validation Program

* + - * 1. UL Laboratories, Inc.(UL): [www.ul.com](http://www.ul.com):

UL790 - Standard Test Methods for Fire Tests of Roof Coverings

* + - * 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 traffic coating products and installation, including surface preparation, substrate conditions, expansion joint requirements, project and manufacturer's details, installation procedures, mockups, testing and inspection requirements, protection and repairs, and coordination and sequencing of traffic coating work with work of other Sections.

* + - 1. ACTION SUBMITTALS
				1. Product Data: For each type of traffic coating product and expansion joint accessory specified, indicating compliance with requirements.
				2. Shop Drawings: Show locations for traffic coating system components. Show details for each type of substrate, movement joints, corners, and edge conditions, including penetrations, transitions, and terminations.
			2. INFORMATIONAL SUBMITTALS
				1. Qualification Data: For Installer, manufacturer[, and traffic coating Inspector].

Certification of manufacturer's approval of Installer.

* + - * 1. Product Test Reports: Test data for traffic coating products and traffic coating system, by qualified testing agency, indicating proposed traffic coating 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 [five] 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 traffic coating 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 "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 traffic coating 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 traffic coating 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] [Owner] for each type of substrate condition. Include examples of surface preparation, crack and joint treatment, traffic coating application, slip-resistant aggregate application, and flashing, transition, and termination conditions, to set quality standards for execution.

Include intersections of deck traffic coating with adjacent vertical coating and moisture control system applications.

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 traffic coating 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 traffic coating within the range of ambient and substrate temperatures recommended by traffic coating manufacturer.

Protect substrates from environmental conditions that affect coating performance.

Do not apply traffic coating (or expansion joint accessories if applicable), to a damp or wet substrate or during snow, rain, fog, or mist or when dew is present.

* + - 1. SCHEDULING
				1. Coordinate installation of traffic coating with completion of roofing and other work requiring interface with traffic coating.
				2. Schedule work so traffic coating system (including expansion joints if applicable) applications may be inspected prior to concealment.
			2. WARRANTY

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

* + - * 1. Special Manufacturer's Warranty: Manufacturer's standard form in which traffic coating manufacturer agrees to furnish and traffic coating 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 traffic coating 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 and edit option below if substitutions are allowed for project.

* + - * 1. Basis-of-Design Products: Provide traffic coating products manufactured by **Tremco, Incorporated, 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 traffic coating system materials and accessory products from single-source manufacturer.
			1. PERFORMANCE REQUIREMENTS
				1. General: Traffic coating 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 structure exterior. Traffic coating shall accommodate normal substrate movement and seal expansion and control joints, construction material transitions, opening transitions, penetrations, and perimeter conditions without resultant moisture deterioration.
				2. Compatibility: Provide traffic coating system materials that are compatible with one another and with adjacent materials under conditions of service and application required, as demonstrated by traffic coating manufacturer based on testing and field experience.

Specifier: Retain "Fire-Test-Response Characteristics" Paragraph below for traffic coatings that are roof coverings; revise to suit Project. Indicate class for each traffic coating when tested according to ASTM E 108. Verify requirements of authorities having jurisdiction and of Owner's insurer.

* + - * 1. **Fire-Test-Response Characteristics**: Provide traffic-coating materials with the fire-test-response characteristics as determined by testing identical products per test method below for deck type and slopes indicated by an independent testing and inspecting agency that is acceptable to authorities having jurisdiction.

[Class A] covering per UL790[ or ASTM E108).

Specifier Retain "Energy Performance" paragraph below to specify cool-roof performance for traffic coatings that are installed on exposed decks. Verify availability of compliant products with manufacturers..

Specifier: Retain "VOC Content" Paragraph below if required for LEED-NC or LEED-CS Credit IEQ 4.2 and product is used inside the weatherproofing system such as for equipment rooms and underground parking. Coordinate product selection to ensure that products comply.

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

Specifier:Vulkem® 350FC/950NF/EWS Hybrid Vehicular Traffic Deck Coating System is designed to have a tenacious bond to concrete and extreme abrasion resistance. It can be driven on in one hour after final application, which will minimize operational disruption.

* + - 1. TRAFFIC COATING FOR VEHICULAR TRAFFIC, EXTERIOR EXPOSURE
				1. Traffic Coating: Manufacturer's standard low-odor, low-VOC, exterior exposure, traffic-bearing, seamless, high-solids-content, cold liquid-applied, elastomeric, waterproofing membrane system with integral wearing surface for vehicular traffic; meeting ASTM C957, and SWRI validated and below 100 g/L maximum per 40 CFR 59, Subpart D (EPA Method 24) and complying with requirements of authorities having jurisdiction

Basis of Design Products: **Tremco, Inc. Vulkem 350FC/950NF/EWS Hybrid**

* + - * 1. Primer: Liquid primer may be recommended for substrate and conditions by traffic-coating manufacturer. When required.
				2. Preparatory and Base Coats: Aromatic polyurethane.
				3. Topcoat: Methyl Methacrylate.

Tremco PUMA TC

Color: As selected by Architect from manufacturer's full range.

* + - * 1. Topcoat Aggregate: Manufacturer's standard aggregate for each use indicated of particle sizes, shape, and minimum hardness recommended in writing by traffic-coating manufacturer.
			1. ACCESSORY MATERIALS
				1. General: Accessory materials as described in manufacturer's written installation instructions, recommended to produce complete traffic coating system meeting performance requirements, and compatible with traffic coating material and adjacent materials.
				2. Single-Component, Non-Sagging Urethane Joint Sealant: ASTM C920, Type NS, Class 50.

Basis of Design Product: **Tremco Incorporated; Dymonic 100**.

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

**Willseal® 250** for use in both vehicular and pedestrian traffic applications.

**Willseal® 250-R** for use in both vehicular and pedestrian traffic applications requiring additional point load resistance.

**Willseal® 250-CR** for use in both vehicular and pedestrian traffic applications subject to chemical exposure, reference Willseal list of approved chemicals.

**Willseal® Coreseal** for use in both vehicular and pedestrian traffic applications requiring +/-25% movement capability, closed cell, and a lightweight seal.

**Willseal® Color Coreseal – H** for use in both vehicular and pedestrian traffic applications requiring +/-25% movement capability, closed cell, and a lightweight seal. For vertical applications refer to Color Coreseal – V.

**Willseal® Color Coreseal – CM** for use in both vehicular and pedestrian traffic applications requiring +/-25% movement capability, closed cell, and a lightweight seal with an integrated waterproofing membrane. For vertical applications refer to Color Coreseal – V.

**Willseal® FR-H** - for use in both vehicular and pedestrian traffic applications requiring hourly fire rated systems. For vertical applications refer to Willseal® FR-V.

Willseal® approved accessory sealants as per Willseal application instructions.

1. EXECUTION
	* + 1. EXAMINATION
				1. Surface Condition: Before applying traffic coating materials and system accessories, examine substrate and conditions to ensure substrates are fully cured 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 surfaces are visibly dry, have cured for time period recommended by traffic coating manufacturer, and are free from release agents, curing agents, laitance, and other contaminates.

Test surfaces following cleaning and abrasion specified below.

Test for capillary moisture by method recommended in writing by traffic-coating manufacturer.

Test for traffic coating adhesion per manufacturer's recommended method.

Notify Architect in writing of unsatisfactory conditions.

* + - * 1. Proceed with installation once unsatisfactory conditions have been corrected.
			1. PREPARATION
				1. Surface Preparation: Clean, prepare, and treat substrates in accordance with ASTM C1127 and traffic coating manufacturer's written instructions.

Remove contaminants, curing compounds, and film-forming coatings from substrates.

Remove projections and excess materials and fill voids with manufacturer's recommended substrate patching material.

Mechanically abrade concrete surfaces to a uniform profile in accordance with ASTM D4259 and meeting ICRI Surface Profile CSP 3-4. Do not acid etch.

Clean prepared surfaces in accordance with ASTM D4258.

* + - * 1. Protect adjacent finished surfaces by masking. Mask termination point on vertical surfaces. Protect weep holes and drains.
				2. For accessory materials, follow manufacturers application instructions.
			1. TERMINATIONS AND PENETRATIONS
				1. Prepare vertical and horizontal surfaces at horizontal to vertical transitions, terminations, joints, and penetrations through traffic coatings in accordance with ASTM C1127 and manufacturer's written instructions, using accessory materials specified.
				2. At terminations of traffic coating exposed to traffic, rout 1/4 by 1/4 inch keyway in concrete.
				3. 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 manufacturer's written instructions and details, .

Prepare joints and cracks in substrate in accordance with ASTM C1127 and ASTM D4258 and manufacturer's written instructions.

* + - * 1. Joint Sealant Installation: Comply with ASTM C1193 and manufacturer's written instructions. Allow joint sealants to cure adequately before coating with traffic coating.

Provide joint sealant cants with backer rods at penetrations and at horizontal-to-vertical intersections. Tool sealant material to form 45 degree angle transition.

Rout and fill cracks with joint sealant and tool flush with surface.

Feather edges of joint sealant applications.

Allow joint sealant to cure. Apply detail coat of base coat over unfilled and filled cracks and joints, and feather terminating edges.

Fill expansion joints less than 1” with backer rod and joint sealant. Do not apply traffic coating over expansion joints.

Fill expansion joints greater than 1” with specified Willseal® Expansion Joint material, contact Tremco for sealant recommendation. Do not apply traffic coating over expansion joints.

* + - 1. VEHICULAR TRAFFIC-COATING APPLICATION
				1. Primer: Prime metal surfaces, porous surfaces (when required), and preceding coats left uncoated for more than 24 hours or that have lost surface tack, with manufacturer's recommended primer. Allow to cure before proceeding.

Specifier: Retain first paragraph below if applicable; recommended for large scale or critical applications.

* + - * 1. Start traffic-coating application in presence of manufacturer's technical representative.
				2. Apply traffic coating according to ASTM C1127 and manufacturer's written instructions.

Verify that wet film thickness of each coat complies with requirements every [100 sq. ft. (9 sq. m)].

Specifier: Edit number of coats below based upon manufacturer's recommendation for type of traffic. Intermediate coat is typically recommended for heavy traffic areas.

* + - * 1. Apply number of coats of specified compositions for vehicular traffic coating at locations indicated on Drawings.

Base Coat: Single application of not less than 25 mil (0.635 mm).

Intermediate Coat: Single application, roller applied, at not less than 20 mil (0.508 mm).

Top Coat: Single application, roller applied, at not less than 25-29 mil (0.635- 0.7366 mm).

Aggregate: Uniformly broadcast aggregate on coats specified to receive aggregate. Embed aggregate according to manufacturer's written instructions.

* + - * 1. Apply traffic coatings to prepared wall terminations and vertical surfaces to height indicated; omit aggregate on vertical surfaces.
				2. Cure traffic coatings. Prevent contamination and damage during application and curing stages.
			1. FIELD QUALITY CONTROL

Specifier: 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, traffic coating application, protection, and drainage components, and to furnish reports to Architect.
				2. 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 3 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 traffic coating from damage from subsequent work. Protect traffic coating materials from exposure to UV light for period in excess of that acceptable to traffic coating manufacturer; replace overexposed materials and retest.

END OF SECTION