



Sentry Stucco Ultra Wall System with MaxGrip Veneer Mortar – Section 092400

1 and 3-coat impact-resistant cement plaster stucco system incorporating enhanced water management 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 Senergy® 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 Senergy brand of 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 SENERGY SENTRY STUCCO ULTRA 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 under positive or negative design loads.
2. Design for wind load in conformance with local code requirements.

B. Substrate Systems:

1. Acceptable substrates are PermaBase® Cement Board and other cement-boards conforming with ASTM C1325 (Type A-exterior); poured concrete/unit masonry; ASTM C1177 type sheathings, including, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, e²XP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing, DensElement (sheathing only); gypsum sheathing (ASTM C79/C1396); Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB, Huber Zip (sheathing only).
2. Painted and otherwise coated surfaces of brick, unit masonry, and concrete shall be inspected and prepared as approved by Master Builders Solutions before application. The applicator shall verify that the proposed substrate is acceptable prior to the Sentry Stucco Ultra System with MaxGrip Veneer Mortar installation.
3. The substrate systems shall be engineered with regard to structural performance by others.
4. Refer to Senergy’s *Accepted Stucco Wall Systems Lath and Trim Accessories* bulletin for more detailed information regarding trim requirements, etc.

C. Moisture Control:

1. Prevent the accumulation of water behind the Sentry Stucco Ultra System with MaxGrip Veneer Mortar, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.

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- 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, at the base of the wall and anywhere else required by local code or design at the time of installation.
- b. The SENERSHIELD-R/-RS/-VB air/water-resistive barrier must be installed over the substrate according to current Senergy specifications and requirements.
- c. Openings must be flashed prior to window/door, HVAC, etc. installation to provide moisture protection of the building frame and interior. Refer to Senergy's Air/Water-Resistive/Vapor Barrier Guidelines technical bulletin.
- d. 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 components to minimize condensation and leakage caused by air movement.

D. Grade Condition:

1. Sentry Stucco Ultra System with MaxGrip Veneer Mortar wall system 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).

E. System Joints:

1. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, floor lines of wood frame construction or slip tracks in steel frame construction, where substrates change and where structural movement is anticipated. Detail specific locations in construction drawings.
2. Control joints: used to control the thickness of the stucco application to ensure a leveled plane.
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 Sentry Stucco Ultra System with MaxGrip Veneer Mortar (windows, doors, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.). Refer to Senergy Sentry Stucco Ultra System with MaxGrip Veneer Mortar typical details.
3. For a list of acceptable sealants refer to *Acceptable Sealants for use with Senergy Wall Systems* technical bulletin.

F. Decks: Wood decks must be properly flashed prior to system application. For proper application, refer to Senergy Sentry Stucco Ultra System with MaxGrip Veneer Mortar typical details. The Sentry Stucco Ultra System with MaxGrip Veneer Mortar must be terminated a minimum of 50.8 mm (2") above all decks, patios, sidewalks, etc.

G. 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 air seals 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 Systems before installing windows, doors, and other penetrations through the wall.
4. Install copings and sealant immediately after installation of the Sentry Stucco Ultra System with MaxGrip Veneer Mortar and when Senergy coatings are completely dry.

TECHNICAL INFORMATION

Consult Master Builders Solutions' Technical Services Department for specific recommendations concerning all other applications. Consult the Senergy website, www.senergy.master-builders-solutions.com, for additional information about products and systems and for updated literature.

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PART 1 – GENERAL

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.

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 or not such work is specifically mentioned herein.
- B. Sentry Stucco Ultra System with MaxGrip Veneer Mortar: composite wall system of Senergy air/water resistive barrier, DRAINAGE MAT DF, PERMALATH 1000 or acceptable expanded metal or wire lath, STUCCOBASE/ STUCCOBASE PREMIX by Master Builders Solutions, Senergy BASE COAT (if specified), MAXGRIP and selected adhered veneer (by others).
- 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 Sentry Stucco Ultra System with MaxGrip Veneer Mortar as manufactured by Master Builders Solutions, Shakopee, MN.

1.02 RELATED SECTIONS

- A. Section 03 00 00 Concrete substrate
- B. Section 04 00 00 Masonry substrate
- C. Section 05 40 00 Cold-formed metal framing
- D. Section 06 11 00 Wood framing
- E. Section 06 16 00 Sheathing
- F. Section 07 27 00 Air barriers
- G. Section 07 62 00 Sheet metal flashing and trim
- H. Section 07 65 00 Flexible flashing
- I. Section 07 90 00 Joint protection
- J. Section 08 00 00 Openings
- K. Section 09 22 00 Supports for plaster and gypsum board
- L. Section 09 22 16 Non-structural metal framing
- M. Section 09 22 36 Lath
- N. Section 09 29 00 Gypsum board

1.03 REFERENCES

- A. ASTM C150 Standard Specification for Portland Cement
- B. ASTM C926 Standard Specification for Application of Portland Cement-Based Plaster
- C. ASTM C1063 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
- D. ASTM C847 Standard Specification for Metal Lath
- E. ASTM C933 Standard Specification for Welded Wire Lath
- F. ASTM C1764 Standard Test Methods for Non-Metallic Plaster Bases (Lath) used with Portland Cement Based Plaster in Vertical Applications
- G. ASTM C1787 Standard Specification for Installation of Non-Metallic Plaster Bases (Lath) used with Portland Cement Based Plaster in Vertical Applications
- H. ASTM C1788 Standard Specification for Installation of Non-Metallic Plaster Bases (Lath) used with Portland Cement Based Plaster in Vertical Applications
- I. ASTM D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
- J. ASTM D1784 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Compounds
- K. ICC-ES AC11 Cementitious Exterior Wall Coatings
- L. CCRR 0230 Intertek Code Compliance Research Report for STUCCOBASE™/STUCCOBASE™ PREMIX

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- M. CCRR 0249 Intertek Code Compliance Research Report (PERMALATH 1000)
- N. ESR-2986 ICC Evaluation Service, Inc., ES Report™ (SENERSHIELD-R/RS)
- O. ICC-ES AC51 Acceptance Criteria for Precast Stone Veneer
- P. ACI 530-02/ASCE 5-02/TMS 402-02 Building Code Requirements for Masonry Structures
- Q. ANSI A108.01 General Requirements: Sub-surfaces and Preparations by Other Trades.
- R. ANSI A108.02 General Requirements: Materials, Environmental, and Workmanship.
- S. ANSI A108.10 Installation of Grout in Stonework.
- T. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
- U. ANSI A118.10 Specifications for Load Bearing, Bonded, Waterproof Membranes for Stone Installations
- V. ANSI A137.1 Specification for Ceramic Tile
- W. ASTM C1088 Standard Specification for Thin Veneer Brick Units
- X. ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer (AMSMV) Units

1.04 SUBMITTALS

- A. Submit under provisions of Section [01 33 00]
- B. Product Data: Provide data on Sentry Stucco Ultra System with MaxGrip Veneer Mortar system materials, product characteristics, performance criteria, limitations and durability.
- C. Code Compliance: Provide manufacturer's applicable code compliance report.
- D. Samples: Submit [\[two\]](#) [\[x \]](#) [\[millimeter\]](#) [\[inch\]](#) size samples of Sentry Stucco Ultra System with MaxGrip Veneer Mortar design illustrating Finish Coat color and texture range.
- E. Certificate: System manufacturer's approval of applicator.
- F. Sealant: Sealant manufacturer's certificate of compliance with ASTM C920.
- G. System manufacturer's typical details, system design guide and related product literature which indicate preparation required, storage, installation techniques, jointing requirements and finishing techniques.

1.05 QUALITY ASSURANCE

- A. Manufacturer: More than 10 years in the insulated exterior wall systems industry, with more than 1000 completed cement plaster stucco projects.
- B. Applicator: Approved by the Senergy brand of Master Builders Solutions in performing work of this section.
- C. Regulatory Requirements: Conform to applicable code requirements.
- D. Field Samples
 - 1. Provide under provisions of Section [01 43 36] [01 43 39].
 - 2. Construct one field sample panel for each color and texture, [\[x \]](#) [\[meters\]](#) [\[feet\]](#) in size of system materials illustrating method of attachment, surface Finish color and texture.
 - 3. Prepare each sample panel using the same tools and techniques to be used for the actual application.
 - 4. Locate sample panel where directed.
 - 5. Accepted sample panel [\[may\]](#) [\[may not\]](#) remain as part of the work.
 - 6. Field samples shall be comprised of all wall assembly components including substrate, SENERSHIELD-R/RS/VB, DRAINAGE MAT DF, PERMALATH 1000 or metal plaster base, Stucco Base, Senergy Base Coat (if specified), MAXGRIP, 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 ²) @75 Pa (0.04 cfm/ft ² @ 1.57 psf)	0.0007 l/s.m ² (0.0001 cfm/ft ²) @ 75 Pa (1.57 psf) positive / post conditioning 0.0014 l/s.m ² (0.0003 cfm/ft ²) @ 75 Pa (1.57 psf) negative / post conditioning
Air Permeance of Building Materials	ASTM E2178	0.02 l/(s.m ²) @75 Pa (0.004 cfm/ft ² @ 1.57 psf)	0.0049 l/s.m ² @ 75 Pa (0.00098 cfm/ft ² @ 1.57 psf)

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Rate of Air Leakage	ASTM E283		0.0185 l/s·m ² @ 75 Pa (0.0037 cfm/ft ² @ 1.57 psf)
Water Vapor Transmission	ASTM E96	Report value	Senershield-R - 18 Perms (grains/Hr. in Hg. ft ²) @ 10 mils wet film thickness Senershield-RS 18 Perms (grains/Hr. in Hg. ft ²) @ 12 mils wet film thickness Senershield-R/RS - 14 Perms (grains/Hr. in Hg. ft ²) @ 20 mils wet film thickness Senershield-VB - 0.09 Perms (grains/Hr. in Hg. ft ²) @ 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

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	Pass

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		exposure to -18° C (0° F)	
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. Sentry Stucco Ultra System with MaxGrip Veneer Mortar Wall System and Component Performance:

TEST	METHOD	CRITERIA	RESULTS
Freeze-thaw Resistance	Per ICC-ES acceptance criteria AC-11	No sign of deleterious effects after 10 cycles	STUCCOBASE passed with no visible evidence of deterioration when examined under 5x magnification
Water Vapor Transmission	ASTM E96 -Wet Cup	Report Value	StuccoBase 20.4 perms
Racking Load Test	ASTM E72	Report Value	Maximum load resistance 5530 pounds (250 kg)
Compressive Strength	ASTM C109	Report Value	22.4 MPa (3245 psi) average for STUCCOBASE
Flexural Strength	ASTM C348	Report Value	4.57 MPa (663 psi) average for STUCCOBASE
Surface Burning	ASTM E84	Report Value	<25 Flame Spread <450 Smoke Developed Includes PermaLath 1000, StuccoBase, and Senergy Finishes
Non-Combustibility	ASTM E136	No flaming, excess temperature rise or weight loss when exposed to 750°C (1382°F)	Pass StuccoBase with PermaLath 1000 or metal plaster base
Fire Resistance Rated Assemblies	ASTM E119	No transmission of heat greater than 250°F above ambient; no passage of flame or hot gasses; no passage of water from hose stream test; for loadbearing walls – ability to withstand load under test conditions	1 Hour Rated Assemblies ¹ : <ul style="list-style-type: none"> • Load bearing wood stud wall with 10.9 mm (7/16") OSB and 9.5 mm (3/8") STUCCOBASE. • Load bearing wood stud wall with 16 mm (5/8") Type X gypsum sheathing and 9.5 mm (3/8") STUCCOBASE • Load bearing wood stud wall with 10.9 mm (7/16") OSB, PERMALATH 1000 & • 12.7 mm (1/2") STUCCOBASE (from inside only). • Non-load bearing steel framed wall with 16 mm (5/8") Type X gypsum sheathing, PERMALATH 1000 & 12.7 mm (1/2") STUCCOBASE

Reference Intertek Evaluation Reports CCRR-0230 and CCRR-0249 for more information

5. ASTM E330 Wind-Load:

FRAMING	SHEATHING	LATH	ALLOWABLE WIND LOAD	
Minimum 2x4 wood with a maximum spacing of 24" on center	Fiberboard, gypsum board and wood structural panels	Minimum No. 20 gage by 1" metal lath installed with 11 gage roofing nails or NO. 16 gage staples spaced as follows: 6 in. o.c. for framing with G=0.50 5 in. o.c. for framing with G=0.46 4 in. o.c. for framing with G=0.42	40 psf positive	40 psf negative
Min. 3-5/8 in. No. 20 gage steel studs with a maximum spacing of 24 in. o.c.	Fiberboard, gypsum board and wood structural panels	Min. No. 20 gage by 1-in. metal lath installed with No 7, S-12-20 self-drilling, self-tapping panhead screws, spaced at 6 in. o.c.	40 psf positive	40 psf negative

6. 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	> 100 cycles, no failure of MaxGrip

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		place of concrete beam	
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.

1.06 DELIVERY, STORAGE AND HANDLING OF MASTER BUILDERS SOLUTION MATERIALS

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

1.07 PROJECT/SITE CONDITIONS

- A. Do not apply 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 materials to frozen surfaces.
- C. Maintain ambient temperature at or above 40°F/4°C during and at least 24 hours after Sentry Stucco Ultra System with MaxGrip Veneer Mortar installation and until dry.

1.08 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Sentry Stucco Ultra 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.

1.09 WARRANTY

- A. Provide Master Builders Solutions standard warranty for Senergy Sentry Stucco Ultra System with MaxGrip Veneer Mortar installations under provisions of Section [01 70 00]. Warranty term varies with system component's configuration, 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

All components of the Sentry Stucco Ultra System with MaxGrip Veneer Mortar shall be obtained from the system manufacturer or through an authorized distributor.

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:

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1. Air/Water-Resistive Barrier: **(Required, Select One)**
 - 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, 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.
 - b. [FLASHING PRIMER](#): A water-based primer for use prior to application of WS FLASH on all acceptable surfaces.
 4. [Cold Temperature Additive](#):
[LT ADDITIVE](#): Blending of LT ADDITIVE with a pail of SENERSHIELD-R/RS/VB enables application of these materials at temperatures as low as 25°F (-4°C).
- B. DRAINAGE MAT DF by Master Builders Solutions:** A three-dimensional drainage core bonded to a breathable fabric. The mat consists of fused, entangled filaments designed to provide an unobstructed drainage path.
- C. Lath/Plaster Base: (Required, Select One)**
NOTE TO SPECIFIER: Ensure selection of the appropriate Lath based on specified thickness of the Senergy Sentry Stucco Ultra with MaxGrip wall system. Delete those products not utilized. Reference Senergy Lath & Trim Accessories System support bulletin for additional information.
1. [PERMALATH 1000](#) by Master Builders Solutions: An open weave, three-dimensional self-furring, nominal 1/4" thick glass fiber reinforcing lath is for use with a minimum thickness of 12.7mm (1/2"). Complies with ASTM C1764, C1787 and C1788.
 2. [Woven or Welded Wire Lath](#): A minimum No. 18 gauge galvanized woven wire fabric is for use with 9.5-12.7mm (3/8"-1/2") thickness only. Other laths shall comply with ASTM C933 (welded) and ASTM C1032 (woven). The lath is self-furred or furred when applied over all substrates.
 3. [Expanded Metal Lath](#): The lath shall comply with ASTM C847. Furring and self-furring requirements shall be as set forth for wire lath. Minimum weight is 1.36 kg/m² (2.5 lbs./yd²). Refer to ASTM C 1063 for additional information.
- D. Fastening for Lath/Plaster Base: (Required, Select One or More)**
1. [PERMALATH 1000: Washers: ULP-302 \(1 3/4"\) or Lath Plate \(1 1/4"\) Mechanical Fastening Systems](#) by Wind-Lock Corp.
 - a. [Masonry](#): masonry type [M] fastener with ULP 302 diameter washer; or Lath Plate 25 mm (1") minimum penetration into masonry. Fastener spacing 6" o.c. vertically and 16" o.c. horizontally.
 - b. [Light Gauge Steel Framing/Furring \(20 Gauge\)](#): light metal type [LM] bugle head screws with ULP 302 (1 3/4") diameter washer or Lath Plate 16 mm (5/8") minimum penetration into framing 6" o.c. vertically and 16" o.c. horizontally
 - c. [Heavy Gauge Steel Framing \(18 to 12 Gauge maximum\)](#): metal type [S] bugle head screws with ULP 302 (1 3/4") diameter washer or Lath Plate or 32 mm (1 1/4") long x 2.5 mm (1/8") diameter VersaPin Gripshank® fasteners by Aerosmith Fastening Systems with Lath Plates; 16 mm (5/8") minimum penetration to framing 6" o.c. vertically and 16" o.c. horizontally.
 - d. [Wood framing](#): wood type [W] bugle head screws with ULP 302 (1 3/4") diameter washer or Lath Plate; 16 mm (5/8") minimum penetration into framing or minimum 16-gauge wire staples with minimum 3/4" crown and minimum 3/4" penetration into framing. 6" o.c. vertically and 16" o.c. horizontally.
 2. [Metal Plaster Base](#): Fasten per ASTM C1063

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- a. Masonry: Power or powder actuated fasteners and/or concrete stub nails with minimum 3/4" penetration. Fastener spacing not more than 7" o.c. vertically and 16" o.c. horizontally
- b. Metal framing: Screws appropriate to framing gauge, not less than 3/8" penetration through framing. Fastener spacing not more than 7" o.c. vertically and 16" or 24" o.c. horizontally, based on metal plaster base type
- c. Wood framing: nails, 1" wire staples penetrating wood framing not less than 3/4" or screws penetrating wood framing not less than 5/8". Fastener spacing not more than 7" o.c. vertically and 16" or 24" o.c. horizontally, based on metal plaster base type

E. Stucco Base Coat: (Required, Select One)

1. STUCCOBASE by Master Builders Solutions: Factory-blended stucco mixture of Portland cement, reinforcing fibers, and proprietary ingredients.
2. STUCCOBASE PREMIX by Master Builders Solutions: Factory-blended stucco mixture of Portland cement, reinforcing fibers, sand, and proprietary ingredients.

F. Plaster Sand: (Required if STUCCOBASE is retained from above): Must be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter. Sampling and testing must comply with ASTM C897. Plaster sand must be graded within the following limits: Percent retained by weight.

Retained on ± 2 Percent

U.S. Standard Sieve	Minimum	Maximum
No. 4		0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

G. Water: Clean and potable without foreign matter.

H. Senergy Base Coat: (As a skim coat for thin brick, tile or stone veneer over brown coat only)

1. ALPHA Base Coat: A 100% acrylic base coat, field-mixed with Type I or Type II Portland cement. It has a creamy texture that is easily spread.
2. ALPHA DRY Base Coat: A dry-mix polymer adhesive and base coat containing Portland cement, and requiring only water for mixing.

I. Portland cement: (Required if ALPHA BASE is Selected): Conform to ASTM C150, Type I, II, or I/II, grey or white; fresh and free of lumps.

J. MAXGRIP VENEER MORTAR by Master Builders Solutions: A high-strength specially formulated adhesive used to fasten manufactured stone, ceramic tile and thin brick.

K. Adhered Veneer (By Other):

1. Manufactured Stone Veneer Units: shall comply with ICC-ES AC51 Acceptance Criteria Adhered Manufactured Stone Masonry Veneer or ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer Units.
2. Thin Brick Veneer Units: shall comply with ASTM C1088 Standard Specification for Thin Veneer Brick Units Made from Clay or Shale.
3. Tile: shall comply with requirements of the Tile Council of North America/ANSI A137.1 Standard for Ceramic Tile and other applicable TCNA standards.

2.03 ACCESSORIES

Trim: Casing bead, corner bead, expansion joint and weep screed accessories shall meet the requirements of ASTM C1063. Accessories shall be: vinyl, meeting ASTM D1784; galvanized, meeting ASTM A525 and ASTM A526; or zinc, meeting ASTM B69. Vinyl or zinc accessories are recommended where highly humid or salt-laden service conditions exist. Refer to Senergy's Accepted Stucco Wall Systems Lath and Trim Accessories bulletin for additional information.

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1. Foundation weep screed: Beveled edge designed to terminate finish system and drain internal moisture.
2. Casing bead: Square edge style.
3. Corner bead: Small radius nose style.
4. Control joints: W-shaped accordion profile style.
5. Expansion joints: [\[Two-piece type slip-joint design\]](#) or [\[pair of casing beads spaced for application of sealant bead\]](#)

PART 3- EXECUTION

3.01 EXAMINATION

A. Verify project site conditions under provisions of Section [01 89 00] [].

B. Walls:

1. Substrates:
 - a. Acceptable substrates are PermaBase[®] Cement Board and other cement-boards conforming with ASTM C1325 (Type A-exterior) , poured concrete/unit masonry, e²XP[™] sheathing (ASTM C1177), GlasRoc[®] sheathing (ASTM C1177), Securock[™] glass-mat sheathing (ASTM C1177), DensGlass and DensElement (sheathing only) exterior sheathing (ASTM C1177), Weather Defense[™] Platinum sheathing (ASTM C1177), GreenGlass[®] sheathing (ASTM C1177), gypsum sheathing (ASTM C79/C1396), Exposure I or exterior plywood (Grade C/D or better), Huber Zip (sheathing only), or Exposure I OSB.
 - b. Sheathings must be securely fastened per applicable building code requirements and manufacturer's recommendations.
 - c. Examine surfaces to receive system and verify that substrate and adjacent materials are dry, clean, and sound. Verify substrate surface is flat, free of fins or planar irregularities greater than 6 mm in 3 m (1/4" in 10').
 - d. When applying Senergy Air/Water-Resistive Barriers to concrete/unit masonry, verify concrete/unit masonry is free of dust, dirt, grease, oils, laitance, efflorescence, biological residue, existing paint or coatings, curing compounds, form release agents, or any other contaminants which might affect the bond. Masonry walls should be properly cured to full load bearing capacity, laid true, and with joints tooled. Properly prepared concrete will have an open texture similar to fine grit sandpaper.
 2. Flashings:
 - a. All flashings are by others and must be installed in accordance with specific manufacturer's requirements. Where appropriate, end-dams must be provided.
 - b. Openings must be flashed prior to window/door, HVAC, etc. installation. Refer to Senergy's Secondary Moisture Protection Barrier Guidelines for Senergy Stucco Wall System bulletin for further guidance.
 - c. Windows and openings shall be flashed according to design and building code requirements.
 - d. Individual windows that are ganged to make multiple units require continuous head flashing and/or the joints between the units must be fully sealed.
 3. Roof: Verify that all roof flashings have been installed in accordance with the guidelines set by the Asphalt Roofing Manufacturers Association (ARMA).
 4. Kick-out flashing: Kick-out flashing must be installed where required. The kick-out flashing must be leak-proof and angled (min 100°) to allow for proper drainage and water diversion. Refer to Senergy's Sentry Stucco Ultra System with MaxGrip Veneer Mortar wall system typical details.
- C. Do not proceed until all unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Protect all surrounding areas and surfaces from damage and staining during application of Senergy Sentry Stucco Ultra System with MaxGrip Veneer Mortar.
- B. Protect finished work at end of each day to prevent water penetration.

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

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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.

A. 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.

B. Stucco Base Coat:

1. STUCCOBASE: Use mixer which is clean and free of foreign substances. Add 5-6 gallons (18.9-22.7 liters) of clean potable water to mixer per one bag of STUCCOBASE. Add one bag of STUCCOBASE and one half 100-120 lbs. (45.4-54.4 kg) of the required plaster sand (ASTM C144 or ASTM C897). Mix for 3-4 minutes at normal mixing speed while adding the remainder 100-120 lbs. (45.4-54.4 kg) of the plaster sand. Allow material to set for 2-4 minutes and then remix adding water to achieve desired consistency. Desired consistency varies with type of application (trowel or gun), substrate (paper-backed lath or block) and whether the stucco is applied to a wall or a ceiling.

Note: Continuous mixing may cause excessive air entrainment.

2. STUCCOBASE PREMIX: Use mixer which is clean and free of foreign substances. Add 2-2.5 gallons (7.6-9.5 liters) of clean potable water to mixer. Slowly add one bag of STUCCOBASE PREMIX. Mix for one minute at normal mixing speed. Allow material to set for 2-4 minutes with mixing blades at rest. Then re-mix, adding water to achieve desired consistency. Desired consistency varies with type of application (trowel or gun), substrate (paper-backed lath or block) and whether the stucco is applied to a wall or a ceiling. Note: Continuous mixing may cause excessive air entrainment.

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. 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 19-liter (5-gallon) pail. Fill the container with approximately 5.6-liters (1.5-gallons) 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.

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 VENEER MORTAR 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 Thin 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 VENEER MORTAR 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 VENEER MORTAR 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.

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3.04 APPLICATION

A. Accessories: Attach Window/Door Drip Edge level and per manufacturer's instructions.

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 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 1/4" 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 SHEATHING FABRIC Senergy air/water-resistive barrier or MAXFLASH overlaps the top flange of the starter track.
8. Installed materials shall be checked before continuing system application.

C. Drainage Mat DF:

1. Apply DRAINAGE MAT DF horizontally or vertically over Senergy air/water-resistive barrier ensuring DRAINAGE MAT DF is free of wrinkles.
2. Abut all vertical and horizontal edge and Secure DRAINAGE MAT DF to substrate with sufficient building staples or galvanized nails to remain in place prior to application of insulation board.
3. The fabric side of the DRAINAGE MAT DF shall face outward toward the installer, and the nylon mat shall be in contact with the surface of the Senergy air/water-resistive barrier

D. Trim: Refer to Senergy Stucco Wall Systems Lath and Trim Accessories technical bulletin.

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.

E. Lath: Install in accordance with all local code requirements, applicable standards and application procedures.

1. PERMALATH 1000:

- a. Apply with minimum 3" (76mm) overlap at vertical and horizontal edges and overlap on flange of trim accessories. PERMALATH 1000 can be applied horizontally or vertically and should be applied such that it is flat and free of ripples, wrinkles, etc. Fastener System type appropriate for application and substrate. Fastener spacing 6" o.c. (152 mm) vertically and 16" o.c. (406 mm) horizontally.
- b. Apply STUCCOBASE within 60 days of PERMALATH 1000 application.

2. Woven/Welded Wire Lath:

- a. Wire or lath shall be applied with minimum 1" (25 mm) end laps and side laps.
- b. Furring crimps shall occur at maximum 6" (152 mm) intervals each way.
- c. Refer to ASTM C1063 for additional fastening information.

3. Expanded Metal Lath

- a. The metal lath shall be applied with minimum 1/2" (13 mm) side laps and 1" (25 mm) end laps.
- b. When end laps occur between supports, lace or wire ties the ends of the sheets with 0.0475" (1.2 mm) galvanized annealed steel wire.
- c. Refer to ASTM C1063 for additional fastening information.

NOTE: Supplemental fasteners, in the framing or sheathing, can be used to secure lath prior to application of STUCCOBASE.

F. Stucco Base Coat:

1. For Stone Veneer only - 3/8"-1/2" scratch coat (9.5-12.7 mm).
 - a. Following surface preparation and installation of the lath and accessories apply selected stucco base mixture to the approved substrate by hand troweling or machine spraying to a thickness of

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- 3/8" to 1/2" (9.5-12.77 mm), completely embedding the lath.
- b. Cross rake (scratch) the stucco to provide open surface for bonding stone veneer.
 - c. Moist cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and windy conditions may make additional fogging necessary
2. For Thin Brick, Tile or Stone Veneer - 3/8"-7/8" thickness (9.5-22mm):
- a. Nominal plaster base coat thickness:
 - i. First coat "scratch": 3/8" (9.5mm)
 - ii. Second coat "brown": 3/8" (9.5mm)
 - b. Apply selected stucco base mixture to the approved substrate by hand troweling or machine spraying with sufficient force to develop full adhesion between stucco base mixture and the substrate.
 - c. Apply first coat to completely embed lath. Cross rake to provide key for second brown coat. Coat must be uniform in thickness. Ensure the first coat is properly "scratched" and sufficiently rigid to resist cracking prior to application and leveling of the second or "brown" coat.
 - d. Dampen scratch coat, apply second brown coat to provide the required total thickness. Trowel stucco base into trim to seat trim. The lath shall be fully embedded in the coating and shall be completely covered. Coat must be uniform in thickness. Rod off to desired thickness, leveled with screeds, to provide a true, flat plane. Follow this by wood floating or darbying the surface.
 - e. Damp cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and wind may make additional fogging necessary.
- G. MAXGRIP – Adhered Veneer Mortar:** Prior to installing the adhered veneer, apply selected Senergy Base Coat or MAXGRIP VENEER MORTAR as a skim coat over stucco brown coat 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
- Note: MAXGRIP VENEER MORTAR shall be applied and veneer installed such that the MAXGRIP VENEER MORTAR is free of voids. Allow MAXGRIP VENEER MORTAR to cure for 24-hours before applying pointing mortar.**
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 VENEER MORTAR between units.
 3. Tile: 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 Senergy base coat, air/water-resistive barriers, primer and finish from rain and temperatures below 4°C (40°F) for 24 hours or until dry.
- C. Protect installed construction under provisions of Section [01 76 00] [].

END OF SECTION

Senergy Sentry Stucco Ultra Wall System

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.