



## ARCHITECTURAL THIN BRICK VENEER

### INSTALLATION GUIDE

**\*Remember to always follow local building codes**

**WARNING:** Bricks contain crystalline silica. Cutting or grinding these products creates dust, which may be hazardous and should not be inhaled. Please ensure that when cutting or grinding, an appropriate mask (respirator) and safety glasses are worn.

**DISCLAIMER:** Clay bricks are made from naturally occurring minerals. Variations in color, texture, and size are natural characteristics of clay products and production variations can occur from batch to batch.

The following sections provide recommended procedures for installing thin brick via the thick set and thin set methods. Installation of mortar in thin brick veneer applications should be scheduled when temperatures will be between 40 °F (4 °C) and 90 °F (32 °C). Industry standard installation methods for ceramic tile, may also be used to install thin brick on interior thick set and thin set applications.

#### Materials Needed:

*To Be Used For Substrate*

##### **CMU Block (Optional)**

**Water Resistant Drywall (Optional)**  
Green Board or Blue Board

**Cement Board (Optional)**  
Hardie Board or Durock

##### **Reinforcing Lath and Mesh (Optional)**

Reinforcing lath and mesh should be made of corrosion-resistant materials. Galvanized or stainless steel are most common. Metal lath should be either 2.5 lb/sq yd or 3/8 in. rib, 3.4 lb/sq yd metal lath complying with ASTM C847. Self-furred lath or lath attached with self-furring fasteners is recommended. Woven wire mesh should be minimum 18 gauge complying with ASTM C1032.

*To Be Used For Installation*

##### **Mortar (Optional)**

Mortar and modified mortar used for scratch and bond coats should comply with ASTM C270, Specification for Mortar for Unit Masonry, Type S, with or without a latex or polymer modifier specifically designed for use with thin veneer; or with ANSI 118.4. Mortar used to fill joints may have a higher water content as required by installation method. For more information on mortar, refer to Technical Note 8. Modified mortar. Typically a modified mortar is a portland cement mortar modified by adding a polymer/latex additive or a bond enhancer. Latex additives may improve adhesion, reduce water absorption and provide greater bond strength and resistance to shock and impact. When using the liquid form of latex, it is added as a replacement for part or all of the water used when mixing the mortar.

**Non-Sagging Adhesive - Compatible With Thin Brick Veneer & Substrate (Optional)**

**Alkali-Resistant Glass Fiber Mesh Tape (Optional)**

#### Tools Needed:

- **Caulk & Adhesive Gun (Optional)**
- **1/8" Square-Notched Trowel (Optional)**
- **3/8" Brick Joint Spacers**
- **Rubber Mallet**
- **Striking Tool or Trowel**
- **Angle Grinder With Masonry Cutting Disc**
- **Level**
- **Mortar Gun or Grout Bag**
- **Bucket**
- **Stiff Brush**
- **Safety Glasses**
- **Dust Mask or Respirator**
- **Gloves**

**\* The need for optional items may vary depending on the installation method that is chosen.**

## Substrate and Surface Preparation

Where thin brick veneer units are installed on site, proper construction and preparation of the substrate according to the corresponding local building code and manufacturer's recommendations to receive them is critical. Surfaces receiving thin brick should be structurally sound and free of loose debris or residue, including algae, mold, dust, laitance, paste, wallpaper or laminate. Remove all substances that could potentially impede the bonding of the veneer. Such substances include oils, greases, waxes, bond-release agents, sealers, solvents, paints or other coatings or surface preparations. If a substrate surface is wet, then the water source must be identified and eliminated. Surfaces on which thin brick are placed must not vary from plane by more than 1/4 in. in 10 ft. Taping sheathing joints can sometimes reduce unevenness. If a surface does not comply with surface tolerances, then a leveling coat must be applied before proceeding.

Walls of wood and steel stud framing should be designed to meet lateral deflection requirements. Exterior walls of wood or steel stud framing require a water-resistant barrier on sheathing. Fasten cement board through sheathing and water-resistant barrier into studs. Joints of cement board should be staggered and offset from sheathing joints. Treat cement board joints with alkali-resistant glass fiber mesh tape embedded in mortar or modified mortar in accordance with cement board manufacturer recommendations. Allow masonry and concrete substrates to cure for the amount of time recommended by the corresponding manufacturer prior to installation of thin brick veneer.

## Exterior Installation

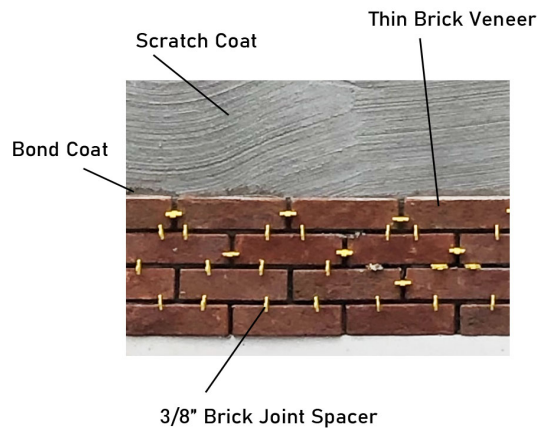


Fig. 1

### Steps 1 & 2 Apply to Thick Set Application on Studs

1. Metal lath or wire mesh should be applied over the water-resistant barrier as recommended by the manufacturer and/or local building codes.
2. Attach lath or mesh to wood stud framing with corrosion-resistant fasteners as recommended by the manufacturer and/or local building codes.

### Steps 3 & 4 Apply to Thick Set Application on Studs & Thin Set Application on CMU (Fig. 1)

**3. Scratch Coat.** For thick set systems, a scratch coat of mortar with a nominal thickness of 1/2 to 3/4 in. is applied to the lath or mesh until it is fully embedded in the mortar. The scratch coat can be applied in one layer or as two nominal 1/4 to 3/8 in. layers, where the first layer fully embeds the lath or mesh. The surface of each layer should be scratched (scored) horizontally when thumbprint hard and allowed to cure before applying the next layer or coat. Installation in a single layer may be preferable during periods of hot or cold weather to avoid potential delamination between layers.

**4. Bond Coat.** Apply a bond coat of mortar or modified mortar over a damp scratch coat to a nominal thickness of 1/8 in. and groove with a square-notched trowel. For maximum adhesion, clean entire back of the thin brick veneer with a damp sponge, then cover entire back with bond coat mortar. While the coat remains wet and workable, embed the thin brick into the bond coat and fill mortar joints as described in the "Setting Thin Brick" and "Mortar Joints" sections below.

**5. Setting Thin Brick** Each thin brick should be firmly pressed or tapped into place, taking care to maintain proper level, spacing (The use of 3/8" spacers is recommended for mortar joints), and alignment of the joints and bond pattern. Setting each brick with a rubber mallet can help to ensure flatness and secure bedding. If mortar or modified mortar is used, a slight excess should squeeze out of the joints between brick during the setting process. Once the thin brick is set, it should not be moved or the bond may be compromised. If a thin brick is inadvertently moved after initial set has begun, it should be removed, along with any bond coat behind it, and a new thin brick unit installed with fresh mortar, modified mortar or adhesive. Proper setting of each thin brick is critical to ensuring a durable thin brick system. Improper setting of the thin brick is the most frequent cause of poor performance.

**6. The mortar joints between thin brick must be filled.** One method involves filling the joints as the brick are placed, using a striking tool or a trowel to remove the excess. Placing the brick under firm pressure, while sliding them slightly away from and back into desired position, squeezes excess mortar into the joint between units. A second and more common method is to keep the head and bed joint essentially free of mortar during thin brick placement and to fill the joints separately using a mortar gun, grout bag or other mortar delivery device. Allow the bond coat to cure 24 hours or until joints can be filled without displacement of the brick. Tool joints to a concave, V or grapevine profile once they have achieved sufficient stiffness (thumbprint hard) and then use the stiff brush to clean the installation if needed.

## Interior Installation

### 1. Elect Installation Method From Options Below

**Option 1 - Adhesive.** Thin brick may be adhered with a non-sagging adhesive compatible with the thin brick and substrate. These are typically available in tubes and are applied using a pressure gun. Clean entire back of the thin brick veneer with a damp sponge, then apply the adhesive according to manufacturer's instructions. The adhesive is usually applied in 1 in. diameter (quartersized) dabs on the back of the brick at each end. Adhesives should not be applied in a manner that will trap water, resulting in subsequent freezing and thawing. Figure 3 shows an interior application of thin brick on wood stud framing using the thin set method.

**Option 2 - Modified Mortar.** Dry components of modified mortar should be pre-blended prior to adding the latex additive. Clean entire back of the thin brick veneer with a damp sponge, then apply according to manufacturer's instructions. Most manufacturers recommend a nominal 1/8 in. thickness. For maximum adhesion, complete coverage of the back of thin brick with bond coat mortar is advised. Apply modified mortar over an area no greater than can be covered by thin brick while the mortar remains workable. Use a notched trowel as recommended by the mortar manufacturer to evenly spread the modified mortar to a nominal 1/8 in. thickness. Within 10 minutes of applying the latex-modified mortar on the substrate, completely cover the back of thin brick with modified mortar and embed in substrate mortar coat

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**MAINTENANCE:** If properly designed, detailed and constructed, minimal maintenance is required for thin brick applications. Brick veneer should be inspected periodically to ascertain performance and to identify any potential problems. Inspections are recommended on an annual basis at a minimum. Such inspections should address sealant joints, any loose units, plumbness of the wall, cracking, etc., to identify repairs and corrections before severe issues develop.

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