

Senturion Wall System – Section 07 24 19

Water-managed Class PB EIFS incorporating a water-resistive barrier

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 Master Builders Solutions published comments.

Designing and Detailing a SENTURION Wall System

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/240 of span under positive or negative design loads unless otherwise approved in writing by Master Builders Solutions before installation.
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, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing, DensElement (sheathing only), gypsum sheathing (ASTM C79/C1396); Huber Zip System sheathing; Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB.
2. The substrate systems shall be engineered

C. Moisture Control

1. Prevent the accumulation of water behind the EIFS, 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 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. **Impact Resistance:** Provide ultra-high impact resistance to a minimum height of 6'- 0" (1.8m) above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or potential impact. Indicate the areas with impact resistance requirements other than “Standard” on contract drawings.

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E. Color Selection: The use of dark colors must be considered in relation to wall surface temperature as a function of local climate conditions. Select Finish Coat color with a light reflectance value (LRV) of 20% or higher. The use of dark colors (LRV less than 20%) is not recommended with EIFS that incorporate expanded polystyrene (EPS). EPS has a sustained service temperature limitation of approximately 160°F (71°C).

F. System Joints

1. Typical locations for system expansion joints are at building expansion joints, at prefabricated panel joints, floor lines of wood frame construction or where slip tracks are used in steel frame construction, where substrates change and where structural movement is anticipated. It is the sole responsibility of the project design team, including the architect, engineer, etc., to ultimately determine specific expansion joint placement, width and design. Detail specific locations in construction drawings.
2. Sealant joints are required at all penetrations through the SENTURION Wall System (windows, doors, etc.)
3. Specify compatible closed cell backer rod and acceptable sealant that has been evaluated in accordance with ASTM C 1382, "Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish System (EIFS) Joints," and that meets minimum 50% elongation after conditioning.
4. The system must be properly terminated (backwrapped a min. of 2", properly sealed, flashed) at all penetrations, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.

G. Grade Condition: The SENTURION 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 6" (152 mm) clearance above grade or as required by code, a minimum 1" (25 mm) clearance above finished grade (sidewalk/concrete flatwork).

H. Trim, Projecting Architectural Features

(NOTE TO SPECIFIER: Installation of the Senergy Wall System outside the slope guidelines referenced in this specification may still qualify for a standard warranty; however, low sloping EIFS conditions are subject to extreme heat, increased maintenance and premature deterioration of the system shall be expected and any deleterious effects caused by the lack of slope will not be the responsibility of Master Builders Solutions. Senergy Wall Systems are designed and tested to be applied to vertical surfaces. The design professional has the option to build according to his/her project needs. The design professional must also consider geography, climate, building orientation, wall orientation and adjacent building components when designing with EIFS. The slope guidelines referenced below are provided to offer assistance to the owner and/or design professional. Final design of any building is the responsibility of the design professional.)

1. Minimum slope for all projections shall be 1:2 (27°) with a maximum length of 12" (30.5 cm) [e.g. 6" in 12" (15 cm in 30.5 cm)]. Increase slope for northern climates to prevent accumulation of ice/snow on the surface.

I. 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 site grading such that SENTURION Wall System terminates a minimum of 6" (152 mm) above finished grade or as required by code.
4. Provide protection of rough openings in accordance with Senergy Moisture Protection Guidelines for Senerflex Wall Systems before installing windows, doors, and other penetrations through the wall.
5. Install copings and sealant immediately after installation of the SENTURION Wall System and when Senergy coatings are completely dry.

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TECHNICAL INFORMATION

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

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 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. SENTURION Wall System:
 - 1. Option 1: Composite wall Exterior Insulation and Finish System consisting of Tyvek StuccoWrap, DrainWrap or Commercial Wrap D recognized in ICC-ES ER 2375, rigid insulation, mechanical fasteners, Senergy Base Coat, Senergy Reinforcing Mesh and Senergy Finish Coat.
 - 2. Composite wall Exterior Insulation and Finish System consisting of channeled EPS board, mechanical fasteners, Senergy Base Coat, Senergy Reinforcing Mesh and Senergy Finish Coat.
 - 3. Option 3: Composite wall Exterior Insulation and Finish System consisting of a code approved air/weather-resistive barrier, DRAINAGE MAT by Master Builders Solutions, rigid insulation, mechanical fasteners, Senergy Base Coat, Senergy Reinforcing Mesh and Senergy Finish Coat.
- 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 SENTURION Wall System 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 16 00 Sheathing
- E. Section 06 11 00 Wood framing
- 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 29 00 Gypsum board

1.03 DEFINITIONS

- A. EIFS: Exterior assembly comprised of adhesive, rigid insulation, base coat, reinforcing mesh, and finish coat.
- B. Class PB Systems: A class of EIFS where the base coat varies in thickness depending upon the number of layers or thickness of reinforcing mesh. The reinforcing material is glass fiber mesh, which is embedded into the base coat at the time of installation. The base coat shall be applied so as to achieve reinforcing mesh embedment with no reinforcing mesh color visible, nominal thickness of 1/16" (1.6 mm). Protective finish coats, of various thicknesses, in a variety of textures and colors, are applied over the base coat.
- C. Rainscreen: A wall cladding design with an exterior surface for primary weather protection and aesthetics, that incorporates an inner secondary air/weather barrier to accommodate incidental moisture and direct it to the exterior

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1.04 SUBMITTALS

- A. Submit under provisions of Section 01 33 00
- B. Product Data: Provide data on SENTURION Wall 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 SENTURION Wall System 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 C1382.
- G. System manufacturer's current specifications, typical details, system overview 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 EIFS industry, with more than 1000 completed EIFS projects.
- B. Applicator: Approved by Master Builders Solutions in performing work of this section.
- C. Regulatory Requirements: Conform to applicable code requirements for EIFS.
- 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, air/water-resistive barrier, insulation board, base coat, reinforcing mesh, primer (if specified), finish coat, and typical sealant/flashing conditions.
- E. Testing:
 - 1. SENTURION System and Component Performance

TEST	METHOD	CRITERIA	RESULTS
EIFS and EIFS with Drainage	ASTM E2568 and ICC-ES AC 235		Meets all performance requirements
Drainage Efficiency	ASTM E2273	90% Minimum	95.3% with Tyvek StuccoWrap
Transverse Wind-load	ASTM E330	3 5/8" x 20 ga steel stud framing with gypsum, cement board or wood sheathing	Average ultimate loads (psf): 16" oc framing - 1" EPS: 63 positive, 87 negative - 2" EPS: 63 positive, 87 negative 24" oc framing - 1" EPS: 30 positive, 63 negative - 2" EPS: 36 positive, 63 negative Note – positives not taken to failure
Transverse Wind-load	ASTM E330	2x4 wood framing with minimum 7/16" wood sheathing	Average ultimate loads (psf): 16" oc framing: - 1" EPS: 81 positive, 105 negative - 2" EPS: 84 positive, 123 negative 24" oc framing - 1" EPS: 57 positive, 99 negative - 2" EPS: 57 positive, 108 negative Note – positives not taken to failure
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 with 4" thick EPS insulation.
Fire Endurance	ASTM E119	Maintain fire resistance of existing rated assembly	1-hour rating with maximum 4" thick EPS insulation
Intermediate Scale Multi-story Fire Test	NFPA 285 / UBC Standard 26-9	1. Resist flame propagation over the exterior surface 2. Resist vertical spread of flame within combustible core/component of panel from one story to the next	Met test criteria with 4" thick EPS insulation.

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		3. Resist vertical spread of flame over the interior surface from one story to the next 4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces	
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)
Abrasion Resistance	ASTM D968	No Cracking or loss of film integrity at 528 qt. (500L) of sand	Finish Coat not worn through after 686 liters of falling sand
Accelerated Weathering	ASTM G 153 (formerly G23)	No deleterious effects after 2000 hours.	Pass
Accelerated Weathering	ASTM G 154 (formerly G53)	No deleterious effects after 2000 hours.	Pass - No deleterious effects after 7500 hours.
Mildew Resistance	Mil Std 810B Method 508	No fungus growth after 28 days	Pass
Salt Fog Resistance	ASTM B117	No deleterious effects after 300 hours	Pass
Water Resistance of Coating in 100% R.H.	ASTM D 2247	No deleterious effects after 14 days exposure	Pass

2. Reinforcing Mesh Testing and Impact Resistance

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)
FLEXGUARD 4	ASTM E2486 (formerly EIMA 101.86)	25-49 inch-lbs. (2.8-5.6 j)	Pass
INTERMEDIATE 6	ASTM E2486 (formerly EIMA 101.86)	25-49 inch-lbs. (2.8-5.6 j)	Pass
INTERMEDIATE 12	ASTM E2486 (formerly EIMA 101.86)	50-89 inch-lbs. (5.7-10.1 j)	Pass
INTERMEDIATE 12 & FLEXGUARD 4	ASTM E2486 (formerly EIMA 101.86)	90-150 inch-lbs. (10.2-17.0 j)	Pass
STRONG 15 & FLEXGUARD 4	ASTM E2486 (formerly EIMA 101.86)	150 inch-lbs. (17 j)	Pass
HI-IMPACT 20 & FLEXGUARD 4	ASTM E2486 (formerly EIMA 101.86)	150 inch-lbs. (17 j)	Pass

1.06 DELIVERY, STORAGE AND HANDLING

- Deliver, store and handle products under provisions of Section [01 65 00] [01 66 00] [].
- Deliver Master Builders Solutions materials in original unopened packages with manufacturer's labels intact.
- Protect Master Builders Solutions materials during transportation and installation to avoid physical damage.
- Store Master Builders Solutions materials in cool, dry place protected from freezing. Store at no less than 40°F/4°C (50°F/10°C ALUMINA finish).
- Store insulation boards flat and protected from direct sunlight and extreme heat.
- Store Reinforcing Mesh in cool, dry place protected from exposure to moisture.

1.07 PROJECT/SITE CONDITIONS

- Do not apply Master Builders Solutions material in ambient temperatures below 40°F/4°C (50°F/10°C for ALUMINA Finish). Provide properly vented, supplementary heat during installation and drying period when temperatures less than 40°F/4°C (50°F/10°C for ALUMINA Finish) prevail.
- Do not apply materials to frozen surfaces.
- Maintain ambient temperature at or above 40°F/4°C (50°F/10°C for ALUMINA Finish) during and at least 24 hours after product installation and until dry.

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1.08 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of SENTURION Wall System 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 material warranty for SENTURION Wall System installations under provisions of Section [01 70 00].
- B. Comply with Master Builders Solutions project review requirements and notification procedures to assure qualification for warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. SENTURION Wall System (Class PB System) 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.

SENTURION OPTION 1 Wall System

A. Air/Water-Resistive Barrier: (Required, Select One)

SENTURION OPTION 1:

1. Dupont™ Tyvek® StuccoWrap®
2. Dupont™ Tyvek® DrainWrap™
3. Dupont™ Tyvek® CommercialWrap® D

SENTURION OPTION 2 and 3 Wall System

1. Code Compliant Air/Water-Resistive Barrier.

B. Drainage Mat by Master Builders Solutions (Required for Option 3): Three-dimensional drainage core consisting of fused, entangled filaments.

C. Insulation Board: (Required, Select One)

SENTURION OPTION 1 & 3 (Select One)

1. Expanded polystyrene (EPS); ASTM C578, Type I; Flame spread less than 25, smoke developed less than 450 per ASTM E84, UL 723.
 - a. Minimum density 0.95 lb./ft³ (15.22 kg/m³); K= 0.24 per inch (6.09 per mm).
 - b. Minimum thickness as indicated on drawings [minimum 3/4" (19 mm).
 - c. Air-dried (aged) six weeks, or equivalent, prior to installation.
 - d. Edges: square within 1/32" per foot (0.8 mm per meter).
 - e. Thickness: tolerance of plus or minus 1/16" (1.6 mm).
 - f. Size: 2' x 4' (0.6 m x 1.22 m).
 - g. Length and width: tolerance of plus or minus 1/16" (1.6 mm).
2. Polyisocyanurate insulation board: Quik-R by Dow; or Stucco-Shield II by Atlas Roofing Corporation.
 - a. Nominal density 2 lbs./ft³ (32 kg/m³).
 - b. Minimum thickness as indicated on drawings 1" (25mm).
 - c. Size: 4' x 8', 4' x 9' (1.22 m x 2.44 m, 1.22 m x 2.74 m) or other size as provided by insulation board manufacturer.
 - d. Edges: square within 3/16" (4 mm) (4' x 8' / 1.22 m x 2.44 m).
 - e. Thickness: tolerance of less than 1/16" (1.6 mm) (1" thick / 25 mm).
 - f. Length: tolerance of plus or minus 1/4" (6 mm) (4' x 8' / 1.22 m x 2.44 m).
 - g. Width: tolerance of plus or minus 1/16" (1.6 mm) (4' x 8' / 1.22 m x 2.44 m).

SENTURION OPTION 2 (REQUIRED)

3. Channeled Expanded polystyrene (EPS); ASTM C578, Type I; Flame spread less than 25, smoke developed less than 450 per ASTM E84, UL 723.
 - a. Channels at 6mm deep x 32mm wide (1/4" x 1 1/4") drainage channels running parallel to the 2' dimension and spaced 50mm (2") on center.
 - b. Minimum density 15.22 kg/m³ (0.95 lb./ft³; K=6.09 per mm (0.24 per inch).

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- c. Minimum thickness as indicated on drawings [minimum 38 mm (1.5").
- d. Air-dried (aged) six weeks, or equivalent, prior to installation.
- e. Edges: square within 0.8 mm per meter (1/32" per foot).
- f. Thickness: tolerance of plus or minus 1.6 mm (1/16").
- g. Size: 0.6 m x 1.22 m (2' x 4').
- h. Length and width: tolerance of plus or minus 1.6 mm (1/16").

NOTE: The below material options are used for both SENTURION OPTION 1 or OPTION 2 Wall Systems.

D. Insulation Board Fasteners: **(Required, Select One or More)**

1. EPS Insulation Board Fasteners: Wind-Devil 2 Mechanical Fastening System manufactured by Wind-Lock Corp.
 - a. Temporary Fasteners: Galvanized nails or building staples.
 - b. Light Gauge Steel Framing (20 gauge): Type LM fastener and plate system; 5/8" (16 mm) minimum penetration into framing.
 - c. Heavy Gauge Steel Framing (20 to 12-gauge maximum): Type S fastener and plate system; 5/8" (16 mm) minimum penetration into framing.
 - d. Masonry: Type ME expansion fastener and plate system; 1" (25 mm) minimum penetration into masonry.
 - e. Wood Framing:
 1. Type W fastener and plate system; 5/8" (16 mm) minimum penetration into framing.
 2. Galvanized common nails with Wind-Lock ULP-302 plates; 1" (25.4 mm) minimum penetration into framing.
2. Polyisocyanurate Insulation Board Fasteners:
 - a. Temporary Fasteners: Galvanized nails or building staples.
 - b. Unit Masonry or Concrete: Type ME expansion anchor or Type M 3/16" (4.8 mm) diameter bugle head masonry anchor with 1.75" (44.45 mm) diameter ULP-402 plate by Wind-Lock Corp. or plastic Quik-Cap washer by Celotex; 25.4 mm (1") minimum anchor penetration into masonry.
 - c. Light Gauge Steel Framing/Furring (20 gauge): Type S bugle head screws 1.75" (44.45 mm) diameter ULP-402 plate by Wind-Lock Corp. or plastic Quik-Cap washer by Celotex; 1" (25.4 mm) minimum anchor penetration into framing.
 - d. Heavy Gauge Steel Framing (20 to 12-gauge maximum): Type S-12 bugle head screws 1.75" (44.45 mm) diameter ULP-402 plate by Wind-Lock Corp. or plastic Quik-Cap washer by Celotex; 1" (25.4 mm) minimum anchor penetration into framing.
 - e. Wood Framing: Type W bugle head screws or galvanized common nails with ULP-402 plate by Wind-Lock Corp. or plastic Quik-Cap washer by Celotex; screws shall penetrate framing 5/8" (15.9 mm) minimum; galvanized common nails shall penetrate framing 1" (25.4 mm) minimum.

E. Senergy Base Coats: **(Required, Select One or More)**

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.
3. XTRA-STOP Base Coat: a 100% acrylic-based, water-resistant base coat, field-mixed with Type I or Type II Portland cement.
4. ALPHA GENIE Base Coat: a 100% acrylic, fiber-reinforced base coat, adhesive and leveler that is field-mixed with Type I or Type II Portland cement.

NOTE TO SPECIFIER: Portland cement is not required if ALPHA DRY Base Coat is specified.

F. Portland cement: Conform to ASTM C150, Type I, II, or I/II, grey or white; fresh and free of lumps.

G. Water: Clean and potable without foreign matter.

H. Senergy Reinforcing Mesh: Balanced, open weave glass fiber reinforcing mesh; twisted multi-end strands treated for compatibility Senergy Base Coat. **(Required, Select One or More)**

1. FLEXGUARD 4: standard weight, 4 oz.
2. INTERMEDIATE 6: standard/medium weight, 6 oz.
3. INTERMEDIATE 12: intermediate weight, 12 oz.
4. STRONG 15: heavy weight, 15 oz. used only in combination with FLEXGUARD 4 or INTERMEDIATE 6.

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5. HI-IMPACT 20: heavy weight, 20 oz. used only in combination with FLEXGUARD 4 or INTERMEDIATE 6.
6. CORNER MESH: Intermediate weight, pre-marked for easy bending, for reinforcing at exterior corners.
- I. **COLOR COAT Coating by Master Builders Solutions (Optional):** A 100% acrylic-based coating. It is designed for spray, roller or brush-application over EIFS with minimum change in finish texture or sheen.
- J. **TINTED PRIMER by Master Builders Solutions (Optional unless Alumina is used):** A 100% acrylic-based primer that helps alleviate shadowing and enhances performance of the Senergy Wall Systems. Color to closely match the selected Senergy Finish Coat color.
- K. **Senergy Finish Coat: (Required, Select One or More Finishes and Textures)**
 1. SENERFLEX Finish: 100% acrylic polymer finishes with advanced technology to improve long-term performance and dirt pick-up resistance; air cured, compatible with base coat; Senergy finish color [] as selected; finish texture:
 - a. CLASSIC: Has a medium "worm-holed" appearance which is achieved by the random aggregate sizes in the Finish. The "worm-holed" look can be circular, random, vertical or horizontal.
 - b. FINE: utilizes uniformly sized aggregates for a uniform, fine texture.
 - c. TEXTURE: can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel
 - d. SAHARA: Provides a uniform, "pebble" appearance.
 2. SENERFLEX TERSUS Finish: Modified acrylic-based finish with water repellent properties, compatible with base coat; Senergy Finish color [] as selected; finish texture:
 - a. F1.0: A 1.0 mm uniform aggregate creating a fine texture.
 - b. M1.5: A 1.5 mm uniform aggregate creating a medium sand texture.
 - c. T0.5: can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel
 - e. R1.5: Has a medium "worm-holed" appearance which is achieved by the random aggregate sizes in the Finish. The "worm-holed" look can be circular, random, vertical or horizontal.
 3. Specialty Finishes: 100% acrylic polymer finishes that can be hand-troweled to simulate stone or create a time-honored, mottled tone-on-tone look that achieves a soft and weathered patina over time.
 - a. ENCAUSTO VERONA: Utilizes uniformly sized aggregate to achieve a free-formed, flat texture. It can be used to achieve a mottled look and unlimited tone on tone designs by combining multiple colors.
 - b. ALUMINA: Is a factory-mixed, reflective stone finish consisting of colored aggregate and large black mica flakes in a 100% acrylic transparent binder that provides a classic granite or marble-like textured finished appearance.
 4. CHROMA Finish: 100% acrylic polymer-based finish with integrated high performance colorants for superior fade resistance, compatible with base coat; Senergy Finish color [] as selected; finish texture:
 - a. F1.0: Utilizes uniformly sized aggregates for a uniformly fine texture.
 - b. M1.5: Provides a uniform "pebble" appearance.
 - c. R1.5: Has a medium "worm-holed" appearance which is achieved by the random aggregate sizes in the Finish. The "worm-holed" look can be circular, random, vertical or horizontal
- L. **ANTICOGLAZE by Master Builders Solutions Glaze/Stain (Optional):** 100% acrylic antiquing stain product used to impart an 'old world' mottled look to textured finishes.

2.03 ACCESSORIES

- A. Window/Door Drip Edge: Rigid polyvinyl chloride (PVC), UV resistant for exterior use, with a drip edge, as furnished by Plastic Components, Inc. or equal. Accessories shall conform to ASTM D1784-97, C1063-99 and D4216-99.

PART 3 EXECUTION

3.01 EXAMINATION

A. Site Conditions:

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

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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; ASTM C1177 type sheathings, including, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing, DensElement (sheathing only), gypsum sheathing (ASTM C79/C1396); Huber Zip System sheathing; Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB. Consult the Master Builders Solutions - Wall Systems Technical Services Department for all other applications.
 - b. Wall sheathing must be securely fastened per applicable building code and sheathing manufacturer's requirements.
 - c. Examine surfaces to receive SENTURION Wall System and verify that substrate and adjacent materials are 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).
 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 *Senergy Moisture Protection Guidelines for Senerflex Wall Systems Bulletin* for further information.
 - 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 the joints between the units must be fully sealed.
 3. Roof:
 - a. 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:
 - a. Kick-out flashing must be installed leak-proof and angled (min 100°) to allow for proper drainage and water diversion.
- 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 SENTURION Wall System.
- B. Protect finished work at end of each day to prevent water penetration.
- C. Substrate preparation: Prepare substrates in accordance with Senergy instructions.

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.

A. 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. 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.
3. ALPHA GENIE 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

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additional increment. Clean, potable water may be added to adjust workability.

4. 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.
- B. COLOR COAT:** Mix the factory-prepared material with a clean, rust-free paddle and drill until thoroughly blended. A small amount of clean, potable water may be added to adjust workability. Do not overwater.
- C. TINTED PRIMER:** Mix the factory-prepared material with a clean, rust-free paddle and drill until thoroughly blended. A small amount of clean, potable water may be added to adjust workability. Do not overwater.
- D. Senergy Finishes - SENERFLEX, SENERFLEX TERSUS, CHROMA, and ENCAUSTO VERONA Finish:** Mix the factory-prepared material with a clean, rust-free paddle and drill until thoroughly blended. A small amount of clean, potable water may be added to adjust workability. Do not overwater.
- E. Specialty Finishes - ALUMINA Finish:** Gently mix the contents of the pail for 1 minute using a low RPM ½" drill equipped with a mixing paddle such as a Demand Twister or a Wind-Lock B-MEW, B-M1 or B-M9.
- F. ANTICOGLAZE:** Mix the contents of the pail with a slow speed drill and paddle mixer until thoroughly blended.

3.04 APPLICATION

A. Accessories:

1. Attach Window/Door Drip Edge level and per manufacturer's instructions.

B. Air/Water-Resistive Barrier:

SENTURION OPTION 1 Wall System: Install in accordance to Dupont™ Tyvek® [\[StuccoWrap®\]](#) [\[DrainWrap™\]](#) [\[CommercialWrap® D\]](#) specifications, details and installation instructions.

-OR-

SENTURION OPTION 2 and 3 Wall System: Install in accordance to the manufacturer's specifications, details and installation instructions

C. Drainage MAT:

1. Apply DRAINAGE MAT horizontally or vertically over secondary moisture barrier. DRAINAGE MAT should be free of wrinkles. Abut all vertical and horizontal edge. Secure DRAINAGE MAT to substrate with sufficient building staples or galvanized nails to remain in place prior to application of insulation board.

D. Insulation Board:

1. Vertical surfaces: Begin at base from firm, permanent, or temporary support.
2. Stagger joints horizontally in a running bond pattern offset a minimum of 6".
3. Pre-cut insulation board to fit openings and projections. Insulation board must be a single piece around corners of openings. Stagger vertical joints and corners. Stagger insulation and sheathing board joints.
4. Install type [\[M\]](#) [\[ME\]](#) [\[S\]](#) [\[S-12\]](#) [\[W\]](#) mechanical fasteners in accordance with *Senturion System Methods of Attachment* technical bulletin, and meet local design criteria.
5. Fasten insulation board through secondary moisture barrier and/or DRAINAGE MAT into screwable sheathing or framing member, as required.
6. Fill gaps between insulation boards greater than 1/16" with slivers of insulation boards.
7. Rasp flush any irregularities of the insulation board greater than 1/16" (1.6 mm).
8. Install expansion joints and other joints as indicated on Drawings. Do not align aesthetic grooves with insulation board joints.

E. Senergy Base Coat/Reinforcing Mesh:

1. Base coat shall be applied so as to achieve reinforcing mesh embedment with no reinforcing mesh color visible.

NOTE TO SPECIFIER: Indicate on drawings the required locations of standard, medium, high or ultra-high impact reinforcing mesh.

F. Senergy CORNER MESH:

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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.
6. After base coat is dry and hard, apply a layer of FLEXGUARD 4, INTERMEDIATE 6 or 12 Reinforcing Mesh over the entire surface of the CORNER MESH in accordance with 3.04 F.

F. Standard Impact or Medium Impact Resistance Reinforcing Mesh: FLEXGUARD 4 INTERMEDIATE 6 and INTERMEDIATE 12

1. Install Senergy Reinforcing Mesh where indicated on drawings.
2. Apply mixed Senergy Base Coat to entire surface of insulation board with a stainless steel trowel to embed the Reinforcing Mesh.
3. Immediately place Senergy Reinforcing Mesh against wet base coat and embed the reinforcing mesh into the base coat by troweling from the center to the edges.
4. Lap reinforcing mesh 2 ½" (64 mm) minimum at edges.
5. Ensure reinforcing mesh is continuous at corners, void of wrinkles and embedded in base coat so that no reinforcing mesh color is visible.
6. If required, apply a second layer of base coat to achieve total nominal base coat/reinforcing mesh thickness of 1/16" (1.6 mm).
7. Allow base coat with embedded reinforcing mesh to dry hard (normally 8 to 10 hours).

G. High Impact or Ultra High Impact Resistance Reinforcing Mesh: INTERMEDIATE 12, STRONG 15 and HI-IMPACT 20

NOTE TO SPECIFIER: Where STRONG 15 or HI-IMPACT 20 is specified, FLEXGUARD 4 or INTERMEDIATE 6 must be specified also.

1. Install Senergy Reinforcing Mesh where indicated on drawings.
2. Apply mixed Senergy Base Coat to entire surface of insulation board with a stainless steel trowel to embed the reinforcing mesh.
3. Immediately place Senergy Reinforcing Mesh against wet base coat and embed the Reinforcing Mesh into the base coat by troweling from the center to the edges.
4. Butt Senergy Reinforcing Mesh at all adjoining edges; do not use to backwrap or bend around corners.
5. Butt Senergy Reinforcing Mesh at adjoining edges of CORNER MESH.
6. Ensure reinforcing mesh is free of wrinkles and embedded in base coat so that no reinforcing mesh color is visible.
7. After base coat with embedded reinforcing mesh is dry and hard (normally 8 to 10 hours), apply a layer of FLEXGUARD 4 or INTERMEDIATE 6 Reinforcing Mesh over the entire surface in accordance with 3.04 F to achieve total nominal base coat/ reinforcing mesh thickness of 3/32" (2.4 mm).

H. COLOR COAT:

1. Apply material to the base coat/reinforcing mesh in sealant joints with a high-quality, latex-type paintbrush. Work material continuously until a uniform appearance is obtained.
2. Allow to dry thoroughly (approximately 24 hours) prior to application of sealant primer and sealant.

I. TINTED PRIMER:

1. Apply Primer to the base coat/reinforcing mesh with a sprayer, ¾" (10 mm) nap roller, or good quality latex paint brush at a rate of approximately 150–250 ft² per gallon (3.6–6.1 m² per liter).
2. Primer shall be dry to the touch before proceeding to the Senergy Finish coat application.

J. Senergy Finish Coat: SENERFLEX, SENERFLEX TERSUS and CHROMA.

1. Apply Senergy Finish directly to the base coat with a clean, stainless steel trowel.
2. Apply and level Senergy Finish during the same operation to minimum obtainable thickness consistent with uniform coverage.
3. Maintain a wet edge on Senergy Finish by applying and texturing continually over the wall surface.

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4. Work Senergy finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area.
5. Float Senergy Finish to achieve final texture.

K. Alumina Finish:

1. Apply TINTED PRIMER by Master Builders Solutions to substrate in accordance with current product bulletin. Primer shall be of corresponding color for selected ALUMINA Finish color. Allow Primer to dry to the touch before proceeding Finish application.
2. Apply a tight coat of finish with a clean, stainless steel trowel.
3. Maintain a wet edge on finish by applying and leveling continually over the wall surface.
4. Work finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area. Allow first coat to set until surface is completely dry prior to applying a second coat of finish
5. Use a stainless-steel trowel and apply the second coat of finish. Achieve final texture using circular motions
6. Total thickness of finish may be between 1/16" (1.6 mm) and 1/8" (3.2 mm).

- L. ANTICOGLAZE Glaze/Stain:** Apply in accordance with recommendations contained in current product literature.

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 base coat 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