

FLEXGARD T

PRODUCT #309

A Polymer Concrete Overlay Wear Surface for Ramps, Bridge Decks, Industrial Floors and Commercial Kitchens

PRODUCT DESCRIPTION

309 FlexGard T was designed to provide high strength in thin overlays. Typical overlay thickness ranges between 1/8" and 3/8".

309 FlexGard T is an extremely versatile product and may be applied over Thermal-Chem's **309 FlexGard M** where a flexible membrane is required or over Thermal-Chem EPIC system where concrete strengthening and crack control is required.

309 FlexGard T is a two-component 100% solids, low-modulus (30% to 40% elongation) moisture insensitive epoxy polymer. **309 FlexGard T** may be applied as a seeded broadcast system, blended with selected aggregates for a trowel applied epoxy mortar overlay or as a slurry with an optional broadcast.

309 FlexGard T is formulated for interior or exterior use and possesses excellent impact resistance and wearability, even when exposed to steel wheels carts of high speed bridge traffic. Formulated to meet VOC regulations, **309 FlexGard T** may be applied above 40°F (5°C).

USES

Typical overlay uses for **309 FlexGard T** include bridge decks, ramps, loading docks, industrial floors, commercial kitchens, worn and polished concrete on elevated or slab-on-grade surfaces, when these conditions are present:

- Concrete with a chloride content at the top mat of rebar of less than 1.2 kg/m³ (2 lb/yd³)
- Rebar with less than 5 cm (2 in) of concrete cover
- High permeability concretes

- Concretes that have need of, or have been, extensively patched
- Extensively cracked concrete
- Concretes with micro-cracks in cover over rebar
- Concretes with low bald tire skid numbers, typically less than 25
- Where high strength, low modulus material is preferred over high modulus material.
- Conditions where rapid thermal cycling are present. ie commercial kitchens
- Industrial kitchens using wash down water of less than 150°F

TYPICAL PHYSICAL PROPERTIES

309 FlexGard T

Typical Physical Properties at 77°F (23°C)

Neat Epoxy

Mixing Ratio		2 to 1 Volume
Viscosity, A+B mixed	ASTM D2393	10 to 25 poises
Potlife, neat	ASTM C881	20 to 30 minutes
Gel Time, 60g. mass	ASTM C881	20 to 25 minutes
Tensile Strength	ASTM D638	2,000 psi min.
Tensile Elongation, %	ASTM D638	30 - 40%
Modulus of Elasticity	ASTM D638	4-8 x 10 ² MPa

Epoxy Polymer Concrete

Bond Strength, psi	ASTM C882	1,450 psi min.
Water Absorption	ASTM D570	0.6 max.
Ash Content	ASTM D482	0.5 max.
Compressive Strength	ASTM C579	
	4 hrs.	1,000 psi min.
	24 hrs.	4,000 psi min.
	7 days	5,000 psi min.
Modulus of Elasticity	ASTM C579	0.6-1.0 x 10 ³ MPa
Flexural Strength	ASTM C580	2,000 psi min.
Thermal Compatibility	ASTM C884	
	5 cycles	Passes
Coefficient of Thermal Linear Expansion	ASTM D696	5-9 x 10 ⁵ Mm/mm/°C
Adhesive Strength	ACI 503R Appendix A	
	24 hrs.	250 psi.

ADVANTAGES

- Useable on bridge decks and slab-on-grade concrete pavements
- No offensive odors during installation
- Prevents infiltration of chloride ions and water
- Available in various textures
- Useable within hours after placement
- Extends concrete life-cycle
- An initial cost effective, corrective and protective system
- Low life-cycle cost
- Repairable
- Volume mix ratio: 2:1

LIMITATIONS

- Will discolor if used as a topcoat and exposed to sunlight
- Do not install **309 FlexGard T** on wet surfaces (i.e., in the presence of standing water)
- Minimum cure temperature: 40° F (5° C)
- Do not thin EPC with solvents

COLOR and TEXTURES

- Available in ten (10) colors.
- A variety of anti-skid textures can be achieved by utilizing different aggregate shapes and sizes and varying the thickness of topcoat material.

COMPLIANCE

- ACI 548 Epoxy Polymer Concrete Broadcast Overlays
- AASHTO-AGC-ARTBA, Task Force 34, Epoxy Polymer Concrete Overlay Specifications
- ASTM C881
 - Type III; Grade 2; Classes B and C

AGGREGATE SELECTION

Particle shapes, as well as gradation, are important factors in developing a balanced mix that will properly wear and chemically protect the concrete. Larger aggregates may be added to the epoxy mixture for composite mix designs and surface profiling. Subangular silica or aggregates are recommended for EPC's. Low void content in the sand mixture will require less epoxy resin. All aggregates must be clean and dry. Consult with a Thermal-Chem representative or Thermal-Chem Corporation for factory approved EPC formulations.

PRODUCT APPLICATION

309 FlexGard T EPC overlays are easily installed by professional contractors and DOT maintenance crews. Refer to Thermal-Chem's System **Installation Guide – Broadcast Industrial Kitchen Flooring System or System Installation Guide – Broadcast Parking Garage.**

PRODUCT AVAILABILITY

Products are manufactured and available through the Thermal-Chem Corporation, 2120 Roberts Drive, Broadview, IL 60155 U.S.A.
Tel: 800/635-3773 ▪ 847/288-9090
Fax: 847/288-9091
E-mail: sales@thermalchem.com
Website: www.thermalchem.com

TECHNICAL/SPECIFICATION SERVICES

Additional Product Data, complete Technical Support and Product Specifications are all available through Thermal-Chem Corporation; or their local representatives.

Every reasonable precaution and effort has been taken in the manufacturer of all Thermal-Chem products to comply with the published product data. Actual product performance may vary slightly due to environmental influences and/or conditions.

PRODUCT HANDLING

Read the Material Safety Data Sheet thoroughly before use.

Warning: For professional use only. Avoid contact of uncured material with skin and eyes. Contact with skin may result in irritation. Wash skin with soap and water. If contact with eyes should occur, flush with water for 15 minutes and seek immediate medical attention.

LIMITED WARRANTY

Thermal-Chem Corporation warrants its product to be of good quality and will, at Thermal-Chem's sole discretion, replace or refund the original purchase price (if payment was made in accordance with Thermal-Chem's payment and credit terms) of any product proved defective or non-conforming. Satisfactory results depend not only upon quality products but also upon many factors beyond our control. **THE PARTIES AGREE THAT THE REPLACEMENT OR REFUND OF PRODUCT PAYMENT FOR DEFECTIVE PRODUCT OR NON-CONFORMING GOODS IS THE SOLE AND EXCLUSIVE REMEDY.** Therefore, except for such replacement, **THERMAL-CHEM CORP. MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS,** and Thermal-Chem Corporation shall have no other liability with respect thereto, including without limitation, liability for incidental or consequential damages. Any claim regarding product defect must be received in writing within ninety (90) days from the date of shipment. No claim will be considered without such written notice or after the specified time interval. The user shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith.