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## PRODUCT DESCRIPTION

Vulkem® EWS with PUMA Technology is designed to have tenacious adhesion and extreme abrasion resistance. It can be driven on in one hour, which will minimize operation disruption. Vulkem Extreme Wearing System (EWS) is a waterproof traffic deck coating system that utilizes polyurethane-methacrylate (PUMA) technology. Vulkem EWS vehicular system is composed of a primer (Tremco PUMA Primer or TREMprime VB Primer), a base coat (Tremco PUMA BC or BC LM), an intermediate wear coat (Tremco PUMA WC) and a top coat (Tremco PUMA TC). All system components, except TREMprime VB, are cured using Tremco PUMA Initiator or Initiator+.

Tremco PUMA Primer is a polymethyl-methacrylate (PMMA), two-component primer for porous and non-porous substrates.

TREMprime VB Primer is a two-component, epoxy-based, solvent-free vapor barrier primer for concrete and plywood surfaces.

Tremco PUMA BC is a polyurethane-methacrylate (PUMA) base coat. Tremco PUMA BC bonds firmly to Tremco PUMA Primer. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16" (1.5 mm). If cut or damaged, Tremco PUMA BC will prevent water migration between itself and the substrate.

Tremco PUMA BC LM is a low-modulus version of Tremco PUMA BC waterproofing membrane that is used when dynamic movement and extreme service temperature ranges are anticipated.

Tremco PUMA WC is a polyurethane-methacrylate (PUMA) wear coat. Tremco PUMA WC is applied after Tremco PUMA BC has cured. The wear coat is loaded with aggregate to give the system excellent impact, abrasion and chemical resistance.

Tremco PUMA TC is a polymethyl-methacrylate (PMMA) top coat. Interlaminary adhesion to Tremco PUMA WC is exceedingly strong. The top coat affords excellent abrasion resistance, UV stability and chemical resistance to complete the Vulkem EWS vehicular system.

Tremco PUMA Initiator/Initiator+ is a reactive catalyst in the form of a white powder used to cure all PUMA/PMMA resins.

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## BASIC USES

Vulkem EWS is a cold-applied traffic deck coating system designed for waterproofing concrete slabs and protecting occupied areas underneath from water damage. Additionally, the system will protect the concrete from the damaging effects of chloride, deicing salts, chemicals, gasoline, oils and anti-freeze. The Vehicular System is ideal for parking structures, high-wear turn and drive lanes, helical turns, ramps, and ticket splitters.

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## FEATURES & BENEFITS

- PUMA technology delivers extreme durability while maintaining its crack-bridging characteristics, eliminating the need for reinforcing fabric.
- Rapid set-up times allow for quick overall installation, as well as the ability to open up to traffic one hour later.
- Can be applied at temperatures as low as 14 °F (-10 °C), which allows for continuation of projects in the colder months.
- Initiator adjustments allow for 30 to 45 min cure time between applications, even at temperatures below freezing.
- Extremely forgiving application allows users to apply additional coats long after the previous coat has cured.
- Unique chemistry allows for easy repair.
- Compatible with Tremco sealants, coatings and expansion joints, which is essential for tie-ins, detailing and penetrations.

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## AVAILABILITY

Immediately available from your local Tremco Sales Representative

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## PACKAGING

Tremco PUMA Primer: 2-gal and 6-gal pails

TREMprime VB Primer: Part A: 2.4-gal pails Part B: 1.2-gal pails

Tremco PUMA BC (all grades): 6-gal pails  
Tremco PUMA WC: 6-gal pails  
Tremco PUMA TC: 6-gal pails  
Tremco PUMA Initiator: 22-lb in 2-gal pails & 55-lb in 6-gal pails  
Tremco PUMA Initiator+: 10-lb in 3-gal pails, 25-lb in 6-gal pails, 25 75-g pouches in a box  
Tremco PUMA Filler Powder: 55-lb bags  
Tremco PUMA Cleaner: 6-gal pails

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## COLORS

Tremco PUMA TC is available in Gray, Slate Gray, Charcoal, White, Beige, Tintable and Decorative.  
Universal Color Paks are available for use with Tremco PUMA TC Tintable.

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## APPLICABLE STANDARDS

ASTM C957  
CSA S413

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## FIRE RATED ASSEMBLIES

ANSI/UL790 - Standard Test Methods for Fire Tests of Roof Coverings  
CAN/ULC-S107 - Methods of Fire Tests of Roof Coverings

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## INSTALLATION

Concrete shall be water-cured and attain a 4000 PSI minimum compressive strength. Concrete finish shall be a light steel trowel followed by an equivalent ICRI #3-#4 finish. Moisture content in the concrete must be lower than 6% as measured using a Tramex CME 4 Moisture Meter. Depending on concrete construction and job site location, additional concrete testing may be required. Please contact your local Tremco Sales or Technical representative.

Please refer to the Vulkem EWS Application Instructions for complete application details. The techniques involved may require modification to adjust to job-site specific conditions. Consult your Tremco Sales Representative or Tremco Technical Services for site conditions and requirements.

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## LIMITATIONS

- Use with adequate ventilation.
  - Not for use over expanded polystyrene, extruded polystyrene, poured in place gypsum, lightweight insulating concrete, cementitious wood fiber decks and coal tar pitch.
  - Do not apply in falling precipitation or when precipitation is imminent.
  - All surfaces must be sound, clean, free of standing water and free from contamination.
  - Any questions regarding drying times, coverage rates and unique application techniques should be directed to Tremco Technical Services or your local Tremco Sales Representative.
  - Do not apply over contaminated surfaces.
  - Do not thin.
  - Substrate must be at least 5 °F (3 °C) above the measured dew point temperatures to avoid dew point conditions.
  - Do not store in direct sunlight for prolonged periods.
  - Unvented metal pan decks, slab-on-grade and hollow core plank decks require additional qualification prior to application. Please contact Tremco technical services for more information.
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## WARRANTY

Tremco warrants its Products to be free of defects in materials but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace or refund the purchase price of the quantity of Tremco Products proven to be defective, and Tremco shall not be liable for any loss or damage.

## TYPICAL PHYSICAL PROPERTIES

| PROPERTY                          | TEST METHOD                       | TREMCO PUMA BC                  | TREMCO PUMA WC    | TREMCO PUMA TC    |
|-----------------------------------|-----------------------------------|---------------------------------|-------------------|-------------------|
| VOC Content                       | Method 310                        | 0 g/L                           | 0 g/L             | 0 g/L             |
| % Solids (by weight)              | ASTM D1353                        | 100%                            | 100%              | 100%              |
| Drying Time @ 75 °F, 50% RH       | ASTM D1640                        | 80 mil film, 1 hr               | 65 mil film, 1 hr | 17 mil film, 1 hr |
| Weathering                        | ASTM D822<br>Weatherometer 350 hr | N/A                             | N/A               | No effect         |
| Elongation                        | ASTM D638                         | 407-420%                        | 250%              | 130%              |
| Elongation                        | ASTM D5147                        | Min 30%                         | Min 30%           | Min 30%           |
| Tensile Strength                  | ASTM D638 @ 75 °F                 | 991 - 1680 psi                  | 1550 psi          | 986 psi           |
| Tearing Resistance                | ASTM D4073                        | 91 lbf                          | 148 lbf           | 203 lbf           |
| Hardness (Shore D)                | ASTM D2240                        | 18 - 35                         | 45                | 55                |
| Hardness (Shore A)                | ASTM D2240                        | 65-87                           | 96                | 100               |
| Abrasion Resistance (1000 cycles) | ATSM D4060                        | N/A                             | N/A               | 51 mg             |
| Low-Temperature Crack Bridging    | ASTM C1305                        | Passes                          | N/A               | N/A               |
| Taber Abrasion                    | ASTM C501                         | Passes                          | N/A               | N/A               |
| Peak Load @ 73 °F, avg.           | ASTM D5147                        | >70 lbf/in                      | 81 lbf/in         | 238 lb/in         |
| Puncture Resistance               | ASTM D5602                        | > 56 lbs                        | > 56 lbs          | > 56 lbs          |
| Water Absorption                  | ASTM D570                         | < 0.1%                          | < 0.1%            | < 0.1%            |
| Water Vapor Transmission          | ASTM E96                          | 0.03 perms                      | 0.03 perms        | 0.03 perms        |
| Adhesion-in-Peel                  | ASTM C794                         | Concrete failure<br>with primer | 35 lbs            | N/A               |
| Self-Ignition Temperature         | ASTM D1929                        | 800 °F<br>427 °C                | 840 °F<br>449 °C  | 850 °F<br>454 °C  |
| Smoke Density                     | ASTM D2843                        | 4.1%                            | 28.7%             | 2.1%              |
| Rate of Burn                      | ASTM D635                         | 1.2 in/min                      | 1.7 in/min        | 0.2 in/min        |