

# CrownPro<sup>®</sup> EPC TempShield

Product Description Sheet No. 356

## A Heat Resistant Protective Floor System for Industrial Floors and Secondary Containment Areas

### Description

**CrownPro™EPC TempShield**, Product No. 356 is a 100% solid, 100% reactive, moisture-insensitive, non-shrink, two-component, modified Novolac Epoxy designed as an Epoxy Polymer Concrete (EPC) that adheres and cures on dry and moist concrete surfaces.

### Advantages

- Excellent Working Time
- Applied as Troweled or Broadcast System
- Excellent Chemical Resistance & Fast Cure
- Applicable and Curable to 5°C (40°F)
- Excellent Physical Strength Properties
- 100% Solids, No VOC's
- Nearly No Odor During Application
- USDA and FDA Compliance

### Where to Use

Use an Anti-Corrosive Protective Heat Resistant Floor Overlay, Patch and Grout for:

- Concrete Floors and Slabs
- Interior or Exterior
- Heavy Traffic Areas
- Areas Exposed to Hot Water Spills
- Continuous Immersion or Dry to 232°C (450°F)
- Wet Thermal-Cycling Exposures to 149°C (300°F)
- Secondary Containment Areas

### Packaging (Code)

4 1-Gal/Unit (E), 5 Gal/Unit (M)

### Shelf Life

2 years in original unopened containers

### Typical Data for CrownPro EPC TempShield

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

|                       |                           |             |             |
|-----------------------|---------------------------|-------------|-------------|
| <b>COLOR</b>          | Pigmented                 |             |             |
| <b>VISCOSITY</b>      | 1,400 - 2,800 MPa.s (cps) |             |             |
| <b>POTLIFE</b>        | 18-25 minutes             |             |             |
| <b>CONSISTENCY</b>    | Liquid                    |             |             |
| <b>TACK-FREE TIME</b> |                           |             |             |
| Substrate Temperature | 5°C (40°F)                | 23°C (73°F) | 32°C (90°F) |
|                       | 12-14 hrs.                | 6-8 hrs.    | 4-6 hrs.    |

|                                       |   |  |
|---------------------------------------|---|--|
| <b>TENSILE PROPERTIES (ASTM D638)</b> | 7 Days  |  |
| Tensile Strength, MPa (psi)           | 58.5 (8,500)                                    |  |
| Elongation at Break, %                | > 4.0   |  |
| Modulus of Elasticity, MPa (psi)      | 26.9 X 10 <sup>5</sup> (3.9 X 10 <sup>5</sup> ) |  |

|  |   |  |
|--|---|--|
| <b>FLEXURAL PROPERTIES (ASTM D790)</b> | 7 Days  |  |
| Flexural Strength, MPa (psi)           | 92.2 (14,100)                                   |  |
| Modulus of Elasticity, MPa (psi)       | 38.6 X 10 <sup>5</sup> (5.6 X 10 <sup>5</sup> ) |  |

|   |                  |                       |
|---|------------------|-----------------------|
| <b>SLANT SHEAR STRENGTH (ASTM C882)</b> | 7 Days           |                       |
| Test Temperature                        | Value, MPa (psi) | Mode of Failure       |
| 23°C (73°F)                             | 37.75 (4,750)    | 100% Concrete Failure |

|   |   |  |
|---|---|--|
| <b>COMPRESSIVE STRENGTH (ASTM D695)</b> | 7 Days  |  |
| Compressive Strength, MPa (psi)         | 84.8 (12,300)                                   |  |
| Compressive Modulus, MPa (psi)          | 26.9 X 10 <sup>5</sup> (3.9 X 10 <sup>5</sup> ) |  |

|   |               |  |
|---|---------------|--|
| <b>COMPRESSIVE STRENGTH (ASTM C579)</b> | 7 Days        |  |
| Compressive Strength, MPa (psi)         | 81.6 (12,000) |  |

**INDENTATION (LOAD)**  
EPC, 7 Day Cure, MIL-D-3134, Para.4.7.4.2.1  
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 – 0.005 in. indentation

**INDENTATION (IMPACT)**  
EPC, 7 Day Cure, MIL-D-3134, Para.4.7.3  
Method: 2 lb steel ball is dropped twice from a 8 ft. height. Value – 0.011 in. indentation

**HARDNESS** - Shore D (ASTM D2240) 7 Days 80

**ADHESION TO CONCRETE (TENSILE PULL)**  
EPC, 7 Day Cure, ACI 503 R, - 350 psi, 100% concrete failure

**WATER ABSORPTION (ASTM D570) 24 Hours** 0.18%

**ABRASION RESISTANCE, WEIGHT LOSS (ASTM D4060)**  
1,000 cycles with Wheel No.10, grams 0.051

**COLORS** 10 Standard Colors

### LIMITATIONS

- Usable to 232°C (450°F) Dry Heat Exposure
- Usable to 149°C (300°F) Wet / Dry Heat Exposure

# How to Apply CrownPro EPC TempShield

## Surface Preparation

Concrete substrate must be clean, sound, and dry. Remove dust, grease, waxes, and coatings, curing compounds and all contaminants by mechanical means such as bush hammering and/or abrasive blasting. Abrasive blast all metal surfaces to white metal for best adhesion. Apply EPC before flash rusting develops or the cleaned concrete becomes contaminated.

## Test Substrate For Cleanliness and Adhesion

Before placement of the Epoxy Polymer Concrete, check the concrete for soundness and cleanliness with a Tensile Pull Test (ACI 503 R) or Shear Test. 100% concrete must fail to pass either test.

## Preconditioning Polymer

When temperatures drop, it becomes harder to flow the epoxy than when the temperatures are warmer. To improve the flow-ability at lower temperatures preheat each epoxy component to 90°F(32°C) before mixing. Caution the pot life will be reduced by about 50%.

## Mixing Epoxy

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

## Mixing EPC

Pour the mixed epoxy into a clean 5 gal pail and slowly add the aggregate and mix until uniformly blended, about 4 minutes. For larger batches pour the mixed epoxy into a concrete mixer, add the aggregate into the mixer, and blend for about the same amount of time. Use only a clean and dry mixing vessel.

**Note:** When a mixer is used, reduce 5-10 lbs. (2.2-4.5 kg) of aggregate to allow the mixer drum surfaces to wet out on the first batch.

## EPC Prime Coat

Prime the concrete surface with neat mixed epoxy. Typical rate of application is 1gal/160 ft<sup>2</sup> (0.25L/m<sup>2</sup>). The prime coat, Neat Epoxy (no aggregate added to the mixed Epoxy) must be tacky during placement of the EPC.

## Placement of EPC

Pour the mixed EPC onto the surface, spread evenly and compact to help eliminate air entrapment. Screed or trowel to create the desired surface profile. Top Coat may be required. Mechanical compact is required as part of the placement of larger aggregate filled patching EPC mixes.

## Placement as a Broadcast System

Follow "Double Broadcast & Top Coat Guide, AM6" instructions.

## Typical Coverage Rate

**EPC 1 ft<sup>3</sup> Mix:** 2 Gallons (7.7 L) Product No.356 blended with 110 lbs. (50 kg.). SP601 Silica Sand. Different aggregate will change epoxy quantity.

## Double Broadcast & Top Coat 1/16 to 1/8 in. Method:

**Base Coat** apply 1 gallon / 80 ft<sup>2</sup> (0.5 L/M<sup>2</sup>) and Broadcast Silica Sand SP 604, at rate of 0.5 –1.0 lbs. / ft<sup>2</sup> (2.4 – 4.8 kg/m<sup>2</sup>).

**Second Coat** apply 1 gallon / 80 ft<sup>2</sup> (0.5 L/M<sup>2</sup>) and Broadcast Silica Sand SP 604, at rate of 0.5- 1.0 lbs. / ft<sup>2</sup> (2.4 – 4.8 kg/m<sup>2</sup>).

**Top Coat** apply 1 gallon / 100-160 ft<sup>2</sup> (0.25-0.4/L/M<sup>2</sup>) depending on surface profile desired.

## Caution

### Component "A"- Irritant

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

### Component "B" - Corrosive

Contains aliphatic/cycloaliphatic amines. Contact with skin may cause severe burns. Avoid eye contact. Product is a strong sensitizer

### Component "C"

When used as an EPC - Contains silica sand. Avoid breathing product.

## Important Information

Use of safety goggles, chemical-resistant gloves, adequate ventilation and NIOSH/OSHA approved respirator is recommended.

## 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 Material Safety Data Sheet for More Information

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

LIMITED WARRANTY - "Crown Polymers, LLC warrants its products to be free of manufacturing defects, to be of good quality, and that they will meet Crown Polymers current published physical 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, LLC 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, LLC 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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