

# THERMAL-CHEM BONDER PRODUCT 4

Adhesive for Bonding Concrete to Other Substrates

## PRODUCT NAME and DESCRIPTION

Thermal-Chem Bonder, Product 4, is a two-component, 100% solids epoxy system designed for use as an adhesive on dry or moist cured concrete surfaces for bonding concrete to other substrates such as steel, wood, brick, masonry, and many other structurally sound materials.

## PRODUCT USES

This structural adhesive is used to bond and waterproof pre-cast concrete modules together, bond brick to steel, bond tiles to concrete and to other substrates, repair vertical or overhead spalls, bolt and anchor grout, and to seal the surface of cracks before injecting Thermal-Chem Injection Resin.

## ADVANTAGES

- Available in two (2) cures
- When cured, its physical properties are compatible with concrete
- Paste consistency; non-sag to 1/8"
- Excellent adhesion to concrete
- Sand may be added to extend coverage

## LIMITATIONS

- Do not thin with solvents

## TYPICAL PHYSICAL PROPERTIES

Form: Medium paste viscosity

Typical Density, @ 77°F (25°C), lbs./gals.

	Rapid Cure	Normal Cure
Component "A"	11.50 ± 1	11.55 ± .1
Component "B"	10.65 ± 1	10.65 ± .1
Mixed	11.35 ± 1	11.15 ± .1

## Typical Properties of Cured Bonder

Compressive Ultimate strength, ASTM D695:

Neat Material Cure	Rapid Cure	Normal
6hrs. 100°F (38°C)	---	10,000 psi
7days 100°F (38°C)	---	12,000 psi
6hrs. 77°F (25°C)	---	9,500 psi
7days 77°F (25°C)	---	11,400 psi
6hrs. 68°F (20°C)	10,500 psi	10,400 psi
7days 68°F (20°C)	11,500 psi	11,200 psi
6hrs. 45°F (8°C)	8,400 psi	---
7days 45°F (8°C)	11,400 psi	---
12hrs. 32°F (0°C)	5,400 psi	---
7days 32°F (0°C)	11,500 psi	---
18hrs. 25°F (-4°C)	3,200 psi	---
24hrs. 25°F (-4°C)	6,300 psi	---
7days 25°F (-4°C)	11,400 psi	---

Tensile Strength, ASTM D638:

Neat Material, 77°F (25° C)	Rapid & Normal Cure
Rupture Stress	6,900 psi
Tangent modules of elasticity	200,000psi
Elongation, percent	2.5

Flexural Strengths, ASTM D790:

Neat Material, 77°F (25°F)	Rapid & Normal Cure
Modules of rupture	23,000 psi
Tangent modules of elasticity	420,000 psi

Percent of Solids: 100

Hardness, Shore D: 85

COMPLIANCE: AASHTO M 235-86

Type I, Grades 2 or 3,  
Normal Cure - Classes B or C  
Rapid Cure - Classes A, B or C

COMPLIANCE: ASTM C 881-90

Type IV & VI, Grades 2 or 3  
Normal Cure - Classes B or C  
Rapid Cure - Classes A, B or C

## APPLICATION

**Surface Preparation:** Surface must be clean and sound. Remove all curing compounds, dust, waxes, foreign particles and laitance. Methods of removing above contaminants may include sandblasting, high-pressure water blasting, sanding or grinding.

**Equipment:** Hand towels, rubber gloves, brooms, rollers, caulking guns, pressure guns and fiber brushes all may be used to apply the bonder.

**Mixing Procedures:** Stir both components individually until evenly blended. Add Component "B" to "A" and blend until one even color develops. When temperature are 50°F (10°C) or lower, preheat both components individually with an indirect source of heat to approximately 70°F (20°C) before blending together.

**Application:** Apply sufficient amounts of Bonder to both surfaces so that when the modules are pressed together a small amount of excess bonder is forced out of the joint area evenly. If no bonder is forced out of joint area, immediately pull apart the two modules and apply more bonder and repress units together. If gel stage is starting, remove all the bonder and re-apply new material. Bonder qualities will depend on porosity of the concrete.

**Joint Width:** For areas to be filled over 1/8" (.125") the addition of silica sand to the premix bonder will provide an excellent grout and adhesive system. Up to one gallon of sand may be added to one gallon of pre-mixed bonder.

**Preheating of the Substrate:** Preheating of the substrate is not necessary even in a freezer unit or during winter applications.

**Clean-Up:** All tools must be immersed or closed with mineral spirits, toluene, MEK or xylene before curing occurs.

## PRODUCT CURES, COLORS and SIZE

Products are manufactured and available through Thermal-Chem Corporation. Thermal-Chem Bonder is available in the following cures, colors, and sizes:

Sizes: 1 gallon unit, 4-1 gallon/case, 1 cartridge unit, 15 cartridge/case and five gallon pails.

Color: Concrete Gray (CF)

Cure: Normal or Rapid

To order, specify product name, number, cure, color, container size and quantity.

## STORAGE

All Thermal-Chem products should be stored elevated from the floor on pallets, in an environment that maintains a constant temperature above 36°F (2°C). Do not allow Thermal-Chem products to freeze.

## 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 or 847/288-9090

Fax: 847/288-9091

E-Mail: [sales@thermalchem.com](mailto:sales@thermalchem.com)

Web Site: [www.thermalchem.com](http://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 replace any product proved defective. Satisfactory results depend not only upon quality products but also upon many factors beyond our control. 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 one hundred and eighty (180) 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.