

# CrownShield® 50

Product Description Sheet No. 320

## High-Build Epoxy Floor Coating and Epoxy Polymer Concrete for Commercial and Industrial Use

### Description

**CrownShield® 50**, Product No. 320 is a two-component straw (Clear) or pigmented epoxy floor coating or epoxy polymer concrete (EPC) when aggregate is added. It is a 100% solids, moisture-insensitive, non-shrink, nearly no odor during application.

### Application Methods

The mixed polymer may be applied as a neat coating, single or double broadcast system, slurry broadcast system, EPC hand troweled or power troweled.

### Use

Used in decorative, commercial, institutional and industrial applications where the toughest heavy-duty industrial and manufacturing floor environments exist.

### Benefits

This tough and dense beautiful pigmented seamless polymer overlay wear surfaces are easy to maintain. They require no waxing. They become a monolithic part of the concrete increasing their durability and life cycle. They can provide different appearances from smooth to aggressive textures, solid colors, random flaked or attractive patterns of colors and shapes. They are designed for a variety of environmental exposures.

### Advantages

- Complies with USDA, FDA, OSHA, ADA and LEED® “Green” requirements
- Great working time
- No VOC’s – 100% solids formula
- Moisture-insensitive formula
- Cures down to 50°F (10°C)
- Excellent strength properties
- Excellent impact resistant

### Typical Coverage

Neat Base Coat: 8-10 Mills (130-150 ft<sup>2</sup> / Gal. - Depending on porosity of substrate)

Neat Top Coat: 10 Mills (160 ft<sup>2</sup> / Gal.)

Refer to typical application coverage chart.

### Typical Data for CrownShield 50

Material and curing conditions at 73°F (23°C), 50% R.H unless noted.

**COLOR** 10 Standard Colors **VISCOSITY** 550 – 750 cps.

**MIX RATIO BY VOLUME** Comp “A” 2 to Comp “B” 1

**POTLIFE** 5-35 minutes **CONSISTENCY** Nearly Self-Leveling

#### TACK-FREE TIME

| Substrate Temperature | 50°F *    | 73°F    | 90°F    |
|-----------------------|-----------|---------|---------|
|                       | 10–12 hrs | 6–8 hrs | 5–7 hrs |

#### TENSILE PROPERTIES (ASTM D638) 7 days

Tensile Strength 8,800 psi

Elongation at Break 5 %

#### FLEXURAL PROPERTIES (ASTM D790) 7 days

Flexural Strength 16,000 psi

Tangent Modulus of Elasticity 510,000 psi

#### SLANT SHEAR STRENGTH (ASTM C882) 7 days

| Test Temperature | Value     | Mode of Failure       |
|------------------|-----------|-----------------------|
| 50°F             | 4,000 psi | 100% Concrete Failure |
| 90°F             | 4,200 psi | 100% Concrete Failure |

#### COMPRESSIVE STRENGTH (ASTM D695) Neat Polymer

|        | 50°F *     | 73°F       | 90°F       |
|--------|------------|------------|------------|
| 8 hour | 3,700 psi  | 6,300 psi  | 10,300 psi |
| 1 day  | 10,100 psi | 10,200 psi | 10,300 psi |
| 7 days | 14,100 psi | 14,200 psi | 14,200 psi |

#### COMPRESSIVE STRENGTH (ASTM C579) 7 days

EPC 11,500 psi

#### HARDNESS (INDENTATION - ASTM D2240)

Neat Epoxy, 7 day cure, Durometer, Shore D 80

#### INDENTATION (LOAD - MIL-D-3134, Para. 4.7.4.2.1)

EPC, 7 day cure, Method: 1 in. diameter steel ram steadily applies a load of 2,000 lbs. for 30 min. on the test specimen that is placed on concrete. Value - 0.004 in. indentation

#### INDENTATION (IMPACT - MIL-D-3134, Para. 4.7.3)

EPC, 7 day cure, Method: 2 lb. steel ball is dropped twice from a 8 ft. height. Value - 0.012 in. indentation

#### ADHESION TO CONCRETE (TENSILE PULL - ACI 503 R)

EPC, 7 day cure, - 410 psi, 100% concrete failure

#### ABRASION RESISTANCE (TABER - ASTM D 4060) EPC,

7 day cure, 1,000 cycles, 1,000 g. load, Wheel No. 17, Loss 0.051 g

#### WATER ABSORPTION (ASTM D 570)

EPC, 7 day cure, max. 0.15%

#### COEFFICIENT OF THERMAL EXPANSION (ASTM D696)

Temperature Range -30°C (-22°F) / 30°C (86°F)

7 days 18.0 X 10<sup>-6</sup> in / in./°F

#### FLAMMABILITY (ASTM D635)

EPC, 7 day cure, self-extinguishing

#### SHELF LIFE

1.5 years in original unopened containers

#### PACKAGING

3, 5, 15, 150 - Gal/Units

## How to Apply CrownShield® 50

### Surface Preparation

Concrete and other substrates must be clean, sound, and free of dust, grease, waxes, coatings, curing compounds and all contaminants. Typical removal methods include dust-free abrasive shot blasting. Clean the substrate to the desired surface profile for the overlay system selected. Follow the Crown Polymer Surface Preparation Guide for best results.

### Test Substrate For Cleanliness and Adhesion

Before placement of the polymer overlay, test the cleaned concrete substrate for soundness and cleanliness with a Tensile Pull Test ACI 503 R (min.200 psi) or Crown Polymers Surface Shear Test. 100% concrete must fail to pass either test without bond line failure.

### Preconditioning Polymer

When temperatures drop, polymers typically thicken and it becomes harder to flow or to spread the product. When the temperatures are warmer, they typically become thinner. To improve product flow-ability maintain product temperature before mixing at about 20°C (73°F). When the substrate temperature is lower than 10°C (50°F) change product for proper curability, and preheat each epoxy component to 32°C (90°F) before mixing. Caution the pot life will be reduced by about 50%. It may be necessary to reduce the mixed volume quantity of the batch.

### Mixing

Pre-mix Component "A", (when pigmented) then pour Component "B" into "A" and mix for approximately 90 seconds (until one even colors develops) with a low speed paddle attached to a drill (400-600 rpm). The mixed product is ready for immediate placement.

### Coverage

Product coverage is depended upon the existing substrate surface profile and thickness of the designed system. Refer to Crown Polymers Application Method Guide and Specifications.

### Application Methods

Refer to Crown Polymers Application Method Guide and Specifications.

### Limitations

- Substrate temperature must be 3°C or 5°F above measured dew point temperature.
- Minimum application substrate temperature is 10°C (50°F).
- **DO NOT APPLY on a WET SUBSTRATE.**
- **DO NOT THIN** - solvents could prevent proper cure.
- Aggregate must be dry when used.
- Pre-condition polymer as needed.
- Withstands vapor pressure up to 3 lbs/1,000 ft<sup>2</sup>. Request data.
- Applied the next polymer lift within 24 hours if the ambient temperature is below 85°F and 18 hours if above 85°F.

**FOR INDUSTRIAL USE ONLY  
KEEP OUT OF REACH OF  
CHILDREN  
KEEP CONTAINERS TIGHTLY  
CLOSED**

### Maintenance

For maximum life expectancy, routinely sweep and wash floors with appropriate cleaners and detergents. All chemicals or abrasive grit should be removed as soon as possible.

### Caution

#### Component "A" - Irritant

Contains epoxy resins. Prolonged contact with skin may cause irritation. Avoid contact with eyes.

#### Component "B" - Corrosive

Contact with skin may cause severe burns. Avoid eye contact. The product is a strong sensitizer. Contains cycloaliphatic amines.

### Important Information

Use safety goggles and chemical-resistant gloves. NIOSH/OSHA approved respirator, and adequate ventilation is recommended when in a confined air space.

### Clean Up

In case of spills wear suitable protective equipment, contain spill, and collect with absorbent material, place in suitable container. Ventilate area. Avoid contact. Dispose according to applicable local, state, and federal regulations.

### First Aid

In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes. For respiratory problems, remove person to fresh air. Contact Physician Immediately. Wash clothing before re-use.

Consult Safety Data Sheet for More Information before use.

LIMITED WARRANTY - "Crown Polymers Corp. warrants its products to be free of manufacturing defects, to be of good quality, and that they will meet Crown Polymers current physical published properties when applied in accordance with Crown Polymers written directions and tested in accordance with ACI, ASTM and Crown Polymers Standards. Product proved to be defective will be replaced. **There are no other warranties by Crown Polymers Corp. 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 Corp. 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, from any other cause whatsoever. Crown Polymers will not be responsible for use of this product in a manner to infringe on any patent held by others."

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