SECTION 04 21 00

THIN BRICK

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

*Copyright 2025 - 2025 ARCAT, Inc. - All rights reserved*

\*\* NOTE TO SPECIFIER \*\* METROBRICK; architectural thin brick.  
This section is based on the products of METROBRICK, which is located at:  
1201 Millerton St. S. E.  
Canton, OH 44711  
Toll Free Tel: 888-325-3945  
Email: [request info (info@ironrock.com)](https://arcat.com/rfi?action=email&company=METROBRICK&message=RE%253A%2520Spec%2520Question%2520(04210mbk)%253A%2520&coid=44053&spec=04210mbk&rep=&fax=)  
Web: <https://www.metrothinbrick.com>   
 [ [Click Here](https://arcat.com/company/metrobrick-44053) ] for additional information.  
METROBRICK, manufactured in Canton, Ohio, is an architectural thin brick used in precast, tilt-up and field applied applications. METROBRICK's parent company - Ironrock - is a fifth-generation family-owned company with an over 150-year history of manufacturing the finest brick and tile products. METROBRICK is used in commercial construction projects throughout the United States and Canada.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Select one or more of the following installation methods.

* + 1. Thin brick veneer embedded into the exterior surfaces of precast concrete components assembled in a single or multi-use brick embed system.
    2. Thin brick veneer field applied.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete below not relevant; add others as required.

* + 1. Section 03 40 00 - Precast Concrete.
    2. Section 03 47 13 - Tilt Up Concrete.
    3. Section 04 20 00 - Unit Masonry.
    4. Section 05 40 00 - Cold-Formed Metal Framing.
    5. Section 06 10 00 - Rough Carpentry.
    6. Section 07 27 00 - Air Barriers.
    7. Section 07 60 00 - Flashing and Sheet Metal.
    8. Section 09 31 00 - Thin-Set Tiling.
    9. Section 09 32 00 - Mortar-Bed Tiling.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not required by the text of the edited section.

* + 1. American National Standards Institute (ANSI).
       1. ANSI A137.1: 2022 Standard Specifications for Ceramic Tile.
       2. Applicable ANSI Standards referenced by the Building Code.
    2. American Society of Testing and Materials (ASTM).
       1. ASTM C67-24 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
       2. ASTM C650-20 Standard Test Methods for Determination of Resistance to Chemical Substances.
       3. ASTM C666-15 Standard Test Methods for Resistance of Concrete to Rapid Freezing and Thawing.
       4. ASTM E488-22 Standard Test Methods for Strength of Anchors in Concrete Elements.
    3. Brick Institute of America (BIA).
       1. TN 20: Technical Notes on Brick Construction "Cleaning Brickwork".
       2. TN 28C: Technical Notes on Brick Construction "Thin Brick Veneer".
    4. Precast/Prestressed Concrete Institute (PCI).
       1. PCI Standard for Embedded Clay Thin Brick.
    5. Tile Council of North America's "Handbook for Ceramic Tile Installation".
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data.
        1. Thin Brick Veneer: Manufacturer's data, recommendations and standard specifications for thin brick.
        2. Include manufacturer's recommended cleaning procedure for the removal of brick wax treatment.
     3. Quality Control Submittals.
        1. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:
           1. Thin brick units, upon Architect request.
     4. Shop Drawings.
        1. Thin Brick Veneer: Complete shop drawings shall be prepared for all conditions of thin brick veneer. Include manufacturer's standard details.

\*\* NOTE TO SPECIFIER \*\* Delete if not embedding brick cast in precast or tilt-up concrete panels.

* + - 1. Embedded Thin Brick: Indicate locations of brick panels in project and submit elevation drawings that indicate:
         1. Panel sizes.
         2. Panel joint locations and dimensions.
         3. Horizontal and vertical brick coursing.
         4. Alignment of brick coursing to adjacent construction.

\*\* NOTE TO SPECIFIER \*\* Delete if not using field applied brick.

* + - 1. Field Applied Thin Brick: Indicate locations of brick in project and submit elevation drawings that indicate:
         1. Control and expansion joint locations and dimensions.
         2. Horizontal and vertical brick coursing.
         3. Alignment of brick coursing to adjacent construction.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
     2. Store brick off the ground to prevent contamination by mud, dust, or other materials likely to cause staining or other defects.
     3. Cover all materials with a non-staining waterproof membrane material when necessary to protect from elements.
     4. Store different types of materials separately.

\*\* NOTE TO SPECIFIER \*\* Delete following if not using wax-coated thin brick.

* + 1. Avoid exposing wax-coated thin bricks to high temperatures, such as direct sunlight or placement under heavy, dark-colored tarps. Ensure pallets are well-ventilated to prevent heat buildup and wax degredation.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: METROBRICK, which is located at:  
         1201 Millerton St. S. E.  
         Canton, OH 44711  
         Toll Free Tel: 888-325-3945  
         Email: [request info (info@ironrock.com)](https://arcat.com/rfi?action=email&company=METROBRICK&message=RE%253A%2520Spec%2520Question%2520(04210mbk)%253A%2520&coid=44053&spec=04210mbk&rep=&fax=);Web: <https://www.metrothinbrick.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs: Coordinate with requirements of Division 01 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00.
  1. PERFORMANCE
     1. Properties:
        1. Breaking Strength: Not less than 250 psi tested in accordance with ASTM C67.
        2. Cold Water Absorption: Maximum 6 percent at 24 hours tested in accordance with ASTM C67.
        3. Efflorescence: Rated not effloresced when tested in accordance with ASTM C67.
        4. Freeze-Thaw Resistance:
           1. Uncoated Brick: No detectable deterioration (spalling, cracking, or breaking) after 300 cycles tested in accordance with ASTM C666, Method A or B on assembled specimens.
           2. Surface Coloring: No observable difference in the applied finish when viewed at a distance of 20 feet (6.1 m) after 50 cycles tested in accordance with ASTM C67. In addition, the brick shall undergo ASTM C666 test described above.
        5. Pull-Out Strength: Not less than 150 psi from base concrete before and after freeze thaw testing tested in accordance with specified modification to ASTM E488.
        6. Chemical Resistance: Rated not affected when tested with a 10 percent hydrochloric acid solution in accordance with ASTM C650.
        7. Dimensional Tolerances: Measure in accordance with ASTM C67.
           1. Thickness: Plus 0 inches, minus 1/16 inch (1.59 mm).

\*\* NOTE TO SPECIFIER \*\* Delete face size not required.

* + - * 1. Face size:

Plus 0 inches, minus 1/16 inch (1.59 mm) for dimensions 8 inches or less.

Plus 0 inches, minus 3/32 inch (2.38 mm) for dimensions greater than 8 inches.

* + - * 1. Warpage: Not more than 1/16 inch (1.59 mm) either concave or convex from a consistent plane.
        2. Out of Square: Plus or minus 1/16 inch (1.59 mm).
        3. Shape Angle: Plus or minus 1 degree from specified angle.
  1. THIN BRICK VENEER
     1. Thin Brick: Exterior grade, conforming to ASTM C 1088, fabricated to TBX tolerance.
        1. Thickness: 5/8-inches.

\*\* NOTE TO SPECIFIER \*\* Select one or more of the following brick types.

* + - 1. Face size:
         1. Modular Thin Brick (HxL): 2-1/4 x 7-5/8 inches (57 mm x 193.68 mm).
         2. Modular Thin Brick Corner (HxLxL): 2-1/4 x 3-5/8 x 7-5/8 inches (57 x 92.08 x 193.68 mm).
         3. Modular Edge Cap (HxLxL): 2-1/4 x 3-5/8 x 7-5/8 inches (57 x 15.88 x 193.68 mm).
         4. King Thin Brick (HxL): 2-5/8 x 9-5/8 inches (66.68 x 244.48 mm).
         5. King Thin Brick Corner (HxLxL): 2-5/8 x 2-3/4 x 9-5/8 inches (66.68 x 69.85 x 244.48 mm)
         6. Norman Thin Brick (HxL): 2-1/4 x 11-5/8 inches (57 x 295.28 mm).
         7. Norman Thin Brick Corner (HxLxL): 2-1/4 x 3-5/8 x 11-5/8 inches (57 x 92.08 x 295.28 mm).
         8. Norman Thin Brick Edge Cap (HxLxL): 2-1/4 x 3-5/8 x 11-5/8 inches (57 x 92.08 x 295.28 mm).
         9. Utility Thin Brick (HxL): 3-5/8 x 11-5/8 inches (15.88 x 295.28 mm).
         10. Utility Thin Brick Corner (HxLxL): 3-5/8 x 3-5/8 x 11-5/8 inches (92.08 x 92.08 x 295.28 mm).
         11. Utility Thin Brick Edge Cap (HxLxL): 3-5/8 x 3-5/8 x 11-5/8 inches (92.08 x 92.08 x 295.28 mm).
         12. Modular Full Brick (HxLxW): 2-1/4 x 7-5/8 x 3-5/8 inches (57 x 193.68 x 92.08 mm).
      2. Texture:

\*\* NOTE TO SPECIFIER \*\* Select one of the following texture options.

* + - * 1. Texture: Smooth.
        2. Texture: Wire Cut.
        3. Texture: Smooth with Ironspot.
        4. Texture: Vertical Score.
        5. Texture: Scallop.

\*\* NOTE TO SPECIFIER \*\* The following texture is only available for Modular Full Brick.

* + - * 1. Texture: Vintage.

\*\* NOTE TO SPECIFIER \*\* Select one of the following color options.

* + - 1. Color:
         1. Brick color(s) selected from full range of manufacturer's available colors.
         2. Match Architect's approved samples.
         3. Match existing adjacent brickwork.

\*\* NOTE TO SPECIFIER \*\* Select one of the following back surface texture options.

* + - 1. Back Surface Texture: Dovetail/keyback design to provide a mechanical lock into the concrete for maximum durability and permanence.
      2. Back Surface Texture: Manufacturer s standard three-dimensional texture to provide a mechanical lock into the concrete for maximum durability and permanence.

\*\* NOTE TO SPECIFIER \*\* Verify special shapes are obtainable in brick type desired. Select if special shapes are required.

* + - 1. Special shapes:
         1. Corners.
         2. Edge corners.
         3. End edge corners.
  1. ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* Delete wax treatment if not required.

* + 1. Thin Brick Wax Treatment for Face Application: Thin brick manufacturer's standard removable wax coating applied to the exterior faces of thin brick as a cleaning and production aid.
    2. Templates.
       1. Single-Use Template System for Brick Embed Application: Commercially available modular templates formed of recyclable styrene plastic or polymer system material to surround single brick units, having factory-applied bond breaker to create cove finished joint.

\*\* NOTE TO SPECIFIER \*\* Running bond is a universal standard however several coursing options are typically available. Verify current offerings with template manufacturer.

* + - 1. Coursing: Running Bond.
      2. Template Dimensional Tolerances: Maximum variation from indicated nominal dimensions of brick cavities:
         1. Length: Plus or minus 1/64 inch (0.40 mm).
         2. Height: Plus or minus 1/64 inch (0.40 mm).
         3. Depth: Plus or minus 1/64 inch (0.40 mm).
      3. Maximum variation from square, measured diagonally across non-adjacent corners:
         1. Plus or minus 1/64 inch (0.40 mm).
      4. Basis of Design: Innovative Brick Formliner modular templates or approved equivalent.

\*\* NOTE TO SPECIFIER \*\* Delete following if not using embedded thin brick veneer.

* 1. FABRICATION, EMBEDDED APPLICATION
     1. Embedded Thin Brick Veneer.
        1. Install template system onto clean formwork in accordance with manufacturer's printed installation instructions.
        2. Install thin brick into template system in accordance with manufacturer's printed installation instructions. Mix bricks from several cartons for best shading during installation.
     2. Installation Tolerances.
        1. Variation in alignment of horizontal or vertical mortar joints maximum 1/4 inch in 10 feet (6.35 mm in 3.1 m), non-cumulative.
        2. Maximum offset in plane of adjacent form liner units: 1/16 inch (1.59 mm).
        3. Maximum misalignment between adjacent form liner units: 3/64 inch (1.20 mm).

\*\* NOTE TO SPECIFIER \*\* Retain following for wax-coated thin brick.

* + 1. Prior to delivery to the Project site, clean completed panels to remove wax coating using low-pressure heated water in accordance with brick manufacturer's written instructions. For instances where water alone proves insufficient for cleaning purposes, obtain Architect approval for alternative cleaning materials. Comply with BIA Technical Notes 20.
    2. Masonry Cleaner Use: Use only masonry cleaners acceptable to the thin brick manufacturer and the Architect. Test all masonry cleaners on a sample panel prior to using on panels for use on the project. Prior to the use of water-compatible masonry cleaners, wet panel with clean water before applying cleaner. Do not use any product containing Hydrofluoric Acid as it will attack both grout and bricks.

1. EXECUTION
   1. INSTALLATION
      1. Install thin brick in accordance with more stringent of the following:
         1. Manufacturer's instructions.
         2. BIA TN 28C Technical Notes on Brick Construction "Thin Brick Veneer".

\*\* NOTE TO SPECIFIER \*\* Delete application not required.

* + - 1. PCI Standard for Embedded Clay Thin Brick.
      2. TCNA Handbook for Ceramic Tile Installation.
         1. TCNA Installation Methods W201, W202 and W244E are recommended for exterior or wet applications.

\*\* NOTE TO SPECIFIER \*\* Delete applications not required.

* + 1. Coordinateapplication materials and methodswith Section 03 40 00 - Precast Concrete.
    2. Coordinate application materials and methods with Section 03 47 13 - Tilt Up Concrete.
    3. Coordinate application materials and methods with Section 09 31 00 - Thin-Set Tiling.
    4. Coordinate application materials and methods with Section 09 32 00 - Mortar-Bed Tiling.
  1. REPAIR, POINTING AND CLEANING OF THIN BRICK VENEER
     1. Remove and replace thin brick units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
     2. On-Site Cleaning of Thin Brick Veneer Surfaces.
        1. Repairs: Wipe off excess mortar as the work progresses. Dry brush at the end of each day s work.

\*\* NOTE TO SPECIFIER \*\* Retain following for wax-coated thin brick.

* + 1. Wax Removal:
       1. Water spray temperature: Between 180 and 200 degrees F at the face of the panel at a normal operating distance of approximately 6 to 8-inches from the spray tip.
       2. Use low pressure of 1,000 to 1,200 PSI.
       3. Start from the top and gradually work down the panel allowing the water to melt the wax and carry it down the face.
       4. Angle the spray tip down to avoid spraying the wax back on areas that have already been cleaned.
    2. Final Cleaning: After mortar is thoroughly set and cured, clean sample wall area of approximately 20 sq ft (1.9 sq m) as follows. Obtain Architect's acceptance of sample cleaning before proceeding to clean rest of masonry work.
       1. Dry clean to remove large particles of mortar using wood paddles and scrappers. Use chisel or wire brush if required.
       2. Presoak wall before saturating with water and flush off loose mortar and dirt.
       3. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
       4. Scrub down wall with stiff fiber brush and a solution of 1/2-cup of tetra phosphate and 1/2-cup of household detergent dissolved in one gallon of water.
       5. Rinse walls, using clean, pressurized water, to neutralize cleaning solution and remove loose material.
       6. Acid cleaning of thin brick masonry will not be permitted.

END OF SECTION