SECTION 04215

THIN BRICK PANEL SYSTEMS

(Specification for Brick-it DMG, MCS, & CI Panel Systems)

(Note to Specifier: Delete any items, sections, &/or references not related to this project, adding others as required)

**PART 1: GENERAL**

1.1 SECTION INCLUDES

* + 1. Brick-it DMG (Standard) Panel System.
		2. Brick-it MCS (Moisture Drainage) Panel System.
		3. Brick-it CI (Continuous Insulation) Panel System.
		4. General & Supplementary Conditions & Requirements.

1.2 RELATED SECTIONS

* + 1. Section 03300 - Cast-In-Place Concrete.
		2. Section 04200 - Masonry Units.
		3. Section 05120 - Structural Steel.
		4. Section 05400 - Cold-Formed Metal Framing.
		5. Section 06100 - Rough Carpentry.
		6. Section 06160 - Sheathing.
		7. Section 07210 - Building Insulation.
		8. Section 07620 - Sheet Metal Flashing and Trim.
		9. Section 07900 - Joint Sealants.

1.3 REFERENCES

 ASTM International (ASTM):

* + - 1. ASTM C 216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); severe weather grade kiln-fired brick.
			2. ASTM C 270 - Standard Specification for Mortar for Unit Masonry; specially formulated mortar mix.
			3. ASTM C 513 - Standard Test Method for Obtaining and Testing Specimens of Hardened Lightweight Insulating Concrete for Compressive Strength; for bricks, minimum compression strength of 1000 PSI.
			4. ASTM C 577 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
			5. ASTM C 666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing, brick, pass.
			6. ASTM C 1088 - Standard Test Method for Thin Veneer Brick Units Made

from Clay or Shale; severe weather grade kiln-fired brick.

* + - 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics

of Building Materials.

* + - 1. ASTM E 754 - Standard Test Method for Pullout Resistance of Ties and

anchors Embedded in Masonry Mortar Joints.

1.4 SUBMITTALS

1. Submit under provisions of Section 01300.
2. Product Data: Manufacturer's data sheets on each product to be used,

 including:

* + - 1. Manufacturer's installation instructions, showing required preparation

and installation procedures.

* + - 1. Storage and handling requirements and recommendations.
			2. Installation methods.
			3. Cleaning and maintenance instructions.
			4. Manufacturer’s Warranty
1. Shop Drawings: Provide drawings prepared by the applicator/contractor showing the wall layout, typical details, connections, expansion joints, plus the installation sequence shall be submitted shall be submitted to the architect upon request. Shop drawings shall include the following:
	* + 1. Submit elevations, sections and details of assembly components; indicate locations, configurations, large scale plans.
			2. Show sequence of installation, attachment details, and weather sealing.
			3. Show location of members, other items of work and related work of other Sections to be coordinated with work of this section.
			4. Submit detail drawings depicting proper installation and flashing techniques. Coordinate locations with those found on the Contract Drawings.
2. Quality Assurance Submittals:
	* + 1. Copies of test reports by independent laboratories verifying the performance of the system shall be submitted to the Architect upon request.
			2. The certified applicator/contractor shall submit a copy of his current ' Certificate of Trained Applicator' from Brick-It to the architect prior to the application of the Brick-It Metal Grid Panel System.
3. Verification Samples: For each finish product specified, two samples, minimum size 1 inches (305 mm) by 12 inches (305 mm), representing actual products, styles, colors, patterns, and textures.
4. Warranty: Copy of manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

* + 1. Single Source Requirements: Provide primary and secondary components required for installation of thin brick systems from a single source.
		2. Manufacturer Qualifications: Minimum 20 years’ experience manufacturing similar products.
		3. Installer Qualifications:
			1. Received instruction by manufacturer's personnel in the installation of the Brick-It System and received a ' Certificate of Trained Applicator' from Brick-It.
			2. Five-Years experienced and competent in the installation of brick type materials.
			3. If requested, submit a list of recently completed projects using similar materials.
		4. Performance Testing:
			1. TAS 201 - Large Missile Impact Test
			2. TAS 202 - Uniform Static Pressure Test
			3. TAS 203 - Cyclic Wind Pressure Load Test
			4. E84 - Flame Smoke Test
			5. E754 - Shear Pull Test
			6. NFPA 285 - All combustible components being required & used in part or as part of the projects composite wall assembly (such as; insulation, weather resistive barrier, sheathing & adhesives) required to meet the NFPA 285 requirements unless otherwise exempt (see Part 2 “Products” 2.2 H. Insulation Board & 2.2 I. WRB).
		5. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. The mock-up shall demonstrate the proposed range of color, texture, and workmanship to be expected in completed work.
			2. Locate mock-up on site in location as directed by Architect. Clean the sample panel installation using the same materials and tools as planned for the final construction.
			3. Obtain Architect's acceptance of mock-up before start of work.
			4. Do not proceed with remaining work until workmanship, color, style, pattern, and texture are approved by Architect.
			5. Modify mock-up area as required to produce acceptable work.
			6. Remove mock-up at the completion of the work.
			7. Mock-up may be incorporated into the work.
		6. Conduct a pre-installation meeting to verify all products, application procedures, site conditions and warranty terms. Conduct in accordance with Section 01310.

1.6 DELIVERY, STORAGE, AND HANDLING

1. Materials shall be delivered to the location in unopened factory containers. Upon arrival, materials shall be inspected for damage and manufacturer informed of any discrepancies. Deficient materials shall not be used.
2. Materials shall be stored in a protected location and safeguarded from damage.

1.7 PROJECT CONDITIONS

* + 1. The ambient air temperature shall remain at 36 degrees F (2.2 degrees C) or greater for at least 72 hours after the application of mortar.
		2. Flashing and sealants shall be installed immediately after completion of the system. For outdoor application, provide temporary protection as needed from precipitation, wind, airborne dust and debris, and similar items.
		3. Provide protection of surrounding areas and adjacent surfaces from application of brick panel systems.

1.8 COORDINATION / SCHEDULING

A. The work in this section requires close coordination with related specifications sections and trades. Proper labor and equipment shall be employed to ensure a continuous operation satisfactory to the architect.

B. Coordinate installation of brick panel systems with related wall elements, including, windows, doors, louvers, ducts, signage, flashings, sealants, weather resistive barrier, sealant tapes and membranes, supporting wall framing and sheathing, surface mounted objects, and similar items.

* + - 1. Coordinate with installation of flashing, coping and sealants to ensure that materials are installed in accordance with manufacturer's instructions.
			2. Coordinate with installation of surface-mounted objects to ensure that watertight seal is provided.

1.9 WARRANTY

* + 1. Manufacturer's Warranty: Standard 20-year limited warranty, which include all system components manufactured &/or supplied by Brick-it.

**PART: 2 PRODUCTS**

2.1 MANUFACTURERS

1. Brick-it located at: 17 Central Avenue, Hauppauge; Sales & Service: 631-244-3993, Technical 631-591-9222; Email: Info@brickit.com. Web: [www.brickit.com](http://www.brickit.com) or approved equal.
2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 BRICK PANEL SYSTEMS

* + 1. Brick Panel Systems: System for aligning and locking thin brick to a substrate that does not depend on adhesive for its performance.
			1. System Type: Brick-It (G60) Designer Metal Grid System.
			2. System Type: Brick-It (G90) Moisture Control Panel System.
			3. System Type: Brick-It (G90) Continuous Insulation Panel System.
			4. Wall Fabrication: Brick panel system shall be factory assembled and attached to prefabricated metal stud curtain wall system as indicated on the Drawings and in the Contract Documents.
		2. Metal Grid System Panels: Galvanized steel metal components formed to align brick courses and to support and ensure a mechanical bond of each brick in place.
			1. Panels shall be chem-dry treated and be a minimum 0.0149-inch (0.36 mm) thickness with continuous carrying brick ledges (every course of brick) with minimum thickness per ledge: 0.028 inch (0.71 mm).
			2. Panels shall have a continuous interlock every third course, minimum thickness, 0.042 inch (1.07 mm).
			3. Panels shall be able to fold out corners, door and window sections, and have a continuous linear array of holes to receive adhesive and have a continuous array of mortar receptors to lock in mortar mix.
			4. Panels shall be designed to carry brick load evenly on entire wall surface without the use of footings, starter angles or special corner sections.
			5. Size: 48 inches by x (8.0”,8.25”,9.0”,9.60” or 12” as specified).
			6. Size: 96 inches by x (8.0”,8.25”,9.0”,9.60” or 12” as specified).
			7. Size: Spacing for Brick Veneer (2-1/4”, 2-1/2”, 2-3/4”, 3-5/8”, & 7-5/8” as specified).
			8. Size: Custom size as indicated on the Drawings.
			9. Size: Custom size as selected by Architect.
		3. Brick: Kiln-fired brick 1/2 to 1 inch (13 mm to 25 mm) nominal thickness, meeting ASTM C 216 (for cut Face Brick) &/or ASTM C 1088 (for extruded Thin Brick), Grade SW, Type TBS, TBX, FBS, FBX, &/or PCI requirements.
			1. Brick Color: To be chosen and approved by Architect from www.brickit.com library &/or approved equal.
		4. Mortar: Brick-it Type “S” premixed mortar supplied by to meet ASTM C 270 or approved equal.
			1. Mortar: Standard grey or white mortar.
			2. Mortar: Colored mortar selected by the Architect from Brick-it’s full range of standard available mortar color options (custom colors are available upon request).
			3. Mortar Color: As indicated on the Drawings.
		5. Fasteners: Brick-it non-corrosive ribbed nails, screws or staples, designed for applicable substrate or approved equal.
		6. Adhesives: Brick-it high solid, solvent based silicone or construction adhesive that remains flexible and unaffected by freeze-thaw cycles (cut brick requires the use of Brick-it silicone adhesive only).
		7. Water: Shall be clean, potable, and free of all foreign matter.
		8. Insulation Board: Green Guard, Owens Corning or Dow minimum 25 PSI, 2” to maximum 6” XPS or approved equal. For Buildings which need to meet NFPA 285 requirements, insulation must be tested in accordance with NFPA 285 guidelines & meet ASTM E1354 requirements such as Carlisle Coatings and Waterproofing R2+Base Max 3” Polyiso, with FR 5/8” Plywood or approved equal.
		9. Weather Resistive Barrier: Shall be manufactured by Carlisle, Kingspan, Tyvek or approved equal. For projects which need to meet NFPA 285, WRB must be tested in accordance with NFPA 285 guidelines & meet ASTM E1354 requirements, such as Carlisle Coatings and Waterproofing Fire-Resist Barritech VP/VP LT or approved equal.
		10. Rain Screen &/or Drainage Mat: Green Guard DC14, MTI Sure Cavity 3mm or 5mm.
		11. Cleaner: Prosoco, Deidrich Technologies or approved equal approved for use by Thin Brick Manufacturer.
		12. Masonry Sealer: Manufacturer's recommended sealer, applied to brick and mortar joints.

Sealant Systems: Acceptable to Brick-It, color as selected by Architect. Joint design and surface preparation shall be based on sealant manufacturer's recommendation and project conditions.

**PART 3 EXECUTION**

3.1 EXAMINATION

* + 1. Prior to installation, examine substrate for conditions including soundness, tightness of connections, crumbling or looseness of surfaces, and projections. Verify substrate is acceptable to authorities having jurisdiction prior to installation of the work of this Section.
		2. Report deviations from the requirements of project specifications or other conditions that might adversely affect the installation to the Contractor. Do not start work until deviations are corrected.

3.2 SUBSTRATE PREPARATION

A. Repair damaged or cracked surfaces. Prepare substrate to be flat, within 1/8 inch (3.2 mm) within any 4 foot (1.2 m) square area.

B. Remove surface contaminants on concrete and concrete masonry surfaces, such a form release oils, dust, paint, waterproofing, and similar items. If required by manufacturer, apply conditioner to substrate by sprayer or roller to chalking or excessively absorptive surfaces.

* 1. INSTALLATION

A. Install in accordance with manufacturer's written instructions as applicable to each type of substrate required. Install bricks to specified pattern and mortar.

B. Metal Grid: Apply to substrate surface in the true level rows, interlock at every panel. Install such that panel does not extend 1/4 inch (6 mm) below the face of the brick.

* + - 1. Offset vertical grid joints and leave 1/4 inch (6 mm) between joints. Install for brick to extend past grid by 1/2 inch (13 mm) at grid ends.
			2. Fasten grid system to a sound substrate or wall with a non-corrosive fastener; minimum penetration of substrate is 1 inch (25 mm). Concrete and masonry walls require fasteners and adhesive on rear of metal grid.
			3. Install fasteners on an average of 3 per square foot (0.1 square meters) and at top and bottom courses vertically and a maximum of 16 inches (406 mm) on center horizontally.
		1. Adhesive:

* + - 1. Brick shall be spaced to ensure that the head joints do not exceed 5/8 inch (16 mm) or fall below 1/4 inch (6.5 mm). The optimum head joint size is 7/16 inch (11 mm).
			2. Use adhesive supplied by manufacturer. For exterior installations, apply 3/8 inch (9.5 mm) vertical dabs. For interior applications, apply 3/8-inch (9.5 mm) beads over adhesive holes as shown in manufacturer's literature.
			3. Do not use excessive adhesive as this will cause bricks to tilt away from grid. Check periodically and repress to grid.
			4. Allow adhesive 24 hours to dry before mortaring.
		1. Brick Placement:
			1. Applications Requiring Corners:
				1. Start with corner brick, or a corner brick at each corner if there are corners at both ends.
				2. Install bricks adjusting vertical joints for fit or cut brick as required.
			2. Applications that do not required corners:
				1. Install bricks in direction of arrows as shown in manufacturer's literature.
				2. Place adhesive on two rows of grid in the middle of wall.
				3. Adjust vertical joints to fit area, 3/8 inch to 1/2 inch (9.5 mm to 13 mm), to fit wall space.
				4. Cut end bricks as needed. Install bricks horizontally than vertically.
				5. Draw a plumb vertical line every 48 inches (1219 mm) to help maintain spacing.
		2. Mortar:
			1. Allow adhesive to fully cure before mortaring joints.
			2. Use clean, cold water to mix mortar. Flush hoses regularly; especially during warm weather.
			3. Slightly dampen bricks before mortaring; especially during hot weather.
			4. Mix properly and test a sample area.
			5. Do not apply mortar to brick panel system when the ambient outdoor temperature is below 36 degrees F (2.2 degrees C) unless temporary protection and heat can be provided for a minimum of 36 hours after installation.
			6. Apply mortar into horizontal joints first, then vertical joints. Over fill joints with enough mortar to avoid leaving any voids. When mortar attains a firm consistency joints shall be tooled.
			7. Use the joint tool supplied with the mortar kit to strike joints. Press the tool against the joint and strike joint to fill and seal mortar to edges of brick. Strike the vertical joints first than horizontal joints. Provide concave finish. Fill voids.
		3. Sealer: Apply only after mortar joints are thoroughly cured. Allow a minimum of 2 weeks prior to application.
			1. Seal exterior applications in accordance with manufacturer's recommendations.
			2. Seal interior applications in accordance with manufacturer's recommendations.
	1. FIELD QUALITY CONTROL
		1. Arrange and pay for project inspection by Brick-It or its authorized representative to confirm warranty will be provided. Notify Architect 48 hours in advance of inspection.
	2. CLEANING AND PROTECTION
1. Cleaning: As recommended by manufacturer. Do not begin cleaning until mortar joints are properly cured. Allow a minimum of 24 to 72 hours. Soak bricks and mortar joints before applying cleaner.
	* + 1. Thoroughly flush wall after cleaning.
			2. Clean adjacent materials and surfaces of all foreign materials resulting from the work of this Section.

* + 1. Protection:
1. Protect installed materials from water impinging on the visible surface, chinking, sealants joints, and from behind.
2. Protect installed materials from dust, dirt, precipitation, freezing, damaged, spilled materials, and continuous high humidity until they are fully dry.

END OF SECTION