



The following information has been compiled as a Guide Specification for TABS Wall Systems Support Panel. The numbers and titles used to identify this, and related specification sections are in accordance with the 2004 Construction Specifications Institute Master Format.

This guide specification is intended to assist the Design Professional/Specifier in selecting appropriate products and preparing a project specification section for TABS Wall Systems and is not intended to be all inclusive. Additional Technical information related to TABS Wall Systems and designs utilizing the TABS Wall Systems panels upon request. The Design Professional/Specifier is responsible for the use and the application of this information.

Confirm and edit guide specifications to ensure conformance to local building codes. Sections beginning with **NOTE TO SPECIFIER: indicate action is required: edit/select/add/delete to suit specific project requirements.**

Optional text is indicated by brackets []. Delete unused optional text and brackets in final specification. Coordinate all Sections with other materials and project conditions of the contract.

PART 1: GENERAL

1.1 RELATED DOCUMENTS

- A.** Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 general requirements apply to this section.

1.2 SUMMARY

- A.** Section Includes: TABS Wall Systems Panel System and related materials.

NOTE TO SPECIFIER: Delete items below not required for project.

1. Thin Brick.
2. Glazed Thin Brick
3. Mortar
4. Cleaning
5. Embedded flashing
6. Weep holes/Vents
7. Control/Movement Joints
8. Fasteners

- B.** Related Sections:

NOTE TO SPECIFIER: Delete any sections below not relevant to this project; add others as required.

1. Division 03 Section – “Cast-in-Place Concrete”
2. Division 03 Section – “Precast Concrete”
3. Division 04 Section – “Unit Masonry”
4. Division 05 Section – “Structural Metal Framing”
5. Division 05 Section – “Cold Form Metal Framing”
6. Division 05 Section – “Metal Fabrications”
7. Division 06 Section – “Rough Carpentry
8. Division 06 Section – “Sheathing”
9. Division 07 Section – “Damp Proofing and Waterproofing”
10. Division 07 Section – “Thermal Protection”
11. Division 07 Section – “Flashing and Sheet Metal”
12. Division 07 Section – “Joint Protection”
13. Division 08 Section – “Wall Vents
14. Division 09 Section – “Plaster and Gypsum Board
15. Division 09 Section – “Tile”
16. Division 13 Section – “Pre-Engineered Structures”

NOTE TO SPECIFIER: Delete references from the list below not required by the text of the edited section.

1.3 REFERENCES

- A. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- B. ASTM A 240 – Standard Specification for Chromium and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- C. ASTM A 653 – Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvanized) by the Hot Dip Process.
- D. ASTM A 925 – Standard Specification for Zinc 5% Aluminum Mischmetal Alloy Coated Steel Overhead Ground Wire Strand.
- E. ASTM B 117 – Standard Practice for Operating Salt Spray (Fog) Apparatus.
- F. ASTM C 126 – Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
- G. ASTM C 270 – Standard Specification for Mortar for Unit Masonry.
- H. ASTM C 847 – Standard Specification for Metal Lath.
- I. ASTM C 1714 – Standard Specification for Pre blended Dry Mortar Mix for Unit Masonry.
- J. ASTM C 1088 – Standard Specification for Thin Veneer Brick Units Made from Clay or Shale.
- K. ASTM D 226 – Standard Specification for Asphalt Saturated Organic Felt used in Roofing and Waterproofing.
- L. ASTM D 1056 – Standard Specification for Flexible Cellular Materials Sponge or Expanded Rubber.
- M. TMS 602/ACI 530.1/ASCE 6 – Specifications for Masonry Structures.
- N. Miami-Dade Notice of Approval
- O. **Standard:** NFPA 285 – Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies containing Combustible Components
- P. ASTM D1761-Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials
- Q. ASTM C1935 – Standard Practice for Installation Methods for Adhered Veneer Systems Using Thin Brick Units Made from Clay or Shale.
- R. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
- S. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- T. ASTM D1037 – Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
- U. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.
- V. ASTM C1338 – Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
- W. ASTM C794 – Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
- X. ASTM E2273 – Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies.
- Y. ASTM D3498 – Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems.
- Z. ASTM C1583/C1583M – Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method).

1.4 SUBMITTALS

- A. Submit under provisions of Section 013000.
- C. 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. Product Detail Drawings
 - a. Indicate masonry layout, patterns, color arrangement, perimeter conditions, shape requirements, junctions with dissimilar materials, connections, and other related components.
 - b. Locate and detail expansion and control joints.
- E. Samples: Furnish not less than five (5) individual masonry units as samples, showing extreme variations in color and texture.

1.5 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 the provision of applicable codes, regulations, and standards conflict with the requirements of this section the more demanding shall govern.

NOTE TO SPECIFIER: Insert additional qualifications below if required.

- C. Metal Panel System
 - a. Obtain Metal Panel System Materials from the manufacturer to ensure compatibility.
 - b. Manufacturer's Qualifications
 - 1. A Twenty year history of corporate experience with metal supported unit masonry panels.
 - 2. Documented qualifications and capabilities that fully describe the ability to provide the required metal panel system and technical support to the Owner.
- D. Testing and reports shall be completed by an independent laboratory.
 - a. Test reports for the panels shall be submitted to the Architect/Engineer for review.
 - b. Metal panel System **MUST** meet or exceed the following performance standards:

- 1) **ASTM D 3-498 ADHESIVE**
- 2) **ASTM E-72 WINDLOAD TEST OF BUILDING PANELS**
- 3) **ASTM E-119-00 FIRE RESISTANCE TEST**
- 4) **ASTM-84-03 SURFACE BURN SPREAD & SMOKE DEVELOPMENT**
- 5) **ASTM B-117-03 1000 HOUR SALT SPRAY TEST**
- 6) **ASTM D1037-99 NAIL-HEAD PULL-THROUGH**
- 7) **ASTM E 2273-03 PER EG356-2006 WATER DRAINAGE**
- 8) **ICC-ES EG356 3.1.6 ACCELERATED WEATHERING**
- 9) **ASTM E96-05 ICC-ES EG356 SECTION 3.1.3 WATER VAPOR TRANSMISSION**
- 10) **ASTM C1338-02 ICC-ES EG356 SECTION 3.1.1 FUNGI**
- 11) **STATE OF FLORIDA FBC#**
- 12) **MIAMI-DADE COUNTY PRODUCT CONTROL NOTICE OF APPROVAL**
- 13) **PASSED NFPA 285 FULL ASSEMBLY TEST REPORT**
- 14) **ASTM C-794 PEEL ADHESION TEST of SILICONE ADHESIVE**

NOTE TO SPECIFIER: Insert additional qualifications below if required.

A. Installer Qualifications: It is the Purchasers responsibility to choose and select a Qualified Installer. Tabs recommends they meet the qualifications listed below.

- a. The installer shall demonstrate acceptable prior experience installing Tabs Wall Systems or similar products, via project history or acceptable mock-up prior to project award and has read and understands the requirements for product warranty.
- b. At least one supervisory journeyman who is thoroughly familiar with the design requirements, type of materials being installed, reference standards, manufacturers installation guidelines and other job requirements shall always be present to oversee and direct all work performed.
- c. The General Contractor shall have onsite a project superintendent with the same qualifications described in paragraph "B" above.

NOTE TO SPECIFIER: Include a mock-up panel if the project size and/or quality warrant taking such a precaution.

- A. Material Certificates: Prior to delivery site, submit to Architect/Engineer certificates indicating compliance with the applicable specifications for Thin Brick Grades, Types or Classes included in these specifications.
- B. Thin Brick Test Reports: Submit test reports substantiating compliance with requirements: Sample and test in accordance with ASTM C 67
 - a. Testing and reports shall be completed by an independent laboratory.
 - b. Test reports for each type of brick shall be submitted to the Architect/Engineer for review.
 - c. Thin brick test reports shall indicate:
 1. 2-hour cold water absorption
 2. 5-hour boil absorption
 3. Saturation coefficient
 4. Initial rate of absorption
 5. Efflorescence

NOTE TO SPECIFIER: Delete subsection below if glazed thin brick is not required for the project.

- A. Glazed Thin Brick Test Reports: Submit test reports substantiating compliance with requirements: Sample test in accordance with ASTM C 67 for the brick body and C 126 for the glazed surface. Test reports for each type of thin brick shall be submitted to the Architect/Engineer for review.
 - a. Glazed Thin Brick Test reports for the body shall indicate:
 1. 2-hour cold water absorption
 2. 5-hour boil absorption
 3. Saturation coefficient
 4. Initial rate of absorption
 5. Efflorescence

- b. Glazed Thin Brick Test reports for the glazed surface shall indicate:
 - 1. Imperviousness
 - 2. Opacity
 - 3. Resistance to fading.
 - 4. Resistance to crazing
- B. Costs of Tests: Cost of tests shall be borne by the purchaser, unless tests indicate that units do not conform to the requirements of the specifications, in which case cost shall be borne by the seller.
- C. Shop drawings: Submit individual drawings to be approved by architect for special shaped thin brick units.

NOTE TO SPECIFIER: Include a sample panel and/or mockup panel if the project size warrants taking such a precaution. The following is one example of how a mock-up panel on a large project might be specified.

- D. Sample Panel: Sample or Field mock-up panels shall be used to review the installation process as well as thin brick and mortar color and serve as the standard of workmanship for the Project.
 - a. Build [sample] [mock-up] panel for walls to receive TABS Wall System as shown on drawings.
 - b. Build Mock-up panels for Tabs Wall System in sizes approximately [48 inches (1,219.2mm)] <Insert size> long by [48 inches (1,219.2mm)] <Insert size> high by full wall thickness.
 - 1. All thin brick shipped for the sample shall be included in the panel.
 - 2. Use panel as standard of comparison for all masonry work built of same material.
 - 3. Where masonry is to match existing, erect Field panel adjacent and parallel to existing surface.
 - 4. Clean [one-half of] exposed faces of panel with masonry cleaner as indicated and approved by manufacturer.
 - 5. Protect accepted Field panel from the elements with weather-resistant membrane.
 - 6. Approval of Field 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.

7. Do not start work until Architect/Engineer/Owner has accepted sample Field panel.
8. Do not destroy or move Field panel until work is completed and accepted by Architect/Engineer/Owner.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's unopened containers, identified with name, brand, type, and grade.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store TABS Wall Systems Panels and accessories off the ground, to prevent contamination by mud, dust, or other materials likely to cause staining or other defects.
- E. Protect materials from contamination, dampness, freezing, or overheating in accordance with manufacturer's instructions.
- F. Store different types of materials separately.
- G. Adhesive and Mortar Additive are to be stored above 32° Fahrenheit and below 86° Fahrenheit temperatures & no direct sun light.
- H. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 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:
 - a. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.
 - b. Stain Prevention:
 1. Prevent adhesive and mortar from staining the face of masonry.
 2. Remove immediately grout or mortar in contact with face of such masonry.
 3. To avoid the smearing of adhesive on the face of masonry, allow adhesive on face of installed masonry to set before trying to remove.
 4. Protect all sills, ledges, and projections from droppings of adhesive or mortar.
 5. Protect the wall from rain-splashed mud and mortar splatter.
 6. 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.

NOTE TO SPECIFIER: Weather conditions affect application and drying time of adhesive and mortar. Hot or dry conditions limit working time and accelerate drying and may require adjustments in the scheduling of work to achieve desired results. Cool or damp conditions extend working time and retard drying and may require additional measures of protection against wind, dust, dirt, rain and freezing.

C. Cold Weather Requirements:

- a. Do not use frozen materials or materials mixed or coated with ice or frost.
- b. Do not build on frozen substrates.
- c. Remove and replace unit masonry damaged by frost or freezing conditions.
- d. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE
- e. Comply with TABS Adhesive application and temperature requirements as stated in the TABS Installation Manual.

D. Hot Weather Requirements:

- a. Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE
- b. Protect mortar from uneven and excessive evaporation.
 - 1. The face of the installed thin brick may be dampened with water prior to mortar installation to reduce the absorption of moisture from the mortar joint and increase bond.
 - 2. Veneer may be fogged with water to allow the mortar enough time to set. Apply only enough moisture to consistently dampen the wall without allowing water to run down the face.
- c. Comply with Tabs Wall Systems application and temperature requirements.
- d. Protect and shade panels from extended exposure to direct sun, excessive heat can cause adhesive to flow.

PART 2: PRODUCTS

2.1.1 METAL MASONRY SUPPORT PANEL, GENERAL

- A. Metal Masonry Support Panel intended for the interior or exterior structural mechanical support of thin veneer on concrete, masonry, metal, or wood frame construction. Structural grade 33 (.018) steel with G90 galvanized thermal set coating and stucco embossed texture with Tabs Support & Mortar Locking Ties.

2.1.2 MANUFACTURERS

- A. Acceptable Manufacturer: TABS Wall Systems, LLC located at: • 4515 Airwest Dr SE • Grand Rapids, MI 49512 • 616-554-5400 • Web: www.tabswallsystems.com
- B. Substitutions: NONE

NOTE TO SPECIFIER: Delete size options and panel type not required for project. Additional sizes may be available; verify availability with local TABS Wall Systems Representative.

2.1.3 METAL MASONRY SUPPORT PANELS

- A. All Metal Panels for Thin Brick Support specified and shown on drawings shall be [TABS Wall Panel] as manufactured by the TABS Wall Systems LLC.

- a. Flat Panels: 16-square foot (1.44 m²) masonry support panels for flat wall areas 48-inch (1,219.2 mm) x 48-inch (1,219.2 mm) nominal (see below), shall have support spacing as follows (actual dimensions listed):
- B. Available Sizes: TABS lengths 5/16" (7.9375 mm), 9/16" (14.2875mm)
 - a. 2-5/8 inch (66.675 mm) for Modular, standard, Norman, and other 2-1/4" (57.2mm) high units. TABS II panel size: 47 7/8" (1193.8 mm) x 48" (1,219.2 mm).
 - b. 2-5/8 inch (66.675 mm) for Modular, Standard, Norman, and other 2-1/4" (57.2mm) high units. TABS II panel size: 23 7/8" (752/475 mm) x 48" (1,219.2mm)
 - c. 3-inch (76.2 mm) for Modular, standard, Norman, and other 2-5/8" (66.675mm) high units. TABS II panel size: 47 7/8" (1,193.8mm) x 48" (1,219.2 mm)
 - d. 3-1/8 inch (79.375 mm) for Engineer, Queen, and other 2-3/4 inches (95.2 mm) high units. TABS II panel size: 47 7/8" (1,214.45 mm) x 50" (1,270 mm)
 - e. 4-inch (101.6 mm) for Engineer and other 3-5/8 (92.075 mm) inches high units. TABS II panel size: 47 7/8" (1,214.45mm) x 48" (1,219.2 mm).
 - f. 8-inch (203.2 mm) for 8-Square and other 7-5/8" (193.7 mm) high units. TABS II panel size: 47 7/8" (1,193.8mm) x 48" (1,219.2 mm)
 - g. 12-inch (304.8 mm) for 11-5/8" (295.3 mm) high units. TABS II panel size: 47 7/8" (1,193.8mm) x 48" (1,219.2 mm)
 - h. 2" inch (50.8 mm) for Roman 1-5/8" (41mm) high units. TABS II panel size: 48" (1,219.2 mm) x 48" (1,219.2mm)
 - i. 2-7/8" inch (73 mm) for California Standard 2-7/16" (61.9 mm) high units. TABS II panel size: 48" (1,219.2 mm) x 46" (1170 mm)

NOTE TO SPECIFIER: Delete corner panels if not required. Corner panels are required to reduce the possibility of cracking due to differential movement, particularly in wood stud applications. Additional sizes may be available; verify availability with the local TABS Wall Systems dealer.

- C. Pre-Bent Corner Panels: 8-square foot (1.44 m²) masonry support panels for external corner applications 24-inch high (nominal) with 16-inch (406 mm) leg and 32-inch (813 mm) leg or 24 x 24 leg each side.
 - a. Support spacing to match flat panels specified above.

2.2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed work.

2.2.2 MANUFACTURERS

- A. Acceptable Manufacturer: [Add Thin Brick • Product Name • Manufacturers]

2.2.3 CLAY MASONRY UNITS

A. General: Provide shapes indicated and as follows:

NOTE TO SPECIFIER: Standard shapes such as corners, edge caps, 1/2 flats, 1/2 corners and thicker units for corbelling or accents, as well as custom shapes are often available. Verify shapes availability with a TABS Wall Systems Representative or Local Distributor.

- 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.

NOTE TO SPECIFIER: Insert product name(s) required for project.

B. All Thin Brick specified and shown on drawings shall be [Add thin brick product Manufacturer's name(s) here]

- a. Thin Brick: ASTM C 1088, Grade Exterior

NOTE TO SPECIFIER: Delete types not required.

1. Type [TBS], [TBX] [or] [TBA]
2. Size (height, length - actual dimensions listed)

NOTE TO SPECIFIER: Delete size options not required for project. Size availability varies by product and may be available in additional sizes not listed below. Verify availability with thin Veneer Manufacturer.

- a) Modular Size: 2-1/4 inches (57.2 mm) high, 7-5/8 inches (193.7 mm) long
- b) Engineer Modular: 2-3/4 inches (69.9 mm) high, 7-5/8 inches (193.7 mm) long
- c) Standard Size: 2-1/4 inches (57.2 mm) high, 8 inches (203.2 mm) long
- d) King Size: 2-5/8 inches (66.675 mm) high, 9-5/8 inches (244.475 mm) long
- e) Engineer Standard Size: 2-3/4 inches (69.8 mm), 8 inches (203.2 mm) long
- f) Handmade Oversize: 2-3/4 inches (69.8 mm), 8-1/2 inches (215.9 mm)
- g) Econo-Size: 3-5/8 inches (92.1 mm) high, 7-5/8 inches (193.7 mm) long
- h) 8-Square: 7-5/8 inches (193.7 mm) high, 7-5/8 inches (193.7 mm) long
- i) Norman Size: 2-1/4 inches (57.2 mm) high, 11-5/8 inches (295.3 mm) long
- j) Utility Size: 3-5/8 inches (92.1 mm) high, 11-5/8 inches (295.3 mm) long
- k) (Other) Size: [add size] inches wide, [add size] inches high, [add size] inches long

NOTE TO SPECIFIER: Delete thickness options not required for project. Thickness availability varies by product and may be available in additional thicknesses not listed below including thicknesses for use as soaps (1/2 brick), corbelled areas and other applications. Verify availability with thin Veneer Manufacturer.

3. Thickness: [1/2 inch (13 mm)] [3/4 inch (19 mm)] [or] [1inch (25 mm)]

NOTE TO SPECIFIER: Delete first paragraph and subparagraphs below if no Glazed Thin Brick are required.

- C. All Glazed Thin Brick specified and shown on drawings shall be [Add thin brick product Manufacturer's name(s) here] as
- a. Glazed Thin Brick: ASTM C 1088, Grade Exterior, Type TBX for the brick body and ASTM C 126 Grade S, Type 1 for glazed surface requirements.

NOTE TO SPECIFIER: Delete size options not required for project. Size availability varies by product and may be available in additional sizes not listed below. Verify availability with Thin Veneer Manufacturer.

- b. Size (actual dimensions listed)
 1. Modular Size: 2-1/4 inches (57.2 mm) high, 7-5/8 inches (193.7 mm) long
 2. Engineer Modular: 2-3/4 inches (69.9 mm) high, 7-5/8 inches (193.7 mm) long
 3. Standard Size: 2-1/4 inches (57.2 mm) high, 8 inches (203.2 mm) long
 4. King Size: 2-5/8 inches (66.675 mm) high, 9-5/8 inches (244.475 mm) long
 5. Engineer Standard Size: 2-3/4 inches (69.8 mm), 8 inches (203.2 mm) long
 6. Econo Size: 3-5/8 inches (92.1 mm) high, 7-5/8 inches (193.7 mm) long
 7. 8-Square: 7-5/8 inches (193.7 mm) high, 7-5/8 inches (193.7 mm) long
 8. Norman Size: 2-1/4 inches (57.2 mm) high, 11-5/8 inches (295.3 mm) long
 9. Utility Size: 3-5/8 inches (92.1 mm) high, 11-5/8 inches (295.3 mm) long
 10. (Other) Size, [add size] inches wide, [add size] inches high, [add size] inches long

NOTE TO SPECIFIER: Delete thickness options not required for project. Thickness availability varies by product and may be available in additional thicknesses not listed below including thicknesses for use as soaps (1/2 brick), corbelled areas and other applications. Verify availability with Thin Veneer Manufacturer.

c. Thickness [3/4 inch (19 mm)] [or] [1inch (25 mm)]

- D. Provide brick similar in texture, color, and physical properties to those available for inspection at the Architect/Engineer's office and/or as supplied on the approved sample panel.

2.3 MORTAR

NOTE TO SPECIFIER: Delete mortar not required. Add Project specific requirements.

- A. Mortar for thin brick
 - a. Mortar shall conform to ASTM C 270 Standard Specification for Mortar for Unit Masonry under the guidelines provided in BIA Technical Notes #8 Series.
 - 1. Type [S]
- [OR]
- b. Mortar shall conform to ASTM C 1714 – Standard Specification for Pre-blended Dry Mortar Mix for Unit Masonry.
 - 1. Type [S]
 - 2. Mortar for thin [concrete] [or] [stone] units
 - 3. Mortar material shall comply with code requirements of an S-Grade mortar. The mortar must be mixed using a solution of five parts water to one part TABS Latex Acrylic Additive. The additive shall be supplied by Tabs Wall Systems, LLC.
 - 4. Cold Weather Additives (Including accelerators) shall not be used in thin brick mortar mix.
- B. Comply with masonry unit manufacturer's mortar requirements. Mortar shall conform to ASTM C 270 Standard Specification for Mortar for Unit Masonry.
- C. Cold Weather Additives (including accelerators) shall not be used in thin brick mortar mix.

2.4 EMBEDDED FLASHING MATERIALS

NOTE TO SPECIFIER: Starter angle listed below for use as flashing for TABS Wall System Panel. Delete flashing options not required for project or referenced in specification Division 7.

- A. Metal Flashing:
 - a. TABS Wall System Starter Angle: Minimum [Galvanized sheet steel: ASTM A653 0.024 inch (0.61) (26 gauge), minimum ASTM A925 G-90 coating] [or] [Stainless Steel: ASTM A 240/A 240M, Type 304, G-90 & Paint finish 0.019-inch (0.45mm) (24 gauge)] pre-bent in 10 ft. (304.8 cm) lengths.
- B. Flexible Flashing:
 - a. Rubberized Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than [0.030 inch (0.76 mm)] [0.04 inch (1.02 mm)].
 - b. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene inter polymer alloy as follows:
 - 1. Monolithic Sheet: Elastomeric thermoplastic flashing, 0.040 inch (1.0 mm) thick.
 - 2. Self-Adhesive Sheet: Elastomeric thermoplastic flashing, 0.020 inch (0.5 mm) thick, with a 0.015-inch- (0.4-mm-) thick coating of rubberized-asphalt adhesive.

- C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.5 Weep holes

- A. Standard weep holes for draining wall panels can be formed by omitting mortar/sealant at intervals of one per 16 inches or every other brick head joint.

NOTE TO SPECIFIER: Typical TABS Wall System Panel applications do not require compressible fill. Backer rod or bond breaker tape shall be used in all joints per Division 7 Section "Joint Sealants".

2.6 Control/Movement Joints

- A. Control/movement joints shall be installed within 2'-4' of outside corners, and shall not exceed 24' on center vertically or 18' on center horizontally per story, regardless of wall type. Where the panel system is applied over concrete or masonry (CMU) backup walls, control/movement joints shall coincide with the control joints of the backup wall, in addition to the requirements above. Minimum joint width: 3/8".

NOTE TO SPECIFIER: Fasteners are dependent upon substrate construction. More than one type of fastener may be required on a single project. REVIEW construction conditions and DELETE fasteners that are unnecessary or inappropriate for specific project.)

2.7 Fasteners

NOTE TO SPECIFIER: Consult Tabs Wall Systems to determine the best fastener for project conditions. Using the incorrect fasteners may void the Tabs Wall Systems Warranty.

- A. Screw fasteners shall be a minimum [#8, minimum 0.138 inch (3.5 mm) shank diameter] [or] [#8, minimum 0.164 inch (4.2 mm) shank diameter] with a [wafer,] [pancake] [or] head and corrosion resistance provided by [G-90 zinc plating] [or test were with a #8[stainless steel] with a minimum protection of 1000 hours when tested according to ASTM B 117.
- B. Fasteners to mount the panel shall be TabGuard for use on wood or steel stud installations; or TabCon for use on masonry installations, supplied by Tabs Wall Systems, LLC.

NOTE TO SPECIFIER: Delete subparagraphs below that are unnecessary or inappropriate for specific project.

- C. Fastener Lengths
 - a. Wood frame: Fasteners shall penetrate the studs a minimum of 1" (25 mm).
 - b. [Masonry] [or] [Concrete]: Fasteners shall penetrate the substrate a minimum of 1" (25 mm).
 - c. Steel studs, girts or purlins: Self-tapping/self-drilling fasteners shall penetrate a minimum 1/4" (6.4 mm), or not less than three exposed threads behind the stud flange, girt or purlin.

2.8 ADHESIVE

- A. Tabs Adhesive for thin [clay brick] [or] [concrete masonry unit]
 - a. High-strength adhesives must exceed ASTM D3498 and ASTM C557 TABS adhesive manufacturer's specifications for TABS with less than 70 grams of VOC per liter with a shear value between the thin veneer and the panel greater than 100 PSI (10.5 kg/cm²).
- B. Tabs Structural Silicone for [natural stone, cast stone or marble]

NOTE TO SPECIFIER: Verify specific project needs regarding fire and moisture resistance as well as structural requirements prior to specifying sheathing.

2.9 SHEATHING

- A. Provide sheathing, as designated in section 060000.
 - B. Sheathing shall be one of the following combinations as deemed suitable for specific project conditions: a,c,a+b or b+c. **Not b alone.**
 - a. Exterior grade gypsum sheathing or glass fiber mat-faced sheathing or cement board, not less than 5/8"-inch (15.875 mm) in thickness.
 - b. Closed -cell insulating rigid foam (IPS panel) not less than 1/2-inch (12.7 mm) and no greater than 2" (50.8 mm) thick conforming to ASTM C 578 or ASTM C 1289. For greater than 2" thickness consult with TABS
- [OR]
- c. Exterior grade plywood not less than 1/2-inch (12.7 mm) or greater in thickness(5-Ply CDX is preferred vs OSB)

2.10 WEATHER BARRIERS

NOTE TO SPECIFIER: Delete subsection if assembly does not require weather barrier (e.g., concrete or masonry substrate). For frame construction, TABS Wall Systems, LLC recommends a minimum of one Weather Barrier Climatically specific moisture vapor flow must also be considered in the selection of materials for the water resistive barrier. Determine if the potential for condensation exists within the wall and make necessary changes to the wall design as needed.

- A. Water Infiltration barrier shall be Green Guard RainDrop Wrap or Henry Air-Bloc Fluid Applied WRB by Tabs Wall Systems, LLC or equal.

2.11 RAIN SCREEN

- A. Rain screen, if required for additional moisture drainage and ventilation shall be Sure Cavity, 3mm, 5mm, or Fire Rated Sure Cavity supplied by Tabs Wall Systems, LLC or equal.

2.12 INSULATION

- A. Insulation, if required, shall be Green Guard extruded polystyrene insulation board or Kingspan Kooltherm K-15 Rainscreen Board, 1", 1-1/2", or 2" maximum, supplied by Tabs Wall Systems, LLC, or equal.
- B. Continuous Insulation & NFPA -285: For projects requiring compliance with the National Fire Prevention Association's 285 Flame Spread Test, supply Independent Laboratory Tested approved assemblies.

2.13 CLEANING

- A. Proprietary Acidic Cleaner: Brick 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.

NOTE TO SPECIFIER: Contact the Brick Manufacturer to determine cleaning solution and procedure for thin brick specified. Verify acceptability of cleaner for cleaning masonry with pigmented mortar joints. Delete solution(s) not recommended.

- a. Diedrich Technologies, Inc.
 - 1. 202 New Masonry Detergent
 - 2. 202V Vana -Stop®
 - 3. <other as recommended by masonry unit and mortar manufacturer.>

PART 3: EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates and foundations as well as rough-in and built-in construction have been properly prepared.
 - a. Walls must be structurally sound, and the substrate system designed with a wall deflection not greater than L/360.
 - 1. Maximum wall frame spacing for stud walls = 406.4 mm (16") O.C.
 - 2. Maximum wall frame spacing for girts = 609.6 mm (24") O.C.
 - 3. Minimum 0.043-inch (18-gauge; 1.09 mm) studs for exterior walls.
 - b. Substrate shall have no planer irregularities greater than 7 mm in 3.05 m (1/4" in 10').
- B. Verify substrate including concrete, masonry or framing as well as sheathings and weather barrier are properly installed. TABS Wall Systems Support Panel Guide Specification
- C. Verify walls are plumb and corners are braced to specifications.

D. Substrate must be flat, within 1/8-inch (3.2 mm) within any 4-foot (1.2 m) square area with no planar irregularities greater than 1/4" per 10 linear feet.

E. If substrate, foundations, or flashings are the responsibility of another installer; notify Architect, Owner, and General contractor of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation. All surfaces must be free of water, snow, frost, 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.

3.2 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.
a. Mix units from several pallets or cubes as they are placed.

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

3.4 TABS PANEL SYSTEM

A. Install in accordance with manufacturer's written instructions as applicable to each type of substrate required.

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 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.

G. Stagger metal panel joints over sheathing joints. This requires cutting 1/2 panels when starting at outside or inside corners. When using pre-bent corner panels, stagger joints of flat panels after corner panel installation for control joint placement.

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

I. Install full-size uncut panels when possible. When cutting is required to provide staggered panel joints or to fit specific application, cut panels to provide clean, unbent edges.

J. Install panels to ensure a 1/16" – 1/8" gap between the sides of the panels and butt panels vertically, always leaving a gap at movement joints locations equal to the thickness of the joint, do not allow overlapping of panels.

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

L. Fastener Installation: Mechanically attach metal panels with a minimum of 1.5 fasteners per square foot (16 sf = 24 fasteners) increasing spacing along the top and bottom of the wall and around openings.

TABS Wall Systems Panel Guide Specification

- A. Horizontal fastener spacing shall not exceed 24 inches; vertical fastener spacing shall not exceed 12 inches.
- B. Provide additional anchors around the perimeter of walls as well as openings (406 mm) in either dimension, as well as building corners not utilizing corner panels as follows:
 - a. Install fasteners a minimum of 1.5 per square foot (900 cm²).
 - 1. At the top and bottom of the walls, fasteners shall be spaced a maximum of 12 inches (305 mm) horizontally and within the height of a single row or course of masonry.
 - 2. At vertical wall ends of wall and openings, fasteners shall be spaced a maximum of 8 inches vertically within 4 inches of the end of the panel.

3.5 FASTENERS

NOTE TO SPECIFIER: Revise subparagraphs below to suit Project.

- A. Attach fasteners to the framing through the sheathing.
- B. Fasteners for wood frame shall penetrate the studs a minimum of 1" (25 mm).
- C. Fasteners for steel studs, girts or purlins shall penetrate a minimum of 1/4" (6.4 mm) with not less than three expose threads behind the steel members.
- D. Fasteners for [masonry] [or] [concrete] shall penetrate the substrate a minimum of 1" (25 mm).

3.6 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.
 - a. Avoid using less-than-half-size units, particularly at corners and jambs.
 - b. 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" - 1/2" (9.5 - 12.7 mm) gap at openings to allow for movement joint installation.

- F. Adhere individual units to panel using TABS adhesive placed on the back of the units in two 1/2"-3/4" dabs or vertical strips 3/8" wide. For corner brick apply one dab on head and one dab at each end of the long leg.
 - a. Do not apply adhesive in a manner that would create horizontal strips of adhesive that may prevent moisture from draining down the wall.
 - b. Do not use excessive adhesive as this will cause thin bricks to tilt away from the wall prior to adhesive set.
- G. Thin veneers are to be applied within 10 minutes after adhesive has been applied and after film begins to form on the adhesive. Silicone needs to set until a film has formed a minimum of 5 minutes.
- H. Space thin brick to ensure that the head joints do not exceed 5/8" (16 mm) or fall below 1/4" (6.4 mm).
- I. When adjustment is necessary to be made after adhesive begins to harden, remove hardened adhesive, and replace with fresh adhesive.
- J. Keep areas intended to receive sealant clean of thin brick, adhesive and other materials during construction.
- K. Do not allow masonry units to bridge movement joints in substrate.

NOTE TO SPECIFIER: Delete joint profiles not required.

3.7 MORTAR INSTALLATION AND JOINTING

- A. After adhesive has set a minimum of 12 hours, completely fill head and bed joints between adhered veneers intended to receive mortar.
- B. Keep weep holes free of mortar every 24" immediately above starter angles and flashings.
- C. Tool exposed joints when thumbprint hard to joint profile listed below:
 - a. Joint Profile: Tool mortar joints to a concave appearance.
 - b. Joint Profile: Tool mortar joints to a concave grapevine appearance.

NOTE TO SPECIFIER: Delete subparagraph below if no glazed thin brick is required.

- D. For glazed thin brick, use nonmetallic jointer. Flush cut all joints not tooled.
- E. When repointing, completely remove mortar, and refill solidly with pointing mortar, and tool joints.

3.8 FLASHING

- A. Install embedded flashing and weep holes in TABS Wall Panel assemblies at the base of the wall,
- B. above openings, above horizontal movement joints, and other obstructions to the downward flow of water in wall, and where indicated.
- C. Before covering with wall panel or mortar, seal penetrations in flashing with adhesive, sealant, or flashing tape as recommended by flashing tape manufacturer.
- D. Prior to installing TABS Starter Flashing apply 1/2" thick bead of code approved sealant/caulk the full length of the metal flashing. Carry flashing vertically as detailed, but not less than 3" (76 mm) above horizontal plane.

- E. Lap flashing a minimum of 3" (76 mm).
- F. Seal all flashing laps with approved TABS Wall Systems tapes.
- G. Extend head and sill flashings not less than 6" (150 mm) beyond edges of openings; seal with TABS flashing tape.
- H. Project starter angle from face of wall with a minimum 5/8" (6 mm) to form a drip.

NOTE TO SPECIFIER: Delete options not required for project.

3.9 WEEP HOLES

- A. Install weep holes every 16" or every two bricks in head joints at all flashings.
- B. Keep vents and weep holes free of mortar.

NOTE TO SPECIFIER: Revise two subparagraphs below to suit specific project needs.

3.10 CONTROL/MOVEMENT JOINTS

- A. Keep clean of all mortar, adhesive and debris.
- B. Locate joints where indicated in drawings.
- C. Provide vertical and horizontal pressure-relieving joints where 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). A backer rod may not be required and is dependent upon depth of joint.
- D. Install joints between TABS Wall Systems wall assemblies and other materials including around windows and doors.
- E. Install joints at changes in substrate, unlike materials and where movement joints occur in substrate.
- F. Joints shall be installed within 2'-4' of outside corners, and shall not exceed 24' on center vertically or 18' on center horizontally per story, regardless of wall type.

3.11 CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove adhesive as well as mortar and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - a. Cut out all defective mortar joints and holes in exposed masonry and provide new mortar.
 - b. Clean preselected sample wall area with specified cleaning solution as per manufacturer's recommendations. Do not proceed with cleaning until approved by Architect.
 - c. Clean thin brick in accordance with brick manufacturer's written instructions.
 - d. Protect adjacent stone and non-masonry surfaces from contact with cleaner.
 - e. All cleaning practices and products used shall be in accordance with cleaning products manufacturer's written for further instructions.