SECTION 04 05 13

MORTAR AND GROUT

PART 1 - GENERAL

1.01 Section Includes

A. Mortar and grout for masonry.

1.02 References

A. ASTM C91 - Standard Specification for Masonry Cement.

B. ASTM C144 - Standard Specification Aggregate for Masonry Mortar.

C. ASTM C150 - Standard Specification for Portland Cement.

D. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.

E. ASTM C270 - Standard Specification for Mortar for Unit Masonry.

F. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.

G. ASTM C404 - Standard Specification for Masonry Grout.

1.03 Delivery, Storage and Handling

A. Deliver and store manufactured products in original unopened containers.

B. Store cementitious ingredients in weather-tight enclosure.

C. Stockpile and handle aggregates in such a manner so as to prevent segregation and contamination.

D. Protect admixtures from excessive temperature changes.

1.04 Environmental Requirements

A. Heat mixing water when air temperature is below 40^0 F and heat aggregates when air temperature is below 32^0 F, to assure mortar temperatures between 40^0 F and 120^0 F until used.

B. Produce subsequent mortar batches within 10^0 F of first batch.

C. Do not heat water or sand above 120^0 F.

1.05 Submittals

A. Submit product data for premixed mortar.

B. Submit mix design for mortar types to be mixed at the site.

PART 2 - PRODUCTS

2.01 Materials

A. Portland Cement: ASTM C150, Type I.

B. Masonry Cement: ASTM C91.

C. Mortar Aggregate: ASTM C144; clean, dry, and free of foreign matter, meeting following gradation:

Mortar Aggregate Gradation		
	Percent Passing	
Sieve Size	Natural Sand	Manufactured Sand
No. 4	100	100
No. 8	95 - 100	95 - 100
No. 16	70 - 100	70 - 100
No. 30	40 - 75	40 - 75
No. 50	10 - 35	20 - 40
No. 100	2 - 15	10 - 25
No. 200	0 - 5	0 - 10

D. Grout Aggregate: ASTM C404, maximum 3/8 inch size.

E. Hydrated Lime: ASTM C207, Type S.

F. Premix Mortar: ASTM C387.

G. Clean and potable.

2.02 Mortar Color

A. Mineral oxide pigment; Western Lime and Cement, Medusa or equivalent. Color to be selected by Owner.

2.03 Admixtures

A. Polymeric Water Repellent: Rheopel by Rheomix or equal.

B. Other Admixtures: None permitted.

2.04 Mortar Mixes

A. Meet requirements of ASTM C270. Provide types in accordance with the following table.

Selection of Masonry Mortars		
Location	Building Segment	Mortar Type
Exterior, above grade	Load bearing wall	N
	Non-load bearing wall	N
	Parapet wall	N
Exterior, at or below grade	Foundation wall, retaining wall, manholes, sewers, pavements, walks	M
Interior	Load bearing wall	N
	Non-bearing partitions	O
Interior/Exterior, Above/below grade	Walls subject to high flexural stresses, walls over 16’ in height	S

2.05 Mixing Mortar

A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.

B. Add mortar color, if required, in accordance with the manufacturer's instructions. Provide uniformity of mix and coloration.

C. Add water repellent admixture when mortar is to be used for concrete block in exterior walls or at wet locations.

D. Use mortar within two hours after mixing.

2.06 Grout Mixes

A. Bond Beams and Lintels: 3,000 psi strength at 28 days; 7 to 8 inch slump.

PART 3 - EXECUTION

3.01 Installation

A. Install mortar as indicated in individual masonry sections.

B. Work grout into masonry cores and cavities to eliminate voids. Do not displace reinforcement while placing grout.

END OF SECTION

SECTION 04 22 00

CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.01 Section Includes

A. Standard and architectural concrete masonry units and accessories.
B. Split-Faced Concrete Masonry Units (SFCMU's)

1.02 Related Sections

A. Section 04 05 13 - Mortar and Grout.
B. Section 07 19 19 - Silicone Water Repellent.

1.03 References

A. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

B. ASTM C55 - Standard Specification for Concrete Building Brick.

C. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.

D. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.

1.04 Submittals

A. Submit product data for reinforcing, control joints, and accessories.

B. Submit product data for architectural units.

C. Submit product data for insulated concrete units.

D. Submit samples of architectural concrete masonry units for review of size, color, and texture.

1.05 Quality Assurance

A. Installer: Company specializing in performing the work of this section with a minimum five years experience.

1.06 Delivery, Storage, and Handling

A. Receive, store and handle masonry units to prevent damage.

B. Store masonry units above ground on level platforms, which allow air to circulate under stacked units.

C. Cover and protect against wetting prior to use.

1.07 Environmental Requirements

A. Protect masonry from damage due to exposure to precipitation, excessive drying, freezing, soiling, and any other harmful effects.

B. Maintain materials and surrounding air temperature to a minimum 50^0 F prior to, during, and 48 hours after completion of the masonry work.

C. Do not build upon frozen work. Do not use masonry units that have a film of water or frost on their surface.

D. At the end of the day, protect the top surface of the masonry from moisture. Protection shall cover the top surface and extend a minimum of two feet down the sides of the masonry.

PART 2 - PRODUCTS

2.01 Manufacturers

A. Northfield Block, Monomonie Falls, WI 53051; County Materials, Madison, WI or equal.

2.02 General Requirements

A. Provide masonry units free from cracks, chipped edges and other defects that could interfere with proper setting or impair the strength, appearance, or durability of the structure.

B. All special concrete masonry units used for starter course, corners, piers, pilasters, control joints, jambs, lintels, bond beams, etc. shall be similar in texture, size and color to the standard units.

C. Block Density: Normal weight - 140 lbs/cf; Light weight - 110 lbs/cf. Provide weight as indicated below unless otherwise indicated on the Drawings.

D. “R” values shall be calculated in accordance with current ASRAE standards and be approved by the State of Wisconsin.

2.03 Standard Concrete Masonry Units

A. Hollow Load Bearing Units: ASTM C90, Type II; nominal face dimensions of 8” x 16”.
   1. Provide normal weight block for exterior exposed block and below grade block where one side is backfilled.
   2. Provide normal or light weight block for exterior faced block and interior load bearing walls. May also use for interior non-load bearing walls.

B. Solid Load Bearing Units: ASTM C90, Type II; nominal face dimensions of 8” x 16”.
   1. Provide normal weight block for exterior exposed block and below grade block where one side is backfilled.
   2. Provide normal or light weight block for exterior faced block and interior load bearing walls.

C. Hollow Non-Load Bearing Units: ASTM C129, Type II; nominal face dimensions of 8” x 16”.
   1. Provide normal or light weight block for interior non-load bearing walls.

D. Concrete Building Brick: ASTM C55, Grade N, Type II.
   1. Provide normal weight block for exposed exterior.
   2. Provide normal or light weight block for exterior faced and interior walls..

2.04 SPLIT-FACED CONCRETE MASONRY UNITS

A. ASTM C90, Type II, normal weight; nominal face dimensions of 8” x 16”.

B. Texture: As indicated on the Drawings.

C. Color: Selected from manufacturer's standard colors unless specific color indicated on the Drawings or in the Bid Form.

D. Density Classification: Normal weight.

2.05 Insulated Masonry Units

A. Foamed-in-place masonry insulation; see Section 07 21 19.

2.06 Water Repellent

A. Provide polymeric water repellent admixture for exterior wall masonry units and for other walls when indicated on the Drawings; Rheopel by Rheomix, Dry Block, or equal.

B. Silicone Water Repellant: See Section 07 19 19.

2.07 Reinforcement and Anchorage

A. Single Wythe: Truss type; ASTM A82 steel, hot dipped galvanized after fabrication; 9 gauge or 3/16 inch deformed longitudinal wires and 9 gauge cross wires at maximum 16" O.C.; out-to-out spacing approximately 2 inches less than nominal block width; prefabricated corners and tees.

B. Double Wythe: Truss type with box tabs; ASTM A82 steel, hot dipped galvanized after fabrication; 9 gauge or 3/16 inch deformed longitudinal wires and 9 gauge cross wires at maximum 16" O.C.; out-to-out spacing approximately 2 inches less than nominal block width; box tabs at 16" O.C. with moisture drips; prefabricated corners and tees.

C. Strap Anchors: Stainless steel, 1 inch x 24 inch x 1/4 inch thick with minimum 3 inch upturned ends.

2.08 Mortar and Grout

A. Provide mortar and grout in accordance with Section 04 05 13.

2.09 Bond Beams and Lintels

A. Provide steel lintels of the size shown on the Drawings

B. Masonry Lintels and Bond Beams: Unless otherwise indicated on Drawings, provide 8-inch high units with a minimum of two No. 5 bars embedded in masonry grout.

2.10 Control Joints

A. Rubber Control Joint: Hohmann & Barnard, #RS Series or equal.

2.11 Flashing

A. Unless indicated otherwise on Drawings, provide one of the following:
   1. Metal Flashing: 26 gauge stainless steel.
   2. Flexible Flashing: Self-sealing, self-healing, fully adhering, composite flexible flashing consisting of a 32 mil highly adhesive rubberized asphalt compound bonded to an 8 mil, high density, cross-laminated polyethylene film; Perm-A-Barrier Wall Flashing, W.R. Grace & Co. or equal. Provide 26 gauge stainless steel drip when using flexible flashing.
   3. Flashing Pan: Flashing pan and interlocking CMU web cover made from high-density polyethylene with integral weep spouts; Blok-Flash by Mortar Net or equal.

2.12 Sills

A. Precast concrete or cast-in-place concrete, 3,000 psi; size and shape as shown on the Drawings.

PART 3 - EXECUTION

3.01 Examination

A. Verify that site conditions are ready to receive work.

B. Verify items provided by other Sections of work are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

D. Beginning of installation means acceptance of site conditions.

3.02 Preparation

A. Direct and coordinate placement of metal anchors supplied to other Sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 Coursing

A. Place masonry to lines and levels indicated.

B. Maintain masonry courses to uniform width. Make vertical and horizontal joints of uniform thickness.

C. Unless otherwise indicated on the Drawings, lay concrete masonry units in running bond. Lay architectural masonry units with joints matching vertical score of units. Course one block unit and one mortar joint to equal eight inches.

D. Unless otherwise indicated on the Drawings, tool joints on exposed or to be painted surfaces when thumb-print hard with round jointer for a concave joint.

E. Strike joints flush on surfaces to be plastered, covered with stucco, covered with other masonry, or covered with other surface finish other than paint.

3.04 Placing and Bonding

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with full mortar coverage on horizontal and vertical face shells.

C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.

D. Remove excess mortar as work progresses.

E. Interlock intersections and external corners.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustments must be made, remove mortar and replace.

G. Use masonry saws for jobsite cutting. Provide straight, clean, unchipped edges. Avoid use of less than half-size units.

H. Provide openings in partitions required by other trades and point up joints between masonry and metal work.

I. Cut mortar joints flush where wall tile is scheduled, where surfaces are to be plastered or stuccoed, where resilient base is scheduled, and where bituminous dampproofing is to be applied.

J. Isolate masonry partitions from vertical structural framing members with a control joint.

K. Isolate top joint of masonry partitions from horizontal structural members with compressible joint filler.

3.05 Cavity Wall

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep holes.

B. Build inner wythe ahead of outer wythe.

3.06 Joint Reinforcement

A. Place joint reinforcement at 16 inch intervals.

B. Place joint reinforcement in first and second horizontal joints above and below openings. Extend 16 inch minimum each side of opening.

C. Place joint reinforcement continuous in first and second joint below top of walls. Place joint reinforcement continuous in first, second, and third joints below top of walls for stacked bond.

D. Lap joint reinforcement ends a minimum of six inches.

E. Reinforce stack bond joint corners and intersections with strap anchors at 16” O.C.

3.07 Masonry Flashing

A. Install through wall flashing at top of all bond beams, steel lintels and sills. Flashing may be omitted if the bond beam terminates above the soffit material. Extend flashing 1/2 inch beyond edge of steel lintels and sills and to 1/2 inch of inner face of masonry. Lap flashing 4 inches at all joints and seal with mastic.

3.08 Lintels and Bond Beams

A. Install lintels over doors, windows, louvers, grills and similar items.

B. Install loose steel lintels as indicated on the Drawings.

C. Install masonry lintels over openings where steel lintels are not scheduled.

D. Provide eight inches of bearing on either side of opening.

E. Install bond beam around entire perimeter of building, at truss bearings, and at all precast concrete plank bearings.

F. Place and consolidate grout fill without disturbing reinforcing.

3.09 Control Joints

A. Do not continue horizontal joint reinforcing across control joints.

B. Install resilient control joint in continuous lengths. Heat weld butt and corner joints in accordance with manufacturer's instructions.

3.10 Grouted Components

A. Reinforce piers, columns and pilasters as shown on the Drawings.

B. Place and consolidate grout fill without disturbing reinforcing.

C. At bearing points, fill masonry cores with grout a minimum of 12 inches from opening.

3.11 Built-In Work

A. As work progresses, build in door frames, glazed frames, window frames, wood nailing strips, anchor bolts and other items necessary for other construction.

B. Install items plumb and level.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout. Fill adjacent masonry cores with grout a minimum of 12 inches from framed openings.

3.12 Cutting and Fitting

A. Cut and fit for chases, pipes, conduits, sleeves, and similar items. Coordinate with other trades to provide correct size, shape, and location.

B. Obtain approval of Engineer prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.13 Tolerances

A. Maximum Variation from Plumb

1. In lines and surfaces of walls, columns, and arises:
   a. 1/4 inch in 10 feet.
   b. 3/8 inch in any one story height or 20 feet whichever is less.
   c. 1/2 inch in 40 feet.
2. For external corners, expansion joints and other conspicuous lines:
   a. 1/4 inch in any one story height or 20 feet whichever is less.
   b. 1/2 inch in 40 feet.
3. Head joints:
   a. Plus or minus 1/4 inch in 10 feet.
   b. 1/2 inch maximum.

B. Maximum Variation from Level (Bed joints, and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines.)
1. 1/4 inch in any bay or 20 feet maximum.
2. 1/2 inch in 40 feet.

C. Variation From Plan Lines
1. 1/2 inch in any bay or 20 feet maximum.
2. 3/4 inch in 40 feet.

D. Variation in Cross Section: Minus 1/4 inch, plus 1/2 inch.

E. Variation in Mortar Thickness: Plus or minus 1/8 inch.

3.14 Silicone Water Repellent

A. Apply silicone water repellent to exterior walls in accordance with Section 07 19 19 unless otherwise indicated.

3.15 Cleaning

A. Remove excess mortar, sharp burrs and edges, and smears.

B. Replace defective mortar. Match adjacent work.

C. Fill nail holes with mortar.

D. Rake out mortar at control joints and prepare for caulking.

E. Dry-brush masonry surface after mortar has set at the end of each day's work and after final pointing.

F. Upon completion of the work clean all exposed surfaces with fiber brushes and water. Cleaning solution may be used. Do not use acid solution or metallic tools.

G. Protect glass, aluminum finishes, stone and other materials during cleaning. Contractor is responsible for any damage done during cleaning.

END OF SECTION

SECTION 04 25 16

THIN BRICK PANEL SYSTEM

PART 1 - GENERAL

1.01 Section Includes

A. Furnishing and application of thin brick panel system.

1.02 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 general requirements apply to this section.

1.03 Summary

A. Section Includes: Speedymason – Mortar Bed Panel System for Thin Masonry and related materials.
   1. Thin Brick and Stone
   2. Mortar
   3. Cleaning
   4. Embedded Flashing
   5. Drip Edge
   6. Expansion and Control Joints

1.04 References

A. ASTM C270 – Standard Specification for Mortar for Unit Masonry.

B. ASTM C1088 – Standard Specifications for Thin Veneer Brick Units Made from Clay or Shale.

C. ASTM C1714 – Standard Specification for Preblended Dry Mortar Mix for Unit Masonry.

1.05 Submittals

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations
   2. Storage and handling requirements and recommendations
   3. Installation methods

C. Shop Drawings:
   1. Indicate masonry layout, patterns, color arrangement, perimeter conditions, shape requirements, junctions with dissimilar materials, connections, and other related components.
   2. Locate and detail expansion and control joints
   3. Samples: Furnish not less than five (5) individual masonry units as samples, showing extreme variations in color and texture.

1.06 Quality Assurance

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6 unless modified by requirements in the Contract Documents.

B. Comply with all applicable codes, regulations, and standards. Where provision of applicable codes, regulations, and standards conflict with requirements of this section, the more demanding shall govern.

C. Manufacturer Qualifications:
   1. Obtain materials from one manufacturer to ensure compatibility.

D. Installer Qualifications:
   1. At least one supervisory journeyman who shall be always present during execution of work, who shall be thoroughly familiar with design requirements, type of materials being installed, reference standards and other requirements, and who shall direct all work performed at jobsite.

E. Sample Panel: Sample or mock-up panels shall be used to review installation process as well as thin brick and mortar color and serves as the standard of workmanship for the Project.
   1. Build mock-up panel for walls to receive Speedymason Mortar Bed Panel System as shown on drawings.
   2. Build mock-up panels for Mortar Bed Panel System for Thin Masonry in sizes approximately 36” by 36” high by full wall thickness.
      a. Approval of panel is for color, texture, and blending of masonry units; relationship of mortar to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.
      b. Do not start work until Architect/Owner has accepted sample panel.

1.07 Delivery, Storage, and Handling

A. Deliver materials in manufacturer’s original and unopened containers, identified with name, brand, type, and grade.

B. Store products in manufacturer’s unopened packaging until ready for installation.

C. Store Speedymason Mortar Bed Panel System for Thin Masonry and accessories off the ground to prevent contamination by mud, dust, or other materials likely to cause staining or other defects.

D. Protect materials from contamination, dampness, freezing, or overheating in accordance with manufacturer’s instructions.

E. Store different types of materials separately.

1.08 Project Conditions

A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.

B. Protection of Work:
   1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer’s absolute limits.
   2. Stain Prevention:
      a. Prevent mortar from staining the face of masonry.
      b. Remove immediately grout or mortar in contact with face of such masonry.
      c. Protect all sills, ledges, and projections from droppings of mortar.
      d. Protect the wall from rain-splashed mud and mortar splatter.
      e. Turn scaffold boards closest to the wall on edge when work is not in progress to prevent rain from splashing mortar and dirt onto masonry.

C. Cold Weather Requirements:

1. Do not use frozen materials or materials mixed or coated with ice or frost.
2. Do note build on frozen substrates.
3. Remove and replace unit masonry damaged by frost or by freezing conditions.
4. Comply with cold-weather construction requirements contained in TMS602/ACI 530.1/ASCE 6.
5. Comply with adhesive manufacturers application and temperature requirements.

D. Hot Weather Requirements:
1. Comply with hot-weather construction requirements contained in TMS 602/ACI 5301.1/ASCE 6.
2. Protect mortar from uneven and excessive evaporation.
   a. The face of the installed thin brick may be dampened with water prior mortar installation to reduce the absorption of moisture from the mortar joint and increase bond.
   b. Veneer may be fogged with water to allow the mortar enough time to set.
   c. Apply only enough moisture to consistently dampen the wall without allowing water to run down the face.
   d. Comply with adhesive manufacturer's application and temperature requirements.

PART 2 - PRODUCTS

2.01 Manufacturer

A. Acceptable Manufacturer: Speedymason, LLC located at 300 Sherry Lynn Lane, Sparta, WI 54656, Telephone: 608-855-5903, Email: info@speedymason.com, Web: www.speedymason.com or equal.

2.02 Materials

A. Full Bed Masonry Support Panel – General
1. Full Bed Masonry Support Panel intended for the interior or exterior structural mechanical support of thin veneer on concrete, masonry, metal, or frame construction.

B. Full Bed Masonry Support Panel
1. All Full Bed Panels for Thin Brick Support specified and shown on Drawings shall be as manufactured by Speedymason, LLC.

C. Clay & Stone Masonry Units
1. General: Provide shapes indicated and as follows:
   a. Provide special shapes for applications where flats (stretcher units) cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, shelf angles and lintels. Mitered units shall not be used at standard corners.
   b. Provide special shapes for applications requiring thin brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
   c. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.
2. All thin brick specified and shown on drawings shall be selected from contractor's supplier standard colors and patterns.
   a. Thin Brick: ASTM C 1088, Grade Exterior.
   b. Modular Size: 2-1/4" (57.2 mm) high, 7-5/8" (193.7 mm) long.
   c. Stone: Limestone ASTM C270, Grade Exterior. Size: per plans and sections.

D. Mortar
1. Thin Set Adhesive and Mortar for thin brick. Must be polymer modified mortar.
   a. Thin set adhesive shall exceed ANSI A 118.4 Shear Bond Requirements.

b. Mortar shall conform to ASTM C270 Standard Specification for Mortar for Unit Masonry under the guidelines provided in BIA Technical Notes #8 Series.
c. Mortar shall conform to ASTM C1714 Standard Specification for Preblended Dry Mortar for Unit Masonry.
1) Type [S] (Polymer Modified)
2. More for thin concrete or stone units.
a. Comply with masonry unit manufacturer's mortar requirements. Mortar shall conform to ASTM C270 Standard Specification for Mortar for Unit Masonry.
3. Cold Weather Additives (including accelerators) shall not be used in thin brick mortar mix.

E. Embedded Flashing Materials
1. Metal Flashing:
a. Drip Edge Galvanized sheet steel: ASTM A6530.0 24" (0.61 mm) (26-gauge), minimum ASTM A925 G-90 coating.

F. Control and Expansion Joints
1. Control and Expansion Joints should not be more than 18 ft. (5.5 m) either vertically or horizontally. Areas between movement joints should not exceed 144 sq. ft. (13.4 m^2).
2. Control joints should preferably be square in shape but may have a maximum length-to-height or height-to-length ratio of 2-1/2 to 1.

G. Fasteners
1. Screw fasteners shall be a minimum #6, minimum 0.138" (3.5 mm) shank diameter or #8, minimum 0.164" (4.2 mm) shank diameter with a wafer head and corrosion resistance provided by zinc plating with a minimum protection of 800 hrs. when tested according to ASTM B117.
2. Nail fasteners shall be ring-shanked stainless steel Miami/Dade approved roofing nails with a minimum 1-3/4" (19.05 mm) length.
3. Fastener Length:
a. Wood frame: Fasteners shall penetrate the studs a minimum of 1" (25 mm).

H. Sheathing
1. Provide sheathing, as designated on the plans.
2. Sheathing shall be the following as deemed suitable for specific project conditions:
a. CDX Plywood not less than 3/4" (15.9 mm) in thickness.

I. Masonry Cleaners
1. Proprietary Acidic Cleaner: Manufacturer's standard strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

PART 3 - EXECUTION

3.01 Examination

A. Do not begin installation until substrates and foundations as well as rough-in and built-in construction have been properly prepared.
1. Substrate shall have no planar irregularities greater than 1/4" in 10' (7 mm in 3.05 m).

B. Verify substrate including, concrete, masonry, or framing as well as sheathing and weather barrier are properly installed.

C. Verify walls are plumb and corners are braced to specifications.

D. Substrate must be flat, within 1/8” (3.2 mm) within any 4’ (1.2 mm) square area with no planar irregularities greater than 1/4" per 10 lin. ft.

E. If substrate, foundation, or flashings are the responsibility of another installer, notify Architect and General Contractor of unsatisfactory preparation before proceeding.

3.02 Preparation

A. Clean surfaces thoroughly prior to installation. All surfaces must be free of water, snow, dirt, mud, oil, and other foreign materials prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Trim or flash in place per manufacturer’s details and/or BIA Technical Note 7A on flashing of Brick Walls.

3.03 Installation, General

A. Install materials in accordance with manufacturer’s instructions.

B. Select and arrange exposed masonry units to produce a uniform blend of color and texture.
   1. Mix units from several panels or cubes as they are placed.

C. Comply with tolerances in TMS 602/ACI 530.1/ASCE 6.

3.04 Speedymason Panel

A. Install in accordance with manufacturer’s written instructions as applicable to each type of substrate required.
   1. See www.speedymason.com for installation guide.

B. Trim, starter angle and flashing shall be installed prior to panel installation.

C. Walls shall be constructed of structurally sound masonry, wood, or steel studs, with an approved building sheathing and weather resistant barriers as required.

D. Panels shall be clean, free of dirt, oil, or any other foreign contaminant.

E. Lay out panels in advance for accurate spacing of tabs to allow installation of full height masonry units at top and bottom of walls, openings, etc. when possible. Note: Panel sizes will vary depending on spacing.

F. Attach panels flat to the substrate in true and level rows with support ties aligned and level to each other at flat sections as well as corners with the female edge facing down.

G. Do not allow panels to bridge movement joints in substrate.

H. Install panels to butt the sides of the panels and butt panels vertically, always leaving a gap at movement joints locations equal to the thickness of the joint.

I. Stop panel 1/4" to 3/8” from inside corners, openings, and other materials to allow for movement.

J. Fastener Installation: Mechanically attach panels with a minimum of one fastener per 8” of each fastener strip on the Speedymason panel and at the edge along the top and bottom of the wall and around openings.

1. Horizontal fastener spacing shall not exceed 8” for exterior and 16” for interior; vertical fastener spacing shall have a fastener per fastener strip.
2. Provide additional anchors around the perimeter of walls as well as openings larger than 24” (406 mm) in either dimension, as well as building corners not utilizing corner panels as follows:
    a. Install fasteners a minimum of four (4) per sq. ft. (900 cm^2).
        1) At the top and bottom of the walls, fasteners shall be spaced a maximum of 8” (305 mm) horizontally and within the height of a single row or course of masonry.

3.05 Fasteners (for Speedymason)

A. Attach fasteners to the framing through the sheathing.

B. Fasteners for wood frame shall penetrate the stud or sheathing a minimum of 1” (25 mm).

3.06 Thin Veneers

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement joints, returns, and offsets.
    1. Avoid using less-than-half-size units, particularly at corners and jambs.
    2. Ensure unfinished or cut faces are not exposed to view upon completion.

B. Select and arrange units for exposed unit masonry to produce a uniform blend of color and texture.

C. Lay masonry in bond pattern as indicated on drawings or general notes.

D. Back face of thin brick must be dry and clean, free of dirt, oil, or any other foreign contaminant.

E. Leave a uniform 3/8” to 1/2" (9.5 to 12.7 mm) gap at openings to allow for movement joint installation.

F. Thin veneers shall be applied within 15 minutes after thin set adhesive has been applied and before film begins to form on the thin set adhesive.

G. Space thin brick to ensure that the head joints do not exceed 5/8” (16 mm) or fall below 1/4" (6.4 mm).

H. Keep areas intended to receive sealant clean of thin brick, adhesive, and other materials during construction.

I. Do not allow masonry units to bridge movement joints in substrate.

3.07 Mortar Installation and Jointing

A. Use an approved Polymer Modified Mortar Mix (bed mix) to mechanically bond thin brick to panel.
    1. Trowel the mortar onto the panel and expose the coursing on the Speedymason Panel.
    2. Place the thin veneer on the panel leg.
    3. Bag joints with a Type N or S Mortar (not a polymer modified mortar). Strike joints using a joint profile tool.

B. Tool exposed joints to profile listed below:
    1. Joint Profile: Tool mortar joints to a concave appearance.

3.08 Flashing

A. Install embedded flashing in Speedymason Mortar Bed Panel System for Thin Masonry assemblies at the base of the wall; above openings, above horizontal movements joints and other obstructions to downward flow water in wall and where indicated.

B. Before covering with wall panel or mortar, seal penetrations in flashing with adhesive, sealant, or tape, as recommended by flashing manufacturer.

C. Carry flashing vertically as detailed, but not less than 3” (76 mm) above horizontal plane.

D. Lap flashing a minimum of 3” (76 mm) or recommended by local building code.

E. Seal all flashing laps with compatible lap cement or tape.

F. Extend head and sill flashings not less than 6” (150 mm) beyond edges of openings; seal with mastic.

G. Project starter angle from face of wall approximately 1/4" (6 mm) to form a drip.

3.09 Control and Expansion Joints

A. Keep clean of all mortar, adhesive, and debris.

B. Locate joints were indicated on drawings.

C. Provide vertical and horizontal pressure-relieving joints were indicated by installing sealant, and inserting a compressible filler when required, as specified in Division 07 Section Joint Sealants, “but not less than 3/8” (10 mm). Backer rod may not be required and is dependent upon depth of joint.

D. Install joints between Mortar Bed Panel System for Thin Masonry wall assemblies and other materials including around windows and doors.

E. Install joints at changes in substrate and where movement joints occur in substrate.

F. Vertical joints must not exceed 16’ (488 cm) on center in walls without openings; include joint within 4’ (122 cm) of the corners.

G. Install horizontal joints on wood frame walls at every floor level.

H. Install horizontal joints on [steel frame or masonry or concrete] walls every [1 or 2] stories.

3.10 Cleaning

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove adhesive as well as mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Cut out all defective mortar joints and holes in exposed masonry and provide new mortar.
   2. Clean preselected sample wall area with specified cleaning solution as per manufacturer’s recommendations. Do not proceed with cleaning until approved by Architect.
   3. Clean thin brick in accordance with manufacturer’s written instructions.
   4. Protect adjacent stone and non-masonry surfaces from contact with cleaner.

END OF SECTION