

## MORTAR RESIN PRODUCT #M3

An EPC Patching and Grouting System

### PRODUCT DESCRIPTION

Thermal-Chem's **Mortar Resin M3** is a three-component (Part A Resin, Part B Hardener, Part C Aggregate) medium modulus (14 to 16%), 100% solids, 100% reactive, non-shrink epoxy polymer. It has been formulated in two cures:

- Normal - for applications in warmer temperatures
- Rapid - for applications in cold temperatures or where fast cure is a requirement.

Blended with selected aggregates, **Mortar Resin M3** creates an epoxy polymer concrete and was designed primarily as a concrete patching material.

**Mortar Resin M3** may be applied on moist or dry surfaces at temperatures above 33°F (rapid cure) and 50°F (normal cure) and up to 140°F.

Formulated for both interior and exterior use, **Mortar Resin** meets VOC compliance and is USDA approved.

### USES

The adhesive properties of this unique formulation provide both chemical and mechanical adhesion creating a monolithic design between the epoxy and the concrete substrate. Structural repairs on concrete highways, runways, bridge decks, slabs, curbing, sidewalks, steps, driveway, pre-cast and pre-stressed concrete are easily accomplished during either normal or adverse application conditions.

And where the following qualities are required:

- Concrete with a chloride content at the top mat or rebar of less than 1.2 kg/m<sup>3</sup> (2 lb/yd<sup>3</sup>)
- Rebar with less than 5 cm (2 in.) of concrete cover
- High permeability concrete
- Concrete that needs, or has been extensively patched

- Extensively cracked concrete
- Concrete with micro-cracks in cover over rebar
- Concrete with low bald tire skid numbers, typically less than 25

### AGGREGATE SELECTION

Particle shape and gradation are important factors in developing a balanced mix that will properly wear. Larger aggregates may be added to the epoxy mixture for holes on horizontal surfaces. Sub-angular silica or quartz sand is recommended for epoxy sand mortars. Low void content in the sand mixture will require less epoxy resin. All aggregates must be clean and dry. Consult with Thermal-Chem Corporation for factory-approved formulations.

### ADVANTAGES

- Minimum patching depth 1/2". No maximum depth limitations
- No offensive odor during installation
- Numerous aggregate mix designs increases product application versatility
- Available in two cures
- Protects concrete from attack intrusion of chemicals, water and other harmful liquids
- Can be applied to moist surface (no free-standing water)
- Non-shrink or expandable formulations
- Non-flammable
- Low modulus, tough patching material

### LIMITATIONS

- Do not thin with solvents
- Do not apply in presence of free-standing water
- If applied in high humidity environments, an amine blush may occur on cured surfaces. Blush does not compromise performance characteristics but must be removed with warm soap and water if a second lift or topcoat is to be applied.
- Patches should be keyed in and not feather edged

### TYPICAL PHYSICAL PROPERTIES

**PHYSICAL PROPERTIES OF THERMAL-CHEM  
M3 MORTAR MIXED WITH APPROVED SILICA  
SAND FORMULATION**

	<b>Normal Cure</b>	<b>Rapid Cure</b>	<b>ASTM C881 Requirements</b>
Potlife*, 100g, hrs.			
32°F (0°C) Class A	----	.6	Complies
50°F (10°C) Class B	1.00	.5	Complies
72°F (21°C) Class C	0.75	.4	Complies
90°F (32°C) Class C	0.70	.3	Complies
Tack-Free Time, hrs.			
32°F (0°C)	--	6.00	N/R
50°F (10°C)	6.00	4.50	N/R
72°F (21°C)	4.75	3.00	N/R
90°F (32°C)	1.50	1.00	N/R
Viscosity, poise (neat material)	4-7	4-7	Grade 20, max.
Bond Strength, psi (ASTM C882)			
+86°F (+30°C)	4,800	4,800	Passes Test
-55°F (-48°C)	--	5,000	N/R
Thermal Compatibility (ASTM C884)	Passes	Passes	Passes Test
Shrinkage (ASTM C883)	Passes	Passes	Passes Test
Compressive Strength, psi (ASTM C579) 77°F (25°C)			
1 day	6,000	6,000	N/R
3 days	9,500	9,500	N/R
7 days	14,000	14,000	
Tensile Elongation, % (ASTM D638) 77°F (25°C)			
7 days, mortar	14-16	14-16	N/R
Flexural Strength, psi (ASTM D790) 77°F (25°C)			
7 days (mortar)	5,000	5,000	N/R
Coefficient of Linear Thermal Expansion ASTM D696, -30°C to +30°C	18.0 x 10 <sup>-6</sup>	mm/mm/°C	
Freeze Thaw Resistance (ASTM C666)	Rating 0	Rating 0	N/R
300 cycles	No scaling	No scaling	N/R
Scale Resistance to De-Icing Chemicals (ASTM C672)	Rating 0	Rating 0	N/R
50 cycles	No scaling	No scaling	N/R

**COLORS AND TEXTURES**

- Available in straw, c-gray and black
- Various slip resistant textures achieved with

different size and shapes of aggregate, method of application and topcoat material.

**PRODUCT APPLICATION**

- Slurry, pourable, pumpable or trowel
- Refer to Thermal-Chem's Installation Guide for concrete patching and concrete overlays

**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](mailto:sales@thermalchem.com)  
 Website: [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.

**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