



Building with conscience.

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Sto Guide Specification No. 3002 StoCast Brick Engineered Unit Masonry Veneer

Section 04 29 00 Engineered Unit Masonry

This guide specification covers installation of engineered unit masonry veneer over building code compliant, vertical, above grade concrete, concrete masonry (CMU), and portland cement plaster wall construction. It does not address air sealing, construction detailing, flashing and other important aspects of design and construction that must be taken into consideration to prevent water infiltration, to prevent condensation caused by air leakage or water vapor diffusion, and to comply with applicable fire safety requirements. Consult with a qualified design professional for overall design of the wall assembly. Also refer to Sto Technical Hotline publications: 0403-BSc, [Critical Detail Checklist for Wall Assemblies](#), 0603-BSc, [Moisture Control Principles for Design and Construction of Wall Assemblies](#), and 0415-BSc, [NFPA 285 for Testing of Wall Assemblies with Combustible Components](#) at www.stocorp.com.

For application over Sto proprietary EIFS, insulated stucco and rainscreen wall systems, go to <https://www.stocorp.com/system-finder/>.

Notes in italics, such as this one, are explanatory and intended to guide the design/construction professional and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.

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PART 1 GENERAL

1.1 SUMMARY

- A. Provide engineered unit masonry veneer for vertical above grade concrete, concrete masonry, or portland cement plaster exterior wall surfaces.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.

1.3 REFERENCES

- A. ASTM Standards
 - 1. C920, Standard Specification for Elastomeric Joint Sealants
 - 2. C926, Standard Specification for Application of Portland Cement-Based Plaster
 - 3. E84, Standard Test Method for Surface Burning Characteristics of Building Materials
 - 4. E96, Standard Test Methods for Water Vapor Transmission of Materials
 - 5. E119, Standard Test Methods for Fire Tests of Building Construction and Materials
 - 6. G155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
- B. National Fire Protection Association
 - 1. NFPA 285, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components
- C. Proprietary
 - 1. S970A, StoCast Brick Application Guide
- D. South Coast Air Quality Management District (South Coast AQMD)
 - 1. Rule 1113, Architectural Coatings

1.4 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The engineered unit masonry veneer manufacturer shall be a company with at least thirty five years of experience in manufacturing polymer based finishes and specialty finishes and regularly engaged in the manufacture and marketing of products specified herein. The manufacturer shall have a current ISO 9001 certified quality system and ISO 14001 certified environmental management system.
- B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience. The contractor shall have at least 5 years of experience in polymer based finish or specialty finish application, and shall have completed at least 3 projects of similar size and complexity. The contractor shall provide proof before commencement of work that he/she will maintain and supervise a qualified crew of applicators through the duration of the work. When requested the Contractor shall provide a list of the last three comparable jobs including the name, location, and start and finish dates for the work.

- C. Mock-ups: The contractor shall install a mock-up of the finished wall for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agent.
- D. Testing: Testing shall be conducted as directed by the design professional, building owner, or owner's representative/quality assurance agent to verify wall assembly performance, and to verify adhesion to prepared substrates before and during construction. Where substrate is too dense or non-absorbent for adhesion, or where a bond inhibiting material is on the surface, or in any case where adhesion is in question, install portland cement plaster over metal lath or other appropriate plaster base as directed by design professional, owner, or owner's representative/quality assurance agent.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, and batch number.
- B. Store products in a dry area with temperature maintained between 50 and 85 degrees F (10 and 29 degrees C). Protect from direct sunlight. Protect from freezing. Protect from extreme heat (>90 degrees F [32 degrees C]).
- C. Handle products in accordance with manufacturer's printed instructions.

1.6 WARRANTY

- A. Provide manufacturer's standard limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, GA 30331
- B. Obtain substrate levelers, adhesive, engineered masonry veneer units, and pointing mortar from single source

2.2 MATERIALS

- A. Substrate Leveler or Skim Coat
 - Note: select one material depending on wall surface condition*
 - 1. Sto BTS Plus – factory blended polymer modified dry powder base coat mixed with potable water for leveling and smoothing wall surfaces up to 1/16 inch (1.6mm) in one coat or 1/8 inch (3mm) in two coats
 - 2. Sto Primer-Adhesive-B – factory blended polymer modified dry powder base coat mixed with potable water for leveling and smoothing wall surfaces up to 1/16 inch (1.6mm) in one coat or 1/8 inch (3mm) in two coats
 - 3. Sto Primer/Adhesive – latex additive field mixed with portland cement for leveling and smoothing wall surfaces up to 1/16 inch (1.6mm) in one coat or 1/8 inch (3mm) in two coats
 - 4. Sto BTS Xtra – factory blended polymer modified dry powder base coat mixed with potable water for leveling and smoothing wall surfaces up to 1/8 inch (3mm) in one coat or 1/4 inch (6mm) in two coats
 - 5. Sto Leveler and Skim Coat - factory blended polymer modified dry powder base coat mixed with potable water for leveling and smoothing wall surfaces up to 1/4 inch (6mm) in one coat or 1/2 inch (13mm) in two coats

Note: reinforcing mesh is often used with base coat products to control thickness and as a defense against cracking

- B. Mesh Reinforcement
 - 1. Sto Mesh – nominal 4.5 oz/yd² (153 kg/m²) glass fiber reinforcing mesh treated for compatibility with substrate levelers and base coats
 - C. Engineered Unit Masonry Veneer Adhesive
 - 1. Sto Bonding and Pointing Mortar – integrally colored organic bonding mortar for adhering StoCast Brick units to prepared concrete, concrete masonry, and portland cement plaster substrates
- Note: Select unit masonry veneer size, color, and texture, and integrally colored bonding and pointing mortar based on sample submittals and approved mock-up*
- D. Engineered Unit Masonry Veneer
 - 1. StoCast Brick – thin, lightweight, flexible resin cast brick units, color and texture as selected by architect, owner, or owner’s representative
 - E. Engineered Unit Masonry Veneer Pointing Mortar
 - 1. Sto Bonding & Pointing Mortar – integrally colored organic bonding and pointing mortar for pointing StoCast Brick mortar joints, color as selected by architect, owner, or owner’s representative
 - F. Accessories
 - 1. StoSeal STPE Sealant - high-movement, low modulus, non-sag one-component silyl-terminated polyether joint sealant in compliance with ASTM C920

2.3 PERFORMANCE REQUIREMENTS

- A. Surface Burning: ASTM E84, flame spread less than 5, smoke developed less than 25
- Note: fire resistance ratings and flame propagation (for use on noncombustible wall construction) based on testing of StoTherm ci foam plastic-based EIFS assembly with StoCast Brick veneer*
- B. Fire Resistance: ASTM E119, achieves 1-hour and 2-hour ratings when installed over base wall assemblies of 1 or 2-hour fire resistance rating.
 - C. Flame Propagation: NFPA 285, meets requirements for use on code compliant concrete, concrete masonry, and portland cement plaster base wall assemblies
 - D. UV Resistance: ASTM G155, no deleterious effects after 2500 hours of exposure
 - E. Volatile Organic Contents: South Coast AQMD Rule 1113, VOC less than 50g/L

PART 3 EXECUTION

3.1 INSTALLATION

Note: Sto base coats and levelers can generally be used in one or two coats to level and smoothen prepared concrete, concrete masonry, and portland cement plaster wall surfaces. The approved mock-up shall be the basis for the materials and methods needed to achieve an acceptable finished wall surface appearance.

- A. All substrates shall be leveled and true to a tolerance of not more than 1/8 inch in 10 ft (3mm in 3 m) except when determined otherwise on the basis of an approved mock-up.
- B. Surface Preparation
 - 1. Concrete: Concrete must be free of surface contamination such as grease, oil, wax, dust, dirt, salts, algae, mildew, pollen or any other surface contamination that could inhibit adhesion. Surface must be absorbent, slightly pitted or scarified and must be fully cured and free of voids, cracks, weak surface conditions such as laitance, and any other surface defects. Concrete must be levelled with a Sto leveler or base coat as identified in Section 2.2A
 - 2. Concrete Masonry: Concrete masonry must be free of surface contamination such as grease, oil, wax, dust, dirt, salts, algae, mildew, pollen or any other surface contamination that could inhibit adhesion. Surface must be fully cured and free of cracks, weak surface conditions such as laitance, and any other surface defects. Concrete masonry must be levelled with a Sto leveler or base coat as identified in Section 2.2A
Note: in two or three coat portland cement plaster wall assemblies, the engineered masonry veneer unit takes the place of portland cement plaster finish (see Appendix to ASTM C926, X1.3)
 - 3. Portland Cement Plaster: portland cement plaster must be installed in two coats, scratch and brown coat, in accordance with ASTM C926 to a minimum thickness of 3/4 or 7/8 inch, as needed to comply with fire-resistance rated wall construction requirements. Surfaces must be free of surface contamination such as grease, oil, wax, dust, dirt, salts, mildew, pollen, or any other surface contamination that could inhibit adhesion. Surface must be absorbent and free of voids, cracks, weak surface conditions such as laitance, or any other surface defects.
- C. Mixing
 - 1. Mix Sto products in accordance with published literature. Refer to applicable Product Bulletins for specific information on use, handling, application, precautions, and limitations of specific products
- D. Application
 - 1. Apply the selected Sto leveler or base coat product in one or two coats in accordance with published literature to level and smooth the prepared wall surface
 - 2. Install engineered masonry veneer units to the prepared surfaces. Refer to StoCast Brick Application Guide
 - 3. Do not install base coat, reinforcing mesh, engineered masonry veneer units over joint sealants, cold joints, control joints, expansion joints, or accessories. Install over the leveled, prepared substrate only.
- E. Protection
 - 1. Provide protection of installed materials from water infiltration into or behind them during and after construction.
 - 2. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.

3. Provide coping and/or flashing at sills, projecting features, deck attachments, roof/wall intersections, parapets and similar construction details to prevent water entry into the wall assembly or into and behind the engineered masonry veneer unit assembly. Seal penetrations through the finished wall surface with backer rod and sealant or other appropriate means to provide a watertight condition.

ATTENTION

Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to Sto products, and to the structure of the building or its components. **STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.** For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, www.stocorp.com.