

# 301 CrownShield<sup>®</sup> Epoxy Economical Thru-Product<sup>™</sup>

## TECHNICAL DATA SHEET Product Number: 301

Economical Clear Epoxy Thru-Product<sup>™</sup> - Primer, Body Coat, Binder and Top Coat

### DESCRIPTION

**301 CrownShield** is a two-component general purpose clear epoxy primer, coating, and flooring mortar binder for broadcast and hand troweled or power troweled systems. It is economical, low viscosity, low odor, 100% solids thermosetting epoxy. It's a general-purpose epoxy requiring upgraded topcoats and finish coats for superior chemical and abrasion resistance, such as 8320 CrownShield<sup>®</sup> Superior All-n-One Epoxy Thru-Product<sup>™</sup> or 8110 CrownSeal<sup>™</sup> CRU. for industrial kitchens, commercial laboratories, and wine and spirit processing facilities subjected to heavy foot traffic, forklift traffic and chemical exposure. It can be applied directly over 8303 CrownShield MVB (moisture mitigation primer). It is VOC Compliant in all states and provinces in North America.

### TYPICAL USES

- Automotive Show Room and Repair Floors
- Commercial Bakery and Kitchen Floors
- Hospital and Health Care Facility Floors
- Laboratory and Research Floors
- Manufacturing and Warehouse Floors
- Pharmaceutical Floors

\*Note: Use appropriate Top Coat and Finish Coat

### 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<sup>®</sup> and Green Seal<sup>®</sup> 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.
- 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

Only available in Clear. The clear product can be field pigmented with Epoxy PigmentPack<sup>™</sup> 6300 Series (15 Standard Colors). It is not available in factory pigmented colors. **\*See Crown Polymers Standard Color Guide Acrylics, Epoxies, Polyaspartics, Polyurethanes (PigmentPack).**

### COVERAGE RATE PER GALLON

- Primer: 160 to 200 sq. ft. (14.9 to 18.9 sq. m.) WFT 8 to 10 mils (0.20 to 0.25 mm)
- Coating: 100 to 160 sq. ft. (9.3 to 14.9 sq. m) WFT 10 to 16 mils (0.25 to 0.41 mm)
- Broadcast and Trowel: Varies Depending on the thickness of the system selected. 1/16 to 1/4 inch (1.59 to 6.35 mm) and more.

### 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 inferior concrete flooring slabs containing contaminants from previously applied unreacted silicate materials that will interfere with the bond, use 8201 CrownPrime WBC. **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 slabs 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.**

**CHEMICAL RESISTANCE DATA**

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

<b>Physical Properties at 77°F (25°C) (Unless otherwise stated)</b>	
VOC (Volatile Organic Compounds), (VOC Calculated Per ASTM D3960)	0 gr./lt.
Viscosity, Mixed Epoxy and Hardener	550 to 750 cps
Pot Life, gallon (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass & Temperature	20 Minutes
Mix Ratio, by Volume	2:1
Minimum Application Surface Temperature	60°F
Dry to Touch 60°F to 90°F (16°C to 32°F)	5 to 12 Hours
Recoat Time 60°F to 90°F (16°C to 32°F)	12 to 24 Hours
Light Traffic 60°F to 90°F (16°C to 32°F)	44 Hour Minimum
Full Cure 60°F to 90°F (16°C to 32°F)	7 to 14 Days
Shelf Life (shipped and stored) at 40°F to 100°F (4.4°C to 38°C)	1 Year
Packaging 1.5, 3, 15, and 150 gals. (5.7, 11.4, 56.8, and 567.8 liters)	

<b>Mechanical Properties at 77°F (25°C) 7 Day Cure (Unless otherwise stated)</b>	
Surface Preparation ICRI Guideline No. 310.2R Concrete Surface Profile (CSP 2 and above) Depending on System to be Installed and Condition of Concrete.	
Tensile Strength, ASTM D638	2300 psi
Tensile Elongation, ASTM D638	23%
Adhesion, ASTM D7234, Concrete Failure	>400 psi (concrete failure)
Hardness (Shore D) ASTM D2240	70-75
Water Absorption, ASTM D570 Resin & Hardener	0.15%
Abrasion Resistance, ASTM D4060 Resin & Hardener	0.026 gr.
500 cycles, Wheel No. CS17, 1000 gr. Load	Pass #1
Microbial (fungi) Resistance ASTM G21 (Without the Anti-Microbial Agent)	3 lbs.
Moisture Relative Humidity, ASTM F2170*	80% RH
*If moisture or relative humidity exceeds the limits consult the 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 a guarantee against future problems. This is especially true if there is no vapor barrier or it is not functioning properly and/or concrete has contamination from oils, chemical spills, densifiers, excessive salts or other bond breakers.

## 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: Moisture Mitigation Negative Side Moisture Barrier.**

## CHECK TEMPERATURE and HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet requirements. Dew point must be 5°F (3°C) or more below the surface temperature. Do not apply if humidity is at or above 85%. **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 must 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-rolling 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 Dynamic 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 manufacture, provided 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 following federal, state, province, and local regulations.

## MAINTENANCE

Inspect the installed floor by spot cleaning and spot repairing the damaged or cracked areas. To prolong the 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](http://Crownpolymers.com) or contact Crown for additional resources.

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#### DISCLAIMER

All technical bulletins, installation guidelines, guidelines, recommendations, statements, specifications, and technical data contained herein are based on information and tests. The accuracy and completeness of such tests are not guaranteed and are not to be construed as a warranty, expressed or implied. It is the responsibility of the user to document information and tests to determine the intent of the product for ones' use. The application, job conditions and user assume all risks and liability resulting from the use of the product. We do not suggest or guarantee any hazards listed herein are the only ones, which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss, or damage directly or indirectly resulting from use of, or inability to use the product. Recommendations or statements, whether written or verbal, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided to establish a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Crown Polymers does not claim that these tests or any other tests accurately represent all environments. Not responsible for any typographical errors.

#### 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. Also, no warranty or guarantee about 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 is also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective before any repairs by the owner, general contractor, or applicator.



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