



Since 1967

Technical Data Sheet

THERMO-BOND™

ADHESIVE MORTAR FOR EPS/XPS INSULATION

PART 1: GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

BULL-BOND® THERMO-BOND™ Adhesive Mortar (with fibers) for EPS/XPS insulation. THERMO-BOND™ is a high quality polymer modified construction adhesive for bonding expanded polystyrene (EPS) and extruded polystyrene (XPS) boards (skinless) to mineral construction substrates. This adhesive is cement-based and possesses high adhesion power to all types of mineral bases including Cement board and exterior grade gypsum. BULL-BOND® THERMO-BOND™ ensures strong bonding of the thermal-insulation boards to most construction bases and substrates. Material is also employed as the base coat finish for embedding or armoring fiberglass mesh fibers within the EIFS systems to increase their strength and mechanic stability. THERMO-BOND™ is a key component of the BULL-BOND® STUCCO-PRO™ EIFS.

1.2 BASIC USES:

- Cement modified adhesive mortar for bonding:
 - Expanded Polystyrene (EPS) insulation boards
 - Extruded Polystyrene (XPS) insulation boards
- Thermal-insulation adhesive component for BULL-BOND® STUCCO-PRO™ EIFS
- Base coat finish for EIFS systems to embed fiber mesh reinforcement

1.3 SUITABLE SUBSTRATES:

- Adheres EPS/XPS boards to:
 - Concrete
 - Porous Concrete
 - CMU Blocks
 - Cement Board (PLYCEM®)
 - Exterior Grade Gypsum Boards
 - Portland Cement Plaster

1.4 ADVANTAGES:

- Great adhesion to EPS and XPS insulation
- High adhesion to mineral bases
- High vapor permeability
- Strengthened with armored fibers
- Water and frost resistance
- Thermo-insulation properties
- Used as an EIFS base coat finish

PART 2: TECHNICAL DATA

2.1 PRODUCT CHARACTERISTICS:

PRODUCT CHARACTERISTICS	
BULL-BOND® THERMO-BOND™	
MIXING RATIO	1.65 gal (6.25 L) of water per 50 lb. bag of THERMO-BOND™ Cementitious powder.
BULK DENSITY	97 lb/Ft³
APPLICATION TEMP. RANGE	58°F to 100°F
WORKABLE TIME	20-30 minutes
PACKAGING	50 lb. bag
STORAGE	Cool, dry place and free of excessive humidity. Don't leave exposed to sun.
SHELF LIFE	Powder - 1 year if unopened

2.3 MATERIAL PHYSICAL PROPERTIES:

BULL-BOND® THERMO-BOND™ PHYSICAL PROPERTIES		
PROPERTY	METHOD	BULL-BOND® THERMO-BOND™
Compressive Strength	(ASTM C109)	~2,700 psi at 28 days
Flexural Strength	(ASTM C348)	~780 psi at 28 days
Adhesive Strength	(ANSI A 118.4)	145 psi
Tensile Adhesive Strength on EPS/XPS	(ASTM C297)	18 psi
Water Vapor Transmission	(ASTM E96)	75 perms

MIX CONSUMPTION		
ADHESIVE	2 lbs/Ft²	100 Ft²/bag
BASE COAT	1.67 lbs/Ft²	120 Ft²/bag

PART 3: INSTRUCTIONS

3.1 SURFACE PREPARATION

- A. The surface must be dry, structurally sound, thoroughly clean and free of efflorescence, mold, old paint, oil, wax, grease, dirt, dust, form release compound or any other contaminant that might act as a bond breaker.
- B. Any loose concrete, paint, sealer, mold residuals or water-soluble materials must be removed.
- C. If necessary, rinse substrate thoroughly with clean water. Allow substrate to dry.
- D. The surface must be properly leveled in advance (at least 3 days prior to THERMO-BOND™ application). The surface should also be free of unrepaired cracks or surface defects.
- E. When working with surfaces with excessive moisture, the source of moisture should be removed and then the surface should be left to dry completely.
- F. All slightly crumbly and dusting substrates should be renewed and strengthened with BULL-BOND® SABAKRETE™ Micro-Topping Mix (at least 3 days prior to THERMO-BOND™ application) or another option is to prime the substrate with BULL-BOND® CONCRYL™ (at least 4-5 hours prior to THERMO-BOND™ application).
- G. Highly absorbent bases like (cement boards or gypsum boards) could require priming with BULL-BOND® CONCRYL™ before application of the THERMO-BOND™ adhesive.

3.2 MIXING

- 1. Verify that mixing tools and containers are clean before mixing.
- 2. To mix a 50 pound bag of BULL-BOND® THERMO-BOND™, add about 6.25 L (1.65 gal) of potable water to the empty container and slowly add the dry contents of the mortar bag into the container with the poured liquids, while simultaneously mixing with a heavy-duty electric drill and mixing paddle at 800 rpm until reaching a homogenous lump free consistency. A plaster mortar mixer is recommended for larger projects.
- 3. Mix thoroughly. If the mix is too stiff add more water until the desired consistency is obtained. Avoid overwatering since too much water will weaken the mortar and the resulting adhesive bond to the insulation boards.
- 4. Leave the mixture to “mature” for about 10 minutes until all filling agents dissolve, and then stir again. The ready-made mixture is ready for work and keeps its properties for about 1 hour at 75°F.
- 5. If temperatures are expected to rise above 100 °F (37.8 °C) mix only enough mortar that can be placed in one half hour.

3.2 APPLICATION

- 1. The prepared mortar should be applied at a 1-2 inch strip along the board edges and at a few spots (3 to 6) in the middle with a diameter of 3 inches. Then immediately mount the board to the wall evenly pressing on it. After pressing, the mortar should cover at least 40 % of the board's interior surface.
- 2. In case of even and smooth surfaces the mortar should be applied in a corrugated manner by means of a notched trowel with a notch width of 1/4"X3/16"X1/4" or 1/2"x1/2"x2" Round. During application the notches of the trowel should reach the board so that deep enough ridges are formed and in this way after pressing the board to the wall is ensured enough space for spreading the mortar.
- 3. No mortar should get in the grouts between the boards or on their frontal sides and if that happens it should be removed. Wrongly installed areas or too big grouts should be sealed with the same insulation material. Grouts with width up to 1/8 inches may be sealed with polyurethane foam.
- 4. Board alignment should be performed bottom-up. The boards should be placed horizontally lengthwise the façade, tightly one next to another without leaving any space between them. Formation of cross-like grouts between the boards should not be allowed and for that reason they should pass each other horizontally with half a board. It should not be allowed for the grouts between the boards to continue the lines of the façade openings (windows, doors, etc.).
- 5. Along the edges of the building the thermal-insulation boards should be crossed over in a notch like manner, which guarantees secure grip in those areas. The surface of the already applied thermal insulation layer should be smooth, without steps or irregularities. Inequalities between the board levels should be removed through grinding.
- 6. After BULL-BOND® THERMO-BOND™ develops its full bond (about 48 hours), the boards should be grinded (if necessary) and then mechanically anchored with the approved lath per EIFS system requirements. The number of mechanical anchors depends on the specific conditions of the construction site, but should not be less than 6 for every 10 ft². The greatest pressure is concentrated along the outer edges of the building; therefore within a 6 feet strip of the edge the minimum number of mechanical anchors should be not less than 8 every 10 ft².

PART 4: PRECAUTIONS

THERMO-BOND™ contains Portland cement, polymers and sand aggregate. Avoid eye and skin contact. Mix in a well-ventilated area and avoid breathing powder or dust. Use NIOSH approved face masks. KEEP OUT OF REACH OF CHILDREN. Carefully read and follow all cautions and warnings on product label and SDS.

