

CrownShield[®] 28

Product Description Sheet No. 322

Epoxy Floor Coating and Epoxy Polymer Concrete Overlay for Cold Substrate Applications down to 28⁰F (-2⁰C)

Description

CrownShield[®] 28, Product No. 322 is a two-component pigmented modified epoxy floor coating or epoxy polymer concrete (EPC) when aggregate is added. It is a 100% solids, moisture-insensitive, non-shrink, with a medium odor during application. The same polymer is used as the base and topcoat.

Application Methods

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

Use

Used in commercial, institutional, industrial and civil engineering applications where the toughest heavy-duty environments exist with cold substrate temperatures during application.

Benefits

CrownShield 28 becomes tack-free at 28⁰F (-2⁰C) substrate temperature in thin, 10 mil coating thickness in 10 to 12 hours. The tough and dense seamless polymer overlay wear surfaces are designed for the toughest manufacturing uses. The overlays become a monolithic part of the concrete increasing their durability and life cycle. They can provide different surface appearances from smooth to aggressive textures in solid colors. It cures down to 28⁰F (-2⁰C).

Advantages

- Complies with USDA, FDA, OSHA, ADA and LEED[®] "Green" requirements
- Great working time
- Low temperature workability down to 28⁰F
- No VOC's – 100% solids formula
- Moisture-insensitive formula
- Excellent strength properties
- Excellent impact resistant
- Pedestrian and vehicular use

Typical Coverage

Neat Base Coat: 10 Mills (160ft² / Gal.)
Neat Top Coat: 10 Mills (160 ft² / Gal.)

Refer to typical application coverage chart for other applications and thickness.

Typical Data for CrownShield 28

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

COLOR 10 Standard Colors **VISCOSITY** 500 – 750 cps.

MIX RATIO BY VOLUME Comp "A" 4 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 10⁻⁶ 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® 28

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 5°C (40°F) or lower, 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.

Customer Satisfaction

Apply the entire overlay system to a test area to ensure that the application meets the customer's expectations or provide a sample for written approval before starting work.

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 neat mixed product is ready for immediate placement. When making an EPC slowly add aggregate to mixed epoxy and blend until a homogenous batch has developed. Place immediately.

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 -2°C (28°F).
- **DO NOT APPLY on a WET, FROST OR ICED SUBSTRATE.**
- **DO NOT THIN** - solvents could prevent proper cure.
- Aggregate must be dry when used.
- Pre-condition polymer as recommended for cold use.
- Applied the next polymer lift within 24 hours if the ambient temperature is below 85°F and 18 hours if above 85°F.
- Withstands vapor pressure up to 3 lbs/1,000 ft². Request data.

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 aliphatic 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 Material Safety Data Sheet for More Information before use.

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 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, 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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