

501 CrownFlex™ Semi-Rigid Paste Epoxy Joint/Crack Sealant

TECHNICAL DATA SHEET Product Number: 501

Semi-Rigid Epoxy Paste Static Joint Sealant and Crack Filler for Heavy Duty and Abrasive Traffic Commercial, Industrial and Institutional

DESCRIPTION

501 CrownFlex is a two-component, paste, 100% solids, semi-rigid modified paste epoxy 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 concrete joint edges and minimizing the deterioration of concrete joint/crack edge to impact. It is used for embedding detector wire loops for traffic signal, electric gates and robotics. 501 CrownFlex should be used to 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 in conjunction with 8502 CrownFlex membrane for waterproofing and crack dampening under epoxy coating and flooring systems. It is VOC Compliant in all states and provinces in North America.

TYPICAL USE

- Static Control Joint and Non-Moving Crack Filler
- Embedded detector wire loop for traffic signals, electric gates and Robotics
- Control Joint and Concrete Crack Filler
- Patching Vertical, Overhead and Horizontal Extended with Aggregate
- Patching Binder Extended with Aggregate

BENEFITS

- Complies with USDA, FDA, Food Safety Modernization Act. See Crown Polymers Technical Bulletin: 3 Food and Beverage Compliance.
- Slip Resistance (ADA) See Crown Polymers Technical Bulletin: 4 Coefficient of Friction.
- LEED® and Green Seal® requirements. See Crown Polymers Technical Bulletin: 5 LEED and Green Seal Information.
- 100% Solids, Zero VOC and EPA Compliant, and low odor during installation. Cures to an inert finish. See Crown Polymers Technical Bulletin: 2 VOC Compliance.
- Strong and Tough Floor.
- Strong 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).
- Scratches in certain colors may appear white, such as blue pigmented products.
- Higher temperatures will result in shortened working times and faster drying time.
- Color may vary due to batch-to-batch variation,

always “box” different batches to avoid it.

- Do not use as a primer when concrete slab exceeds 3 lbs. or 80% RH.

COLORS

Opaque and 12 Standard Colors* and Custom Colors. NOT Available in Safety Colors. Available in factory pigmentation or CrownPigment™ Epoxy 6300 PigmentPack™ *See Crown Polymers Standard Color Guide Acrylics, Epoxies, Polyaspartics, Polyurethanes (PigmentPack).

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 the earth or Granular Fill Under Concrete Slabs, Class A 15 mils (0.38 mm).

Existing Concrete:

- If field tests or laboratory analysis reveals inferior concrete flooring slabs containing contaminants from previously applied unreacted silicate materials that will interfere with the bond, use 8201 CrownPrime WBC Primer. See Crown Polymers Technical Bulletin: 20 Selecting a Primer.



- Contaminants include, but are not limited to organic, hydrocarbon materials, calcium chlorides, and aluminum stearates.
- Concrete flooring slab can lose their structural strength over time, caused by conditions beyond the control of the flooring manufacturer or the installation contractor.

- If the concrete substrate deteriorates sufficiently, it will no longer support the bond of the remediation floor system. Such conditions are detailed in ACI 201.2R “Guide to Durable Concrete” published by the American Concrete Institute. See Crown Polymers Technical Bulletin: 1 Concrete Surface Preparation.

COVERAGE RATES

Non-Moving Control Joint or Non-Moving Crack Sealant

- Installation coverage will vary with the application method, width, and depth of control joint to be filled. There are 231 cubic inches per gallon of 501 CrownFlex. (Theoretical coverage does not address wastage.)
- Optional Reinforcement Fiber Glass or Scrim Cloth for Dimensional Stability Recommended when Coating or Flooring System is intended to cover Control Joints or Cracks.

APPROXIMATE YIELD per GALLON (No Wastage)						
Width Per Inch	Depth Per Inch	Linear Feet Per Gal		Width Per Inch	Depth Per Inch	Linear Feet Per Gal
1/8	1/8	1200		1/2	1/8	300
1/8	1/4	600		1/2	1/4	150
1/8	1/2	300		1/2	1/2	75
1/8	3/4	200		1/2	3/4	50
1/8	1	150		1/2	1	37
1/4	1/8	600		1	1/8	150
1/4	1/4	300		1	1/4	75
1/4	1/2	150		1	1/2	37
1/4	3/4	100		1	3/4	25
1/4	1	75		1	1	19

Physical Properties at 77°F (25°C) Unless Otherwise Stated	
VOC (Volatile Organic Compounds) ASTM D3960	<5 gr./lt.
Viscosity, Mixed Epoxy and Hardener	Paste, Non-Sag
Pot Life, 1 gal (3.79 lts.) Mass (Pot Life is reduced when the Mass and/or Temperature is increased.	10 - 15 Minutes
Mix Ratio, by Volume	1:1
Minimum Application Temperature	50°F (10°C)
Dry to Touch 50°F to 90°F (10°C to 32°C)	4 to 10 Hours
Recoat Time 50°F to 90°F (10°C to 32°C)	12 to 72 Hours
Little Traffic 50°F to 90°F (10°C to 32°C)	12 Hours Minimum
Full Cure 50°F to 90°F (10°C to 32°C)	4 to 14 Days
Shelf Life (Shipping and Storage) 40°F to 100°F (4.4°C to 38°C)	1 Year
Packaging 2 and 10 kits (5.7 and 37.9 lts. kits)	



Mechanical Properties at 77°F (25°C) Unless Otherwise Stated

Surface Preparation ICRI Guideline No. 310.2R (CSP 2 to CSP 4), Depending on System being Installed and Concrete Condition.

	40°F (4.4°C)	77°F (25°C)	90°F (32°C)
Compressive Strength, ASTM D695, 1 Day	1,100 psi (7.9 mpa)	1,200 psi (8.3 mpa)	1,400 psi (9.7 mpa)
Compressive Strength, ASTM D695, 7 Days	2,100 psi (14.5 mpa)	2,200 psi (15.2 mpa)	2,200 psi (15.2 mpa)
Adhesion, ASTM D7234, 7 Days	245 psi (1.7 mpa)	270 psi (1.9 mpa)	280 psi (1.9 mpa)
Tensile Strength, ASTM D638			1,000 psi (6.9 mpa)
Tensile Elongation, ASTM D638			80 - 100%
Adhesion, ASTM D7234			>300 psi
Hardness (Shore D) ASTM D2240			35 - 40
Microbial (fungi) Resistance, ASTM G21 without an anti-microbial agent)			Pass < 1
Water Absorption Mixed Resin and Hardener, ASTM D570			0.6%
Moisture Vapor Emission Rate, ASTM F1869*			3 lbs.
Moisture Relative Humidity, ASTM F2170*			80% rh

*If moisture or relative humidity exceeds the test limits consult a Crown Polymers representative and refer to Crown Polymers Technical Bulletin 6 Moisture Mitigation Negative Side Moisture Barrier.

Note: Although testing is critical, it is not guaranteed against future Problems. This is especially true if there is not a positive side vapor barrier installed per ACI 302.2R and ASTM F1754. Concrete must be sound and durable per ACI 201.2R and be free of bond breaking properties and/or concrete contamination from oil, chemical spills, densifiers, excessive salts and other bond breakers.

CHEMICAL RESISTANCE DATA

See Crown Polymers Technical Bulletin: 9 Chemical Resistance Guidelines and Chart.

CHECK CONCRETE MOISTURE

The 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: 6 Moisture Mitigation Negative Side Moisture Barrier.

CHECK TEMPERATURE & HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet. Dew Point must be 5°F (3°C) or more below the surface temperature. Do not apply if humidity is at or above 95%. See Crown Polymers Technical Bulletin: 7 Temperature and Relative Humidity Limits.

SURFACE PREPARATION

Surface preparation following: 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

just be removed. See Crown Polymers Technical Bulletin: 1 Concrete Surface Preparation.

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 V-notched rubber squeegee for spreading neat epoxy and gauge rake or trowels for thicker applications.

OPTIONAL ANTIMICROBIAL

The antimicrobial additive is a non-heavy metal biocide that can be added during the manufacturing process. The antimicrobial agent can be added to the topcoat only for an economical application or it can be added to each step of the application, primer, body coat, and topcoat, which is recommended for abusive environments. See Crown Polymers Technical Bulletin: 11 Understanding 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 (20°C to 26°C). Pre-mix the "A" and "B" components to ensure all raw material and pigments are dispersed uniformly. See Crown Polymers Technical Bulletin: 10 Mixing Guidelines.

APPLICATION

After mixing all contents as instructed, immediately pour all liquid material onto the properly prepared concrete substrate, or next epoxy lift in ribbons and squeegee the material out evenly. Back-roll and cross rolling of material are critical for receiving coat, lock coat, grout coat, topcoat, and finish coat. Check for desired wet film thickness with a WFT Gauge. If broadcasting aggregate, broadcast into the wet material. Place trowel mortar mix within installation sequence. Place all steps per Crown Polymer Installation Guidelines.

SKID-RESISTANCE

Skid-Resistance – Field (in situ) Wet Dynamic Coefficient of Friction (DCOF), ANSI A326.3. See Crown Polymers Technical Bulletin: 4 Coefficient of Friction.

SHIPPING and STORAGE

Ship and store material between 40°F to 90°F (4°C to 32°C). Store in a dry environment and out of direct sunlight.

SHELF LIFE

Shelf life is 1 year from the date of manufacturer, provide the containers are unopened.

CLEAN-UP

Clean-up mixing station, tools, and equipment as required. Use acetone, a VOC exempt solvent, for cleaning up. Observe all legal, and health, and safety precautions when handling or storing solvents and materials, particularly in confined spaces. Make sure the working areas are well ventilated at all times during placement and curing time.

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: 8 Care and Maintenance.

TECHNICAL SUPPORT

For questions, contact a Crown Polymers Representative. Additional Support Documents are available from Crown Polymers, including brochures, application guidelines, videos and more. Visit Crownpolymers.com or contact Crown for additional resources.

DISCLAIMER

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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 merchant- ability 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.

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