

# CrownFlex™ Semi-Rigid Epoxy MV (Thixotropic)

## TECHNICAL DATA SHEET Product Number: 8503

Semi-Rigid Epoxy Medium Viscosity (Thixotropic) Cove Paste and Static Joint Sealant and Crack Filler

### DESCRIPTION

**CrownFlex No. 8503** is a two-component, medium viscosity, 100% solids, semi-rigid epoxy thixotropic cove paste and joint sealant and crack filler. It features a combination of excellent adhesion and elongation not available in general purpose epoxy. It is formulated to provide cove mortar to when used with silica sands or decorative color quartz aggregate and for armoring of concrete joint edges and minimizing the deterioration of concrete joint/crack edge from impact. It is available in standard and fast cure. It is used for embedding detector wire loops for traffic signals, electric gates and robotics. CrownFlex No. 8503 should be used in lieu of elastomeric sealants that meet ASTM C920 Standard Specification for Elastomeric Joint Sealants which do not armor the concrete joint edges. It is used on floors, joints and cracks subjected to heavy foot traffic, fork lift traffic and chemical attack, specifically food acids. In addition, it is used as an epoxy membrane for waterproofing and crack dampening under epoxy coating and flooring systems. It can also be used as a “cove adhesive” for hanging semi-rigid prefabricated cove.

### TYPICAL USES

- FAA P-606 Runway Sealant for Wires and Lights
- Detector Wire Loops for Traffic Signal, Electric
- Gates and Robotics
- Control Joints and Crack Semi-Rigid Sealant
- Concrete and Polymer Floor Joint Edge Reinforcement
- Cove Base Mortar Binder

### CONTROL JOINT COVERAGE RATE

Installation coverage will vary with application method, width and depth of control joint to be filled. There are 231 cubic inches per gallon of CrownFlex No.8503. (Theoretical coverage does not address wastage.)

#### APPROXIMATE YIELD PER GALLON

Width Per Inch	Depth Per Inch	Linear Feet Per Inch
1/8	1/8	1200
1/8	1/4	600
1/8	1/2	300
1/8	3/4	200
1/8	1	150
1/4	1/8	600
1/4	1/4	300
1/4	1/2	150
1/4	3/4	100
1/4	1	75

#### APPROXIMATE YIELD PER GALLON

Width Per Inch	Depth Per Inch	Linear Feet Per Inch
1/2	1/8	300
1/2	1/4	150
1/2	1/2	75
1/2	3/4	50
1/2	1	37
1	1/8	150
1	1/4	75
1	1/2	37
1	3/4	25
1	1	19

#### Cove Gel Binder and Aggregate - Clear Opaque or Pigmented

It can be placed as a cove base primer (vertical or horizontal at 160 sq. ft. per gal)

1 ¼ to 1 ½ gal to 100 lbs. trowel mortar aggregate or 100 lbs. of color quartz aggregate

**4 Inch 1 ½ Radius - Yield 65 Linear Feet**

**6 Inch 1 ½ Radius - Yield 50 Linear Feet**

Note: See **Crown Polymers Technical Bulletin: No. 16 Cove Base Gel**

## BENEFITS

- Complies with USDA, FDA, Food Safety Modernization Act. See **Crown Polymers Technical Bulletin: No. 3 Food and Beverage Compliance.**
- LEED® and Green Seal® requirements. See **Crown Polymers Technical Bulletin: No. 5 LEED and Green Seal Information.**
- VOC and EPA Compliant in all states and provinces in North America. Cures to an inert finish. See **Crown Polymers Technical Bulletin: No. 2 VOC Compliance**
- Chemical and Abrasion Resistance
- Designed for new floors and for resurfacing old floors

## LIMITATIONS

- This product is best suited for applications in temperatures between 60°F to 90°F (16°C to 32°C). Do not apply when Relative Humidity exceeds 85%. See Crown Polymers Technical Bulletin: No. 7 Temperature and Relative Humidity Limits
- Higher temperatures will result in shortened working time and faster drying time.
- Color may vary due to batch to batch variation, always “box” different batches to avoid it.

## COLORS

Clear, 15 Standard Colors\* and Custom Colors. Available in factory pigmentation or CrownPigment™ Epoxy No. 6300 PigmentPack™ \*See **Crown Polymers Standard Color Guide Acrylics, Epoxies, Polyaspartics, Polyurethanes (PigmentPack).**

## HANDLING AND SAFETY

Warning! Eye and skin irritant. May cause dermatitis and sensitization. Always read and follow the product SDS. Avoid contact with eyes, skin and clothing. Avoid breathing vapors, mist and spray. Use with good ventilation.

## CONCRETE

Concrete must be structurally sound and free of curing agents, coatings, sealers, densifiers and other bond breakers.

### New Concrete:

- Place concrete per ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Floor Materials.
- Water Cement Ratio 0.4 to 0.5, and an approximate 4,000 psi (28 MPa) strength level.
- Requiring a positive side moisture barrier in direct contact with the concrete meeting ASTM E1745
- Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- The moisture barrier needs to be placed per ASTM E1643 Standard Practice for Selection, Design, Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete

Slabs, Class A 15 mils (0.38mm)

### Existing Concrete:

If field tests or laboratory analysis reveals concrete flooring slabs contain contaminants from previously applied unreacted silicate materials, such as, sodium silicates, potassium silicates or lithium silicates that will interfere with the bond, use CrownPrime WB Primer No. 8201. See **Crown Polymers Technical Bulletin: No. 20 Selecting a Primer.**

- Contaminants include, but are not limited to, organic hydrocarbon materials, calcium chlorides, sodium silicates, potassium silicates, lithium silicates and aluminum stearates.
- Concrete flooring slabs can lose their structural strength over time, caused by conditions beyond the control of Crown Polymers and the installation contractor.
- If the concrete substrate deteriorates sufficiently, it will no longer support the bond of the remediation flooring system.

Such conditions are detailed in ACI 201.2R “Guide to Durable Concrete” published by the American Concrete Institute. See **Crown Polymers Technical Bulletin: No. 1 Concrete Surface Preparation.**

## CHEMICAL RESISTANCE DATA

See **Crown Polymers Technical Bulletin: No. 9 Chemical Resistance Guidelines and Chart.**

## CHECK CONCRETE MOISTURE

Concrete must be dry before application of this floor coating material. Concrete moisture tests are required, either ASTM F1869 (calcium chloride) or ASTM F2170 (in situ RH probe). Refer to appropriate Technical Data Sheet limits and **Crown Polymers Technical Bulletin: No. 6 Moisture Mitigation Negative Side Moisture Barrier.**

## CHECK TEMPERATURE AND HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet. Dew Point must be 5°F (3°F) or more below the surface temperature. Do not apply if humidity is at or above 90%. See **Crown Polymers Technical Bulletin: No. 7 Temperature and Relative Humidity Limits.**

## SURFACE PREPARATION

Surface preparation in accordance with: ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair. The pH of the concrete substrate should be at 9 or above. All bond-breaking material must be removed. See **Crown Polymers Technical Bulletin: No. 1 Concrete Surface Preparation.**

### Physical Properties at 77°F (25°C)

<b>VOC (Volatile Organic Compounds)</b> , (VOC Calculated Per ASTM D3960)	0 gr./lt.
<b>Standard Viscosity Clear</b> , Mixed Epoxy and Hardener	1250 cps
<b>Standard Viscosity Clear</b> , Mixed Epoxy and Hardener, at 50°F (10°C)	1900 cps
<b>Mix Density Clear</b> , Mixed Epoxy and Hardener	9.23 lbs./gal
<b>Pot Life, Standard Cure</b> , 1 gallon (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass and Temperature*	30 Minutes
<b>Pot Life, Fast Cure</b> , 1 gallon (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass and Temperature*	15 Minutes
*Pot Life is reduced by Increases in Temperature and increased by reductions in Temperature	
<b>Mix Ratio, by Volume</b>	2:1
<b>Dry to Touch</b> 40°F to 90°F (4°C to 32°C)	4 to 6 Hours
<b>Recoat Time</b> 40°F to 90°F (4°C to 32°C)	12 to 72 Hours
<b>Light Traffic</b> 40°F to 90°F (4°C to 32°C)	12 Hour Minimum
<b>Full Cure</b> 40°F to 90°F (4°C to 32°C)	4 to 14 Days
<b>Shelf Life</b> (shipped and stored) at 40°F to 100°F (4.4°C to 38°C)	1.5 Years
<b>Packaging</b> 1 ½, 3 and 15 gal. (5.7, 11.4 and 56.8 liters)	

### Mechanical Properties at 77°F (25°C)

#### Surface Preparation ICRI Guideline No. 310.2R

Concrete Surface Profile (CSP 2 and above) Depending on System to be Installed and Condition of Concrete.

<b>Compressive Strength, ASTM D695, 7 Days</b>	2,500 psi
<b>Tensile Strength, ASTM D638</b>	1,000 psi
<b>Tensile Elongation, ASTM D638</b>	60%
<b>Tensile Elongation, ASTM D412</b>	130%
<b>Tensile Shear Strength to Steel, ASTM D1002</b>	350 psi
<b>Adhesion, ASTM D7234, Concrete Failure</b>	>400 psi
<b>Hardness (Shore D) ASTM D2240</b>	55 - 60
<b>Water Absorption, ASTM D570 Resin &amp; Hardener</b>	0.1%
<b>Flame Test, ASTM E648</b>	Class 1
<b>Flammability, ASTM D635</b>	Self-Extinguishing Bonded to Concrete
<b>Abrasion Resistance, ASTM D4060 Resin &amp; Hardener 1,000 cycles, Wheel No. CS17, 1000 gr. Load</b>	0.04 gr.
<b>Coefficient of Thermal Expansion (-22°F to 86°F)</b>	1.8 X 10 <sup>-5</sup> in./in. °F
<b>Microbial (fungi) Resistance, ASTM G21 (Without the Anti-Microbial Agent)</b>	Pass #1
<b>Moisture Vapor Emission Rate, ASTM F1869*</b>	3 lbs.
<b>Moisture Relative Humidity, ASTM F2170*</b>	80% RH

\*If moisture or relative humidity exceeds the limits consult the Crown Polymers representative and refer to

**Crown Polymers Technical Bulletin: No. 6 Moisture Mitigation Negative Side Moisture Barrier**

Although testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or it is not functioning properly and/or concrete is contamination from oils, chemical spills, densifiers, excessive salts or other bond breakers.

## APPLICATION EQUIPMENT

Depending on system applied: Disposable 3" brush for cutting in, variable low speed drill (450 rpm) with Jiffy® type impeller mixing paddle, 3/8 inch nap non-shedding phenolic core roller and frame, and V-notched rubber squeegee.

## OPTIONAL ANTIMICROBIAL

The antimicrobial additive Silver® (sodium hydrogen zirconium phosphate) is a non-heavy metal biocide that can be added during the manufacturing process. (EPA Regulation Number 11631.2. and US Patent Number US 9,247,736 B2). The antimicrobial agent can be added to the top coat only for an economical application or it can be added to each step of the application, primer, body coat and top coat, which is recommended for abusive environments. See **Crown Polymers Technical Bulletin: No. 11 Understanding Silver® the Optional Antimicrobial Additive.**

## MIXING

For ease of mixing and placement, the temperature of the "A" and "B" components should be between 70°F to 80°F (21°C to 27°C). Pre-mix the "A" and "B" component to ensure all raw material and pigments are dispersed uniformly. Box pigmented products if using different batch numbers for uniformity of color. See **Crown Polymers Technical Bulletin: No. 10 Mixing Guidelines.**

## APPLICATION

After mixing all contents as instructed, immediately pour all liquid material on to the properly prepared concrete substrate or next epoxy lift in ribbons and squeegee the material out evenly. Back-roll and cross rolling of material is critical. Check for desired wet film thickness with a WFT Gauge. Place all steps per **Crown Polymer Installation Instruction.**

## SKID-RESISTANCE

Skid-Resistance – Field (in situ) Wet Dynamic Coefficient of Friction (DCOF), ANSI A326.3. See **Crown Polymers Technical Bulletin: No. 12 Wet Dynamic Coefficient of Friction.**

## CLEAN-UP

Clean-up mixing station, tools and equipment as required. Use acetone, a VOC exempt solvent, for clean-up. Observe all legal, and health and safety

## DISPOSAL

Dispose of empty packaging and other waste in accordance with federal, state, provinces and local regulations.

## MAINTENANCE

Inspect the installed floor by spot cleaning and spot repairing the damaged or cracked areas. To prolong life of the flooring system, a daily maintenance program is highly recommended to ensure the floor is safe for its intended purposes. See **Crown Polymers Technical Bulletin: No. 8 Care and Maintenance.**

## TECHNICAL SUPPORT

For questions, contact a Crown Polymers Representative.

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## LIMITED WARRANTY

Crown Polymers warrants its products to be free of manufacturing defects and meets all Crown Polymers current published physical properties. Crown Polymers' sole responsibility shall be to replace the portion of any product proved to be defective. There are no other warranties by Crown Polymers of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Crown Polymers shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Crown Polymers shall not be responsible for the use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee pertaining to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator will be issued. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

