

# Senenergy Cement-Board Stucco 1000 System with MaxGrip Veneer Mortar – Section 072423

High-impact resistant, water-managed wall system incorporating a cement-board core, reinforced base coat and adhered veneer finish.

## INTRODUCTION

This specification has been assembled to enable the design professional to select or delete sections to suit the project requirements and is intended to be used in conjunction with Senenergy® typical details, product bulletins, technical bulletins, etc.

## DESIGN RESPONSIBILITY

It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. The Senenergy® brand Master Builders Solutions Construction Systems US, LLC (herein referred to as “Master Builders Solutions”) has prepared guidelines in the form of specifications, typical application details, and product bulletins to facilitate the design process only. Master Builders Solutions is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or the like, whether based upon the information provided by Master Builders Solutions or otherwise, or for any changes which the purchasers, specifiers, designers or their appointed representatives may make to Master Builders Solutions published comments. The International Building Code and TMS 402/602 *Building Code Requirements and Specification for Masonry Structures* do not place a specific height limit on this application. However local building code may impose certain restrictions that would limit the height that the system can be placed. Consult the authority having jurisdiction (AHJ) for the project to ensure local requirements are satisfied.

## Designing and Detailing a CBS 1000 Wall System with MaxGrip Veneer Mortar

General: The system shall be installed in strict accordance with current recommended published details and product specifications from the system’s manufacturer.

### A. Wind Load

1. Maximum deflection not to exceed  $L/360$  of span under positive or negative design loads.
2. Design for wind load in conformance with local code requirements.

### B. Substrate Systems

1. This specification is intended for applications on cement-board, ASTM C1325 Type A Exterior, minimum 1/2" substrates, over the following sheathings that are first applied over the framing and which may be required to satisfy structural requirements and/or fire resistive construction requirements: ASTM C1177 type sheathings, including, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing and DensGlass® exterior sheathing, gypsum sheathing (ASTM C79/C1396); Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB.
2. The substrate systems shall be engineered with regard to structural performance by others.

### C. Moisture Control

1. Prevent the accumulation of water behind the CBS 1000 system, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
  - a. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall and anywhere else required by local code.
  - b. Air Leakage Prevention: Provide continuity of air barrier system at foundation, roof, windows, doors and other penetrations through the system with connecting and compatible air barrier

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components to minimize condensation and leakage caused by air movement.

- c. Vapor Diffusion and Condensation: Perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation. Avoid the use of vapor retarders on the interior side of the wall in warm, humid climates.

### D. System Joints

1. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, floor lines of wood frame construction, where substrates change and where structural movement is anticipated. Locate expansion joints and other sealant filled joints where indicated and approved by designer. Detail specific locations in construction drawings.
2. Locate control joints approximately every 600 ft.2 (56 m2) of wall surface area with maximum uncontrolled length or width of 24 lin. ft. (7 m) and a maximum uncontrolled length-to-width ratio of 2 1/2:1. Do not saw cut joints after installing adhered veneer units. If building expansion/contraction is anticipated, a true expansion joint should be utilized. For additional information reference the Senergy Cement Board 1000 Trim Accessories technical bulletin.
3. Sealant joints are required at all penetrations through the CBS 1000 Wall System (windows, doors, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.). Refer to CBS 1000 Wall System with MaxGrip Veneer Mortar typical details.

**NOTE TO SPECIFIER: It is the sole responsibility of the project design team, including the architect, engineer, etc., to ultimately determine specific expansion and control joint placement, width and design. Sealant joints are required at all penetrations through the Senergy CBS 1000 system (windows, doors, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.). Refer to Senergy CBS 1000 wall system typical details.**

4. For a list of acceptable sealants refer to Acceptable Sealants for use with Senergy Wall Systems technical bulletin.

### E. Grade Condition

1. CBS 1000 System with MaxGrip Veneer Mortar is not intended for use below grade or on surfaces subject to continuous or intermittent immersion in water or hydrostatic pressure. Ensure a minimum 4" (101.6mm) clearance above grade or as required by code, a minimum 2" (50.8mm) clearance above finished grade (sidewalk/concrete flatwork).

### F. Coordination with Other Trades:

1. Evaluate adjacent materials such as windows, doors, etc. for conformance to manufacturer's details. Adjacent trades shall provide scaled shop drawings for review.
2. Air Seals at any joints/gaps between adjoining components (penetrations, etc.) are of primary importance to maintain continuity of an air barrier system and must be considered by the design professional in the overall wall assembly design. Install an air seal between the primary air/water-resistive barrier and other wall components (penetrations, etc.) in order to maintain continuity of an air barrier system.
3. Provide protection of rough openings in accordance with *Senergy Moisture Protection Guidelines for Senergy Stucco Wall System* before installing windows, doors, and other penetrations through the wall.
4. Install copings, sealant and other weather protective items immediately after installation of the CBS 1000 Wall System and when Senergy coatings are completely dry.

## TECHNICAL INFORMATION

Consult Master Builders Solutions' Technical Services Department for specific recommendations 800-589-1336. Consult the Senergy website, [www.senergy.master-builders-solutions.com](http://www.senergy.master-builders-solutions.com), for additional information about products, systems and for updated literature.

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## PART 1 – GENERAL

**NOTE TO SPECIFIER: Items in blue/underlined indicated a system option or choice of options. Throughout the specification, delete those which are not required or utilized.**

### 1.01 SECTION INCLUDES

- A. Refer to all project drawings and other sections of this specification to determine the type and extent of work therein affecting the work of this section, whether such work is specifically mentioned herein.
- B. CBS 1000 Wall System: composite wall system consisting of Senergy air/water resistive barrier, Drainage Mat by Master Builders Solutions (optional), Senergy Base Coat, Senergy Reinforcing Mesh and MAXGRIP Veneer Adhesive.
- C. Senergy products are listed in this specification to establish a standard of quality. Any substitutions to this specification shall be submitted to and receive approval from the Architect at least 10 days before bidding. Proof of equality shall be borne by the submitter.
- D. The system type shall be Senergy Cement Board Stucco (CBS) 1000 wall system with MaxGrip Veneer Mortar as manufactured by Master Builders Solutions, Shakopee, Minnesota.

### 1.02 RELATED SECTIONS

- A. Section 05 40 00 Cold-formed metal framing: Light gauge load-bearing metal framing
- B. Section 06 00 10 Plywood Substrate
- C. Section 06 11 00 Wood Framing
- D. Section 07 19 50 Air Barriers
- E. Section 07 62 00 Sheet Metal Flashing and Trim: Perimeter Flashings
- F. Section 07 65 00 Flexible Flashing
- G. Section 07 90 00 Sealants
- H. Section 08 00 00 Doors and windows
- I. Section 09 10 00 Metal Support Systems
- J. Section 09 11 00 Non-load-bearing wall framing: Non-load-bearing metal framing systems
- K. Section 09 25 00 Exterior Gypsum substrates

### 1.03 REFERENCES

- A. ASTM C150 Specification for Portland cement.
- B. ASTM D1682 Test for Break Load and Elongation of Textile Fabrics.
- C. ASTM E84 Tests for Surface Burning Characteristics of Building Materials.
- D. ASTM G23 Operating Light and Water Exposure Apparatus (Carbon-Arc Type) for Exposure of Non-metallic Materials.
- E. ASTM G53 Operating Light and Water Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
- F. ASTM C67 Sampling and Testing Brick and Structural Clay Tile.
- G. ASTM B117 Standard Method of Salt Spray (Fog) Testing.
- H. ASTM D968 Abrasion Resistance of Organic Coatings by Falling Abrasive.
- I. FS TT-C-555B Coating Textured for Interior and Exterior Masonry Surfaces.
- J. MIL-Y-1140G Yarn, Cord, Sleeving, Cloth and Tape-Glass.
- K. Mil. Std. 810B Mildew Resistance (Method 508)
- L. ASTM E96 Water Vapor Transmission (Method B)
- M. ICC-ES AC51 Acceptance Criteria for Precast Stone Veneer
- N. ACI 530-02/ASCE 5-02/TMS 402-02 Building Code Requirements for Masonry Structures
- O. ANSI A108.01 General Requirements: Sub-surfaces and Preparations by Other Trades.
- P. ANSI A108.02 General Requirements: Materials, Environmental, and Workmanship.
- Q. ANSI A108.10 Installation of Grout in Stonework.
- R. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
- S. ANSI A118.10 Specifications for Load Bearing, Bonded, Waterproof Membranes for Stone Installations
- T. ANSI A137.1 Specification for Ceramic Tile
- U. ASTM C1088 Standard Specification for Thin Veneer Brick Units
- V. ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer (AMSMV) Units

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## 1.04 DEFINITIONS

Senergy CBS 1000 System with MaxGrip Veneer Mortar: Exterior assembly comprised of Senergy air/water-resistive barrier, Drainage Mat (optional), Senergy Base Coat, Senergy Reinforcing Mesh and MaxGrip Veneer Mortar with an adhered veneer.

## 1.05 SUBMITTALS

- A. Submit under provisions of Section [01300] [01340].
- B. Product Data: Provide data on Senergy CBS 1000 System materials, product characteristics, performance criteria, limitations and durability.
- C. Shop Drawings: Indicate wall joint pattern and joint details, thickness, and installation details.
- D. Certificate: System manufacturer's approval of applicator.
- E. Sealant: Sealant manufacturer's certificate of compliance with ASTM C920.
- F. System manufacturer's current specifications, typical details, system design guide and related product literature which indicate preparation required, storage, installation techniques, jointing requirements and finishing techniques.

## 1.06 QUALITY ASSURANCE

- A. Manufacturer: More than 10 years in the EIFS industry, with more than 1000 completed cement board stucco projects.
- B. Applicator: Approved by Master Builders Solutions in performing work of this section.
- C. Regulatory Requirements: Conform to applicable code requirements for finish system.
- D. Field Samples:
  1. Provide under provisions of Section [01400] [ ].
  2. Prepare each sample panel using the same tools and techniques to be used for the actual application.
  3. Locate sample panel where directed.
  4. Accepted sample panel [\[may\]](#) [\[may not\]](#) remain as part of the work.
  5. Field samples shall be comprised of all wall assembly components including substrates, air/water-resistive barrier, Drainage Mat (if specified), Senergy Base Coat, Senergy Reinforcing Mesh, MAXGRIP VENEER MORTAR, adhered veneer and typical sealant/flashing conditions.
- E. Testing:
  1. General Air/Water-Resistive Barrier Minimum Performance:

TEST	METHOD	CRITERIA	RESULTS
Water-resistive barrier coatings used under EIFS	ASTM E2570		Meets all performance requirements
Air Leakage of Air Barrier Assemblies	ASTM E2357	0.2 l/(s.m <sup>2</sup> ) @75 Pa (0.04 cfm/ft <sup>2</sup> @ 1.57 psf)	0.0007 l/s.m <sup>2</sup> (0.0001 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) positive / post conditioning 0.0014 l/s.m <sup>2</sup> (0.0003 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) negative / post conditioning
Air Permeance of Building Materials	ASTM E2178	0.02 l/(s.m <sup>2</sup> ) @75 Pa (0.004 cfm/ft <sup>2</sup> @ 1.57 psf)	0.0049 l/s.m <sup>2</sup> @ 75 Pa (0.00098 cfm/ft <sup>2</sup> @ 1.57 psf)
Rate of Air Leakage	ASTM E283		0.0185 l/s.m <sup>2</sup> @ 75 Pa (0.0037 cfm/ft <sup>2</sup> @ 1.57 psf)
Water Vapor Transmission	ASTM E96	Report value	Senershield-R - 18 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 10 mils wet film thickness Senershield-RS 18 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 12 mils wet film thickness Senershield-R/RS - 14 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 20 mils wet film thickness Senershield-VB - 0.09 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 26 mils wet film thickness
Pull-Off Strength of Coatings	ASTM D4541	Min. 110 kPa (15.9 psi) or substrate failure	Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood; pvc and galvanized flashing
Nail Sealability (without Sheathing Fabric)	ASTM D1970	No water penetration at galvanized roofing nail penetration under 127 mm (5") head of water after 3 days at 4° C (40° F)	Pass
Surface Burning	ASTM E84	Flame Spread < 25 Smoke Development < 450	Meets Class A: Flame spread =15 Smoke developed = 95

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### 2. Air/Water-Resistive Barrier ICC-ES AC-212:

TEST	METHOD	CRITERIA	RESULTS
Sequential Testing: 1. Structural 2. Racking 3. Restrained Environmental Conditioning 4. Water Penetration	1. ASTM E 1233 Procedure A 2. ASTM E 72 3. ICC-ES AC-212 4. ASTM E 331	No cracking at joints or interface of flashing No water penetration after 15 min @ 137 Pa (2.86 psf)	Pass - Tested over OSB and gypsum sheathing No water penetration after 90 min @ 299 Pa (6.24 psf)
Sequential Testing: 1. UV Light Exposure 2. Accelerated Aging 3. Hydrostatic Pressure Test	1. ICC-ES AC-212 2. ICC-ES AC-212 3. AATCC 127-1985	No cracking or bond failure to substrate No water penetration after 21.7 in (550 mm) water for 5 hours	Pass
Freeze-Thaw	ASTM E 2485 (Method B)	No sign of deleterious effects after 10 cycles	Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood
Water Resistance	ASTM D2247	No deleterious effects after 14 day exposure	Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood
Tensile Bond	ASTM C 297	Minimum 103 kPa (15 psi)	Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood, CMU; pvc and galvanized flashing
Tensile Bond (after freeze-thaw)	ASTM C 297	Minimum 103 kPa (15 psi) avg; no failure after 10 cycles freeze-thaw	Pass

### 3. Air/Water-Resistive Barrier ICC-ES AC 148:

TEST	METHOD	CRITERIA	RESULTS
Sequential Testing: A. UV Light Exposure B. Accelerated Aging C. Hydrostatic Pressure Test	1. ICC-ES AC 148 2. ICC-ES AC 148 3. AATCC 127-1985	No cracking or bond failure to substrate No water penetration after 21.7 in (550 mm) water for 5 hours	Pass
Peel Adhesion	ASTM D 3330 Method F	After UV Exposure After Accelerated Aging After Elevated Temperature Exposure After Water Immersion	Pass - tested over ASTM C1177 glass-mat sheathing, OSB, plywood, PVC and uncoated aluminum
Nail Sealability after Thermal Cycling	ASTM D 1970 (Modified), AAMA 711	No water penetration at galvanized roofing nail penetration under 31 mm (1.2") head of water after 24 hours at 4° C (40° F)	Pass
Tensile Strength after UV Exposure	ASTM D 5034, AAMA 711	Minimum 0.5 N/mm (2.9 lbs/in)	Pass
Cold Temperature Pliability	ASTM D 1970, AAMA 711	No cracking after bending around a 25 mm (1") mandrel after 2 hour exposure to -18° C (0° F)	Pass
Resistance to Peeling	AAMA 711	No signs of distress or failure after 24 hours of exposure at room temperature, 50° C (122° F), 65° C (149° F), 80° C (176° F)	Pass

### 4. CBS 1000 System and Component Performance:

TEST	METHOD	CRITERIA	RESULTS
Direct-Applied Exterior Finish Systems (DEFS)	ICC-ES AC59		Meets all performance requirements
Transverse Wind-load	ASTM E330	Steel stud framing (16 gauge, 3 5/8") @ 16"o.c	Average ultimate loads <sup>1</sup> : - 2585 Pa (- 54 psf) + 1053 Pa (+ 22 psf) not taken to failure
Transverse Wind-load	ASTM E330	Steel stud framing (20 gauge, 3 5/8") @ 16"o.c.,	Average ultimate loads <sup>1</sup> : - 1676 Pa (- 35 psf) + 862 Pa (+ 18 psf) not taken to failure
Transverse Wind-load	ASTM E330	Wood assembly (2" x 4") @ 16"o.c.	Average ultimate loads <sup>1</sup> : - 2681 Pa (- 56 psf) + 1197 Pa (+ 25 psf) not taken to failure

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Bond Strength after Accelerated Weathering and Freeze-thaw Test	AC59	Minimum 34.3 kPa (5 psi)	Pass
Racking Test	ASTM E72	No failure of finish at substrate joints before failure of substrate OR no failure at 1" net deflection	Pass
Restrained Environmental Cycling Test	AC59	No cracking of finish or other distress after 5 cycles of water spray (24 hrs.) and radiant heat (72 hrs.)	Pass
Water Penetration	ASTM E 331	No water penetration after 15 minutes @ 137 Pa (2.86 psf)	Pass
Radiant Heat Exposure	NFPA 268	No ignition at 20 minutes	Met test criteria.
Fire Endurance	ASTM E119	Maintain fire resistance of existing rated assembly	2-hour rating
Intermediate Scale Multi-story Fire Test	NFPA 285 / UBC Standard 26-9	<ol style="list-style-type: none"> <li>1. Resist flame propagation over the exterior surface</li> <li>2. Resist vertical spread of flame within combustible core/component of panel from one story to the next</li> <li>3. Resist vertical spread of flame over the interior surface from one story to the next</li> <li>4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces</li> </ol>	Met test criteria
Surface Burning	ASTM E84 / UL 723	Flame spread < 25 Smoke developed < 450	All components of the system meet Class A performance (FS < 25; SD < 450)
Accelerated Weathering	ASTM G 153 (formerly G23)	No deleterious effects after 2000 hours.	Pass
Freeze-Thaw	AC59	No deleterious effects after 10 cycles	Pass 60 cycles

<sup>1</sup> No failure in the Senergy materials; failure in framing and/or sheathing connections; framing members shall be designed to comply with strength and stiffness requirements of the applicable code

### 5. MAXGRIP VENEER MORTAR:

TEST	METHOD	CRITERIA	RESULTS
Compressive Strength	ASTM C 109	N/A	4000 psi
Freeze-Thaw	ASTM C 666	Procedure A, cycles rapid freezing and thawing in water. 40°F - 0°F - 40°F in not less than 2 hours and not more than 5 hours; modified using full IVS composite in place of concrete beam	> 100 cycles, no failure of MaxGrip
Shear Strength	ANSI 118.4	28 days ≥ 200 psi After 7 day water immersion ≥ 150 psi	565 psi at 28 days 306 psi after 7 day water immersion
Shear Strength	ANSI A118.15	7 days ≥ 300 psi 28 days ≥ 400 psi After 7 days water immersion ≥ 200 psi	487 psi at 7 days 565 psi at 28 days 306 psi after 7 day water immersion
Shear Bond	ASTM C482	Minimum 50 psi	130 psi - Directly to molded cement mortar bed specified in ASTM C482 = 130 psi 151 psi and 141 psi respectively - to Senergy Alpha Base Coat and Alpha Dry Base Coat over molded cement mortar bed specified in ASTM C482.

### 6. Reinforcing Mesh Testing:

TEST	METHOD	CRITERIA	RESULTS
Alkali Resistance of Reinforcing Mesh	ASTM E 2098	Greater than 120 pli (21 dN/CM) retained tensile strength	Pass (all mesh)

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## 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products under provisions of Section [01 65 00] [01 66 00] [ ].
- B. Deliver Master Builders Solutions - Senergy in original unopened packages with manufacturer's labels intact.
- C. Protect Master Builders Solutions - Senergy materials during transportation and installation to avoid physical damage.
- D. Master Builders Solutions - Senergy materials in cool, dry place protected from freezing. Store at no less than 4°C/40°F.
- E. Store MAXFLASH at a minimum of 40°F/4°C. In cold weather, keep containers at room temperature for at least 24 hours before using.
- F. Store insulation boards flat and protected from direct sunlight and extreme heat.
- G. Store Master Builders Solutions - Senergy Reinforcing Mesh, SHEATHING FABRIC and WS FLASH flexible flashing in cool, dry place protected from exposure to moisture.

## 1.08 PROJECT/SITE CONDITIONS

- A. Do not apply Master Builders Solutions – Senergy materials in ambient temperatures below 40°F/4°C. Provide properly vented, supplementary heat during installation and drying period when temperatures less than 40°F/4°C prevail.
- B. Do not apply Master Builders Solutions - Senergy materials to frozen surfaces.
- C. Maintain ambient temperature at or above 40°F/4°C during and at least 24 hours after Master Builders Solutions - Senergy materials installation and until dry.

## 1.09 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Senergy CBS 1000 System with MaxGrip Veneer Mortar with related work of other sections.
- B. Coordinate and schedule installation of trim, flashing, and joint sealers to prevent water infiltration behind the System.
- C. Coordinate and schedule installation of air/weather barrier, windows, doors, AC units etc.

## 1.10 WARRANTY

- A. Provide Master Builders Solutions standard warranty for Senergy CBS 1000 Wall System with MaxGrip Veneer Mortar installations under provisions of Section [01 70 00]. Reference Senergy Warranty Schedule technical bulletin for specific information.
- B. Comply with Master Builders Solutions notification procedures to assure qualification for warranty.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. CBS 1000 System with MaxGrip manufactured by Master Builders Solutions

### 2.02 MATERIALS

**NOTE TO SPECIFIER: Items in blue/underlined indicate a system option or choice of options. Throughout the specification, delete those which are not required or utilized. Contact Master Builders Solutions' Technical Service Department for further assistance.**

#### A. Air/water-Resistive Barrier Components:

- 1. Air/Water-Resistive Barrier: **(Required, Select a, b or c)**
  - a. SENERSHIELD-R: A one-component fluid-applied vapor permeable air/water-resistive barrier.
  - b. SENERSHIELD-RS: A one-component fluid-applied vapor permeable air/water-resistive barrier for use with airless spray equipment.
  - c. SENERSHIELD-VB: A one-component fluid-applied vapor impermeable air/water-resistive barrier.
- 2. Rough Opening and Joint Treatment: **(Required if a b or c is selected above, select a or b)**
  - a. SHEATHING FABRIC: A spun-bonded non-woven reinforced polyester web for use with Senergy fluid applied air/weather-resistive barriers.
  - b. MAXFLASH: A one-component elastomeric material for use as a flexible flashing membrane.
- 3. Transitional Membrane / Expansion Joint Flashing (If selected, both a & b are required)
  - a. WS FLASH: 30-mil thick, self-sealing, self-healing composite membrane of polyester fabric and rubberized asphalt. Compatible with Senergy liquid air/weather resistive barriers.





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- b. Cement-board must be securely fastened per manufacturers' recommendations, applicable building code and project requirements.
  - c. Walls shall have maximum deflection not to exceed L/360 of span under positive or negative design loads
  - d. Cement-board must be a single piece around corners of openings.
  - e. Cement-board must be fastened with corrosion resistant fasteners.
  - f. Cement-board and sheathing joints must be offset.
4. Flashings:
- a. Head, jamb and sills of all openings must be flashed with secondary air/weather barrier prior to window/door, HVAC, etc. installation. Refer to Senergy Moisture Protection Guidelines.
  - b. Windows and openings shall be flashed according to design and building code requirements.
  - c. Individual windows that are ganged to make multiple units require that the heads be continuously flashed and/or the joints between the units must be fully sealed.
5. Decks:
- a. Decks must be properly flashed prior to system application.
  - b. The system must be terminated a minimum of 1" (25 mm) above all decks, patios and sidewalks, etc.
6. Utilities: The system must be properly terminated at all lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.
7. Roof: Verify that all roof flashings have been installed in accordance with the guidelines set forth by the Asphalt Roofing Manufacturers Association (ARMA).
8. Kick-out flashing must be leak-proof and angled (min 100 degrees) to allow for proper drainage and water diversion.
- C.** Do not proceed until all unsatisfactory conditions have been corrected.
- D.** Installation of Senergy CBS 1000 is limited to residential and low rise commercial and institutional construction.
- E.** Supplemental framing/blocking may be required to secure cement board at vertical control/expansion joints.

### 3.02 PREPARATION

- A. Protect all surrounding areas and surfaces from damage during application of Senergy Cement-Board Stucco 1000 System.
- B. Protect finished work at end of each day to prevent water penetration.
- C. Prepare substrates in accordance with manufacturer's instructions.
- D. MAXGRIP VENEER MORTAR: All surfaces shall be between 40°F (4°C) and 100°F (38°C). Surfaces shall be clean, free of dirt, oil, grease, paint, concrete sealers or curing compounds, and structurally sound. Ensure that all control and expansion joints are not covered with MAXGRIP. Manufactured stone shall comply with applicable requirements of ICC-ES Acceptance Criteria AC51. Thin brick veneer shall comply with applicable requirements of ASTM C 1088 per the Brick Industry Association.

### 3.03 MIXING

General: No additives are permitted unless specified in product mixing instructions. Close containers when not in use. Prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

**NOTE TO SPECIFIER: Keep only the products in this section which were selected in Section 2.02. Delete those not to be utilized.**

#### **B. Air/Water-Resistive Barriers:**

- 1. SENERSHIELD-R/RS/VB: Mix with a clean, rust-free paddle and drill until thoroughly blended. Do not add water.
- 2. Cold Temperature Additive: LT ADDITIVE: Pour the entire contents of one (1) bottle of LT ADDITIVE into one (1) full pail of SENERSHIELD-R/RS/VB. Mix with a clean, rust-free paddle and drill until fully blended.

#### **C. Senergy Base Coat:**

- 1. ALPHA Base Coat: Mix base coat with a clean, rust-free paddle and drill until thoroughly blended, before adding Portland cement. Mix one-part (by weight) Portland cement with one-part base coat.

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Add Portland cement in small increments, mixing until thoroughly blended after each additional increment. Clean, potable water may be added to adjust workability.

2. ALPHA DRY Base Coat: Mix and prepare each bag in a 5-gallon (19-liter) pail. Fill the container with approximately 1.5-gallons (5.6-liters) of clean, potable water. Add ALPHA DRY Base Coat in small increments, mixing after each additional increment. Mix ALPHA DRY Base Coat and water with a clean, rust-free paddle and drill until thoroughly blended. Additional ALPHA DRY Base Coat or water may be added to adjust workability.
3. XTRA-STOP Base Coat: Mix base coat with a clean, rust-free paddle and drill until thoroughly blended, before adding Portland cement. Mix one-part (by weight) Portland cement with one-part base coat. Add Portland cement in small increments, mixing until thoroughly blended after each additional increment. Clean, potable water may be added to adjust workability.

### D. MAXGRIP VENEER MORTAR:

1. Skim Coat: Prepare to mix one bag in a 5-gallon (19-liter) pail that is clean and free of foreign substances. 1.0 - 1.25 gallons (3.8 - 4.7 liters) of clean, potable water to a pail. Add a full bag of MAXGRIP to the pail in small increments, mixing after each addition. Mix with a low speed drill with a 4-sided mortar paddle until thoroughly blended. Let stand for 5 to 10 minutes, then remix/retemper for 1 minute before use.
2. Light weight adhered Veneer such as thick brick: Prepare to mix one bag in a 5-gallon (19-liter) pail that is clean and free of foreign substances. Add 1.0 - 1.25 gallons (3.8 - 4.7 liters) of clean, potable water to a pail. Add a full bag of MAXGRIP to the pail in small increments, mixing after each addition. Mix with a low speed drill with a 4-sided mortar paddle until thoroughly blended. Additional water may be added to adjust workability, do not exceed 1.25 gallons. Let stand for 5 to 10 minutes, then remix / retemper for 1 minute before use. The mixed material should have a thick putty consistency and not slide off the trowel when held vertically.
3. Heavy Stone and Tile: Prepare to mix one bag in a 5-gallon (19-liter) pail that is clean and free of foreign substances. Add 0.75 - 1.0 gallons (2.8 - 3.8 liters) of clean, potable water to a pail. Add a full bag of MAXGRIP to the pail in small increments, mixing after each addition. Mix with a low speed drill with a 4-sided mortar paddle until thoroughly blended. Additional water may be added to adjust workability, do not exceed 1 gallon. Let stand for 5 to 10 minutes, then remix / retemper for 1 minute before use. The mixed material should have a thick putty consistency and not slide off the trowel when held vertically.

## 3.04 APPLICATION

### A. Accessories:

1. Attach Window/Door Drip Edge level and per manufacturer's instructions.
2. Attach starter track per manufacturer's instructions and *Senergy CBS 1000 with MaxGrip Veneer Mortar Typical Details*.

### B. Senergy Air/Water-Resistive Barrier:

1. All sheathing joints and windows/openings must be protected, and the air/water-resistive barrier applied in accordance with Air/Water-Resistive/Vapor Barrier Application Guideline technical bulletin.
2. Substrate shall be dry, clean, sound, and free of releasing agents, paint, or other residue or coatings. Verify substrate is flat, free of fins or planar irregularities greater than ¼" in 10' (6.4 mm in 3 m).
3. Unsatisfactory conditions shall be corrected before application of the Senergy air/water-resistive barriers.
4. Apply the SHEATHING FABRIC and Senergy air/water-resistive barrier in accordance with the Senergy air/water-resistive barrier product bulletin.
5. Apply the MAXFLASH in accordance with MAXFLASH product bulletin.
6. Installed materials shall be checked before continuing system application.
7. Ensure the Senergy air/water-resistive barrier or MAXFLASH overlaps the top flange of the starter track.

### C. DRAINAGE MAT:

1. Apply RAINAGE MAT horizontally or vertically over Senergy Air/Water-Resistive Barrier ensuring DRAINAGE MAT is free of wrinkles.
2. Abut all vertical and horizontal edge and secure DRAINAGE MAT to substrate with sufficient

## Senergy CBS 1000 Wall System with MaxGrip Veneer Mortar

building staples or galvanized nails to remain in place prior to application of cement board.

**D. Cement Board:** Install cement board over secondary weather barrier, securely fastened, per manufacturers' recommendations, applicable building code and project requirements.

**E. Trim Accessories:** Install per manufacturer's recommendations. Refer to Senergy's *Cement-Board Stucco Trim and Accessories* bulletin for accessory placement.

**F. SELF-ADHERING MESH TAPE (4") / Senergy Base Coat:**

1. Center the SELF-ADHERING MESH TAPE (4") over all cement board joints and terminations and firmly press while unrolling.
2. Ensure SELF-ADHERING MESH TAPE is continuous, void of wrinkles. Overlap SELF-ADHERING MESH TAPE a minimum 2 1/2" (65 mm).
3. Apply mixed [ ] Base Coat to surface of SELF-ADHERING MESH TAPE by troweling from the center to the edges.
4. Allow Base Coat and SELF-ADHERING MESH TAPE to dry prior to application of MAXGRIP.

**G. Senergy CORNER MESH:**

1. Install CORNER MESH at corners.
2. Apply CORNER MESH prior to application of reinforcing mesh.
3. Cut CORNER MESH to workable lengths.
4. Apply mixed Senergy Base Coat to insulation board at outside corners using a stainless-steel trowel.
5. Immediately place CORNER MESH against the wet base coat and embed the CORNER MESH into the base coat by troweling from the corner; butt edges and avoid wrinkles.

**H. MAXGRIP – ADHERED VENEER MORTAR:**

**Note:** [Allow MaxGrip Veneer Mortar to cure for 24-hours before applying pointing mortar.](#)

Prior to installing the adhered veneer, apply selected Senergy Base Coat or MAXGRIP veneer mortar as a skim coat over cement board sheathing at approximately 1/6" (1.6mm) thick. Apply to an area that can be covered with adhered veneer before the skim coat dries. Allow skim coat layer to set for 3-5 minutes, then proceed with adhering the selected veneer

1. Thin brick veneer: Spread MAXGRIP VENEER MORTAR onto the back of bricks in a continuous layer nominally 3/16" to 1/4" (5 - 6mm) thick and press bricks firmly into place on the substrate.
2. Stone veneer: Apply MAXGRIP VENEER MORTAR to the back of clean stone veneer in a continuous layer nominally 1/4" to 3/8" (6 - 9mm) thick. Press firmly in place with a twisting movement until excess material exudes from the sides of the unit. Remove excess MAXGRIP between units.
3. Tile: Apply MAXGRIP VENEER MORTAR as a skim coat over cement board at approximately 1/16" (1.6mm) thick. Apply only to an area that can be covered with tile before the MAXGRIP skim coat dries. Installation should proceed in accordance with ANSI A 108.5 (the type and size of the tile will dictate adhesive application.)

### 3.05 CLEANING

- A. Clean work under provisions of Section [01 74 00] [ ].
- B. Clean adjacent surfaces and remove excess material, droppings, and debris.

### 3.06 PROTECTION

- A. Protect materials from rain, snow and frost for 48 - 72 hours following application.
- B. Protect installed construction under provisions of Section [01 76 00] [ ].

**END OF SECTION**

## **Senergy CBS 1000 Wall System with MaxGrip Veneer Mortar**

### **WARRANTY**

Master Builders Solutions Construction Systems US, LLC ("Master Builders") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. Master Builders **MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS.** The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. Master Builders **WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.**

Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on Master Builders' present knowledge and experience. However, Master Builders assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. Master Builders reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.