SP-150905
(New)

SPECIAL PROVISIONS
FOR
INTEGRAL THIN VENEER BRICK FOR STRUCTURAL CONCRETE

Johnson County
IM-080-6(488)242--13-52

Effective Date
September 20, 2022

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150905.01 DESCRIPTION.
This specification describes the requirements for using integral thin veneer brick and a compatible form liner gasket system for installation within forms for vertical cast pre-cast structural concrete or vertical cast-in-place structural concrete.

150905.02 MATERIALS.

A. Manufacturers.

1. Thin Veneer Brick Form Liner Gasket System Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- **a.** Scott System, Inc.
- **b.** Architectural Polymers
- **c.** United Wall Systems
- **d.** Other manufacturers submitted to the Iowa DOT, Bridges and Structures Bureau for review and approval.

2. Thin Veneer Brick Unit Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- **a.** Endicott Clay Products Company: Blend Consisting of 50% Autumn Sands Thin Brick, and 50% Burgundy Sands Thin Brick
- **b.** Summitville Tiles, Inc.: B211 Cambridge Blend
- **c.** Glen-Gery Corporation: Sunset Flashed Wirecut Thin Brick (FW15)
- **d.** Other manufacturers submitted to the Engineer for review and approval.

B. Thin Veneer Brick Form Liner Gasket Materials.

1. Single or multi-use template system for vertical poured concrete walls and corners. Modular templates formed of styrene plastic or polyurethane to securely surround individual thin veneer brick units, having factory-applied face wax or other bond breaker.

2. Maximum variation from indicated nominal dimensions of brick cavities:
   a. Length: ±1/32 inch.
   b. Height: ±1/32 inch.
   c. Depth: ±1/32 inch.

3. Maximum variation from square, measured diagonally across non-adjacent corners: ±1/16 inch.

4. Coursing: Running bond, as indicated in the plans.

C. Thin Veneer Brick Units.

1. Exterior grade thin brick shall meet the requirements of ASTM C 1088, Type TBX (Select). When the allowable thin brick unit tolerance values indicated by the thin veneer brick form liner gasket system manufacturer's recommendations are different than those specified for Type TBX, the more stringent of the two tolerance requirements shall apply.

2. Size: Normal (modular) 2 1/4 inches high by 7 5/8 inches wide by 9/16 to 3/4 inch thick. Corner bricks (modular) long side 2 1/4 inches high by 7 5/8 inches wide, short side 2 1/4 inches high by 3 5/8 inches wide. Both sides of corner bricks shall be 9/16 to 1 1/4 inch thick.

3. Color and Texture: Matching the full modular bricks specified in Special Provisions for Unit and Limestone Masonry and subject to approval of submitted samples. All thin veneer brick used in the project shall be from a single production run to ensure color and texture uniformity. Corner bricks (if used) shall match normal bricks in both color and texture.

4. Back Side Bonding Surface: Back surface to be embedded in concrete shall exhibit ribs or dovetail striations with minimum relief of 5/64 inch.

5. Bond Breaker: Thin veneer brick units shall have factory-applied face wax or other bond breaker to prevent grout staining of the brick faces. Bond breaker shall be approved for use with the form liner gasket system by the form liner manufacturer.

D. Accessories.

1. Plastic or foam bricks for tie hole locations (if needed), sized to securely fit form liner gasket and to create voids of appropriate dimensions for installation of grouted patch brick units following stripping of forms.

2. Epoxy grout in accordance with manufacturer's recommendations for the setting of patch bricks into defects and tie hole voids. Epoxy grout shall be non-leaching.

3. Other accessories as recommended by the manufacturer.

E. Quality Assurance.

1. Manufacturer Qualifications: Firm(s) experienced in manufacturing thin veneer brick form liner gaskets and thin veneer brick units similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to manufacture required units.

2. Source Limitations for Form Liner Gaskets: Obtain form liner gaskets through one source from a single manufacturer.

3. Source Limitations for Thin Veneer Brick Materials: Obtain thin veneer brick units through one source from a single manufacturer, and from a single production run for the entire project to ensure color and texture uniformity. Manufacturer shall be the same manufacturer as the full modular brick units used on the abutment monuments.

F. Product Delivery, Storage and Handling.

1. Do not use damaged products. Do not install products not bearing product trade name and manufacturer's name.

2. Store all installation materials in manufacturer's unopened packaging in a dry storage area, with ambient temperature between 30˚F and 120˚F until installation. Protect all materials from exposure to sun, rain, dirt, and dust until installation.

3. Do not top load or otherwise crush form liners in their packages.

150905.03 CONSTRUCTION.

A. Submittals.
The following shall be submitted to the Engineer for approval.

1. Product Data: Manufacturer's data sheets on each product to be used including:
   - **a.** Preparation instructions and recommendations.
   - **b.** Storage and handling requirements and recommendations.
   - **c.** Installation methods.
   - **d.** Cleaning methods following form removal.
   - **e.** Patching methods.

2. Shop Drawings: Submit elevation drawings and details that indicate:
   - **a.** Horizontal and vertical brick coursing.
   - **b.** Alignment of brick coursing to adjacent construction.
   - **c.** Corner details (if required).
   - **d.** Construction joints.
   - **e.** Brick color and texture.
   - **f.** Special conditions.

3. Selection Samples: For each finish product specified, one complete set of samples, representative of full range of color and finish for each brick type. Include a written submittal document with the manufacturer and supplier names, brick color name(s) or number(s), and brick finish type(s) listed.

4. Verification Samples: For each finish product specified, two samples, representative of selected range of color and finish for each brick type. Include form liner sample and bond breaker sample applied to full size thin veneer brick, representing bond breaker to be used. Include a written submittal document with the manufacturer and supplier names, brick color name(s) or number(s), and brick finish type(s) listed.

B. Mockups.
Construct mockups meeting the following requirements.

1. Mockup: Provide mock-up as described in the Intermediate Monument Mockup Notes on the plans. Do not proceed with intermediate monument work until the mockup has been approved by the Engineer.

2. Additional Requirements: A qualified technical representative of the thin veneer brick form liner gasket system manufacturer or a supplier with at least 3 years of system installation experience shall be on site during mockup construction and review. Representative shall also be on site for at least one complete production work cycle of form setup, concrete pouring, stripping, cleaning, and finish patching operations associated with the integral thin veneer brick.

3. Mockup Removal: Upon completion of the project, the mockup shall become the property of the Contractor and shall be removed from the site.

C. Forming.

1. Do not begin installation until concrete forms have been properly prepared.

2. No grouted patch brick units are allowed in brick-faced outside surfaces of traffic barriers. Forms must withstand fluid pressures without the use of ties through the brick surfaces of the barrier.

3. If form ties are necessary within the brick zones indicated in the plans, coordinate location of ties with the form liner gasket system. Ties shall be located only within brick cavities of liner. Adjust position of ties, not form liner, as necessary to avoid conflicts with liner.

4. Coordinate installation of form liner gasket system with installation of required form inserts, rustication strips, construction joints, etc. as shown in the plans.

D. Installation of Form Liner Gasket System.

1. Thoroughly clean form surfaces prior to installation.

2. Prepare, install, and finish form liner gasket system in accordance with manufacturer's recommendations, and with guidance from the manufacturer's on-site representative.

E. Installation of Thin Veneer Brick Units.

1. Clean brick pockets free of all foreign material prior to setting thin bricks. Take special care not to damage the form liner gasket system during cleaning.

2. Install thin brick units in accordance with form liner gasket system manufacturers written instructions and with guidance from manufacturer's on-site representative.

3. When more than one color or texture brick is used to create a single color brick field with variations, mix the different thin brick units prior to installing into gaskets so that color or texture differences are randomly patterned in the finished surface.

4. Ensure that all thin brick units are securely held in form liner gasket system.

5. Remove and replace any individual form liner gasket module that does not securely hold the thin veneer brick. Remove and replace any individual form liner gasket module if the thin brick unit falls out of it for any reason. Remove and replace any individual form liner gasket module if the thin brick is purposely removed from it for any reason.

6. If allowed by the manufacturer, glue may be used to aid in securing thin veneer bricks in place within the form liner gasket system. Use only approved glue as recommended by the manufacturer, and only with guidance from the manufacturer's on-site representative.

F. Installation Tolerances.

1. Maximum variation in alignment of horizontal or vertical mortar joints: 1/4 inch in 10 feet, non-cumulative.

2. Maximum offset in plane of adjacent form liner units: 1/16 inch.

3. Maximum misalignment between adjacent form liner units: 3/64 inch.

G. Loading of Forms.
Load forms with concrete according to the Standard Specifications and the following:

1. Do not drop concrete directly upon thin veneer brick during loading of vertical concrete forms.

2. Do not touch thin veneer brick with internal vibrators (stingers).

3. Do not externally vibrate forms or strike the outside of forms with heavy objects.

4. Take particular care to ensure consolidation of concrete into all joint spaces between thin bricks.

H. Stripping and Cleaning.

1. Remove the form liner gaskets immediately following stripping of the concrete forms. If approved by the form liner gasket system manufacturer, power washing may be used to aid removal of the gaskets from the brick surfaces.

2. Immediately following form stripping and form liner removal, commence power washing of brick surfaces in accordance with the manufacturer's recommendations and with guidance from the manufacturer's on site representative. Use water pressure and temperature recommended by the manufacturer. Washing operations shall remove all concrete mortar leakage, thin veneer brick face wax or bond breaker, and any remaining form liner gasket components.

3. Do not re-use single-use brick gaskets on the project. Do not re-use any multi-use brick gaskets that are warped, cracked, torn, folded, crushed, or show other signs of damage. Replace any gaskets as directed by the Engineer.

I. Patching.
No grouted patch brick units are allowed in brick-faced outside surfaces of traffic barriers.

150905.04 METHOD OF MEASUREMENT
The work of furnishing and installing Integral Thin Veneer Brick will be incidental to the Intermediate Monument bid item and will not be measured.

150905.05 BASIS OF PAYMENT
The work of furnishing and install Integral Thin Veneer Brick will be incidental to the Intermediate Monument bid item.