



## **Senerflex Classic PB Wall System – Section 07 24 13**

*Polymer-Based Exterior Insulation and Finish System providing a primary barrier moisture control*

### **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 SENERFLEX CLASSIC PB 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; gypsum sheathing (ASTM C79/C1396); Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB.
2. Painted and otherwise coated surfaces of brick, unit masonry, stucco and concrete shall be inspected and prepared as approved by Master Builders Solutions before application. Other substrates shall be approved by the system’s manufacturer in writing prior to the application. The applicator shall verify that the proposed substrate is acceptable prior to the Senerflex Classic PB Wall System installation.
3. The substrate systems shall be engineered with regard to structural performance by others.

#### **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.
  - 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:**

1. Provide ultra-high impact resistance to a minimum height of 6'- 0" (1.8m) above finished grade at all

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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.

### E. Color Selection:

1. 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. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, floor lines of wood frame construction, where substrates change, terminations at dissimilar materials 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 Senerflex Classic PB (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 (back-wrapped a min. of 2", properly sealed, flashed) at all penetrations, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.

### G. 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. 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. 15 cm in 30.5 cm (6" in 12")]. Increase slope for northern climates to prevent accumulation of ice/snow on the surface.

### H. 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. Provide site grading such that Senerflex Classic PB terminates a minimum of 8" (203mm) above finished grade or as required by code.
3. Install copings and sealant immediately after installation of the Senerflex Classic PB 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](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 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. Senerflex Classic PB Wall System: Composite wall EIFS consisting of adhesive, rigid insulation, base coat, reinforcing mesh, and 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.
- A. The system type shall be Senerflex Classic PB 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 11 00 Wood framing
- E. Section 06 16 00 Wood 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 29 00 Gypsum board

### 1.03 DEFINITIONS

- A. Exterior Insulation and Finish System: Exterior assembly comprised of rigid insulation, adhesive, 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 to achieve reinforcing mesh embedment with no reinforcing mesh color visible, nominal 1/16" (1.6 mm). Protective finish coats, of various thicknesses, in a variety of textures and colors, are applied over the base coat.

### 1.04 SUBMITTALS

- A. Submit under provisions of Section [\[01 33 00\] \[x\]](#).
- B. Product Data: Provide data on Senerflex Classic PB 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 Senerflex Classic PB illustrating Finish Coat [\[custom\]](#) 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.

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C. Regulatory Requirements: Conform to applicable code requirements for exterior insulation and finish system.

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, insulation board, base coat, reinforcing mesh, primer (if specified), finish coat, and typical sealant/flashing conditions.

E. Testing:

1. Senerflex Classic PB and Component Performance:

TEST	METHOD	CRITERIA	RESULTS
Transverse Wind-load	ASTM E330	Steel stud framing (20 gauge) 24"o.c., 7/16" wood sheathing or ASTM C1396 or C1177 gypsum sheathing, Senergy Adhesive, 3/4" expanded polystyrene insulation board, Senergy Base Coat, FLEXGUARD 4 REINFORCING MESH, Senergy Finish.	Average ultimate loads <sup>1</sup> : - 3318 Pa (- 69 psf) + 4328 Pa (+ 90 psf)
Transverse Wind-load	ASTM E330	Steel stud framing (18 gauge) 24"o.c., 7/16" wood sheathing or ASTM C1396 or C1177 gypsum sheathing, Senergy Adhesive, 3/4" expanded polystyrene insulation board, Senergy Base Coat, FLEXGUARD 4 REINFORCING MESH, Senergy Finish.	Average ultimate loads <sup>1</sup> : - 4328 Pa (- 90 psf) + 4328 Pa (+ 90 psf)
Transverse Wind-load	ASTM E330	Steel stud framing (18 gauge) 16"o.c., ASTM C1396 or C1177 gypsum sheathing, metal lath, Senergy Adhesive, 3/4" expanded polystyrene insulation board, Senergy Base Coat, FLEXGUARD 4 REINFORCING MESH, Senergy Finish.	Average ultimate loads <sup>1</sup> : - 7790 Pa (- 162 psf) + 7790 Pa (+ 162 psf)
Transverse Wind-load	ASTM E330	Wood stud framing (2x4), 24"o.c., 7/16" wood sheathing or ASTM C1396 or C1177 gypsum sheathing, Senergy Adhesive, 3/4" expanded polystyrene insulation board, Senergy Base Coat, FLEXGUARD 4 REINFORCING MESH, Senergy Finish.	Average ultimate loads <sup>1</sup> : - 4328 Pa (- 90 psf) + 4328 Pa (+ 90 psf)
Transverse Wind-load	ASTM E330	Concrete or masonry, designed per applicable code, Senergy Adhesive, 1" expanded polystyrene insulation board, Senergy Base Coat, FLEXGUARD 4 REINFORCING MESH, Senergy Finish.	Average ultimate loads <sup>2</sup> : - 8992 Pa (- 187 psf) + is limited to capacity of the concrete or masonry substrate
Tensile Bond	ASTM C297/E2134	Minimum 103 kPa (15 psi)	Pass
Water Penetration	ASTM E 331	No water penetration after 2 hours @ 300 Pa (6.24 psf)	Pass
Radiant Heat Exposure	NFPA 268	No ignition at 20 minutes	Met test criteria with 13" 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	Met test criteria with 13" thick EPS insulation.

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		within combustible core/component of panel from one story to the next 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.
Freeze-Thaw	ASTM C67, E2485 Method A	No deleterious effects after 60 cycles	Pass
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

<sup>1</sup> No failure in the Senergy materials; failure in framing and/or sheathing connections

<sup>2</sup> No failure in the Senergy materials, test was stopped at this pressure

### 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)
Date County Impact Test	Protocol 201	Large & Small Missile	Passed with various wall assemblies
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

- A. Deliver, store and handle products under provisions of Section [01 65 00] [01 66 00] [ ] .
- B. Deliver Master Builders Solutions materials in original unopened packages with manufacturer's labels intact.
- C. Protect Master Builders Solutions materials during transportation and installation to avoid physical damage.
- D. 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 AURORA STONE, AURORA TC-100 and ALUMINA finish).
- 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 insulation boards flat and protected from direct sunlight and extreme heat.
- G. Store Reinforcing Mesh, SHEATHING FABRIC and WS FLASH flexible flashing in cool, dry place protected from exposure to moisture.

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## 1.01 PROJECT/SITE CONDITIONS

- A. Do not apply Master Builders Solutions material in ambient temperatures below 40°F/4°C (50°F/10°C for AURORA STONE, AURORA TC-100 and 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 AURORA STONE, AURORA TC-100 and ALUMINA Finish) prevail.
- B. Do not apply materials to frozen surfaces.
- C. Maintain ambient temperature at or above 40°F/4°C (50°F/10°C for AURORA STONE, AURORA TC-100 and ALUMINA Finish) during and at least 24 hours after Channeled Adhesive CI Design Wall System installation and until dry.
- D. Protect installed product from precipitation and other sources of moisture for minimum of 24 hours and until dry.

## 1.08 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Senerflex Classic PB 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 Senerflex Classic PB Wall System installations under provisions of Section [\[01 78 00\]](#). Reference *Senergy's EIFS and Coatings Warranty Schedule* technical bulletin for specific information.
- B. Comply with Master Builders Solutions' project review requirements and notification procedures to assure qualification for warranty.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Senerflex Classic PB (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. Contact Master Builders Solutions Technical Service Department for further assistance.)**

- A. **SENERPRIME Sheathing Primer (required for Exposure 1 or exterior grade plywood sheathing, or Exposure 1 OSB when cementitious base coat is used: a black tinted, 100% acrylic-based sheathing primer for wood based sheathing substrates.**
- B. **Adhesives/Base Coats: (Required, Select One or More)**
  1. **SENERQUICK ADHESIVE: Water based; non-cementitious, translucent white adhesive ready to use directly from the pail. Can be used as an adhesive for wood based substrates without the use of SENERPRIME.**
  2. **ALPHA Base Coat: A 100% acrylic based adhesive and base coat, field-mixed with Type I or Type II Portland cement. It has a creamy texture that is easily spread.**
  3. **ALPHA DRY Base Coat: A dry-mix polymer adhesive and base coat containing Portland cement, and requiring only water for mixing.**
  4. **XTRA-STOP Base Coat: A 100% acrylic-based, water-resistant adhesive and base coat, field-mixed with Type I or Type II Portland cement.**
  5. **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 used with SENERQUICK or ALPHA DRY Base Coats.**

- C. **Portland cement: Conform to ASTM C150, Type I, II, or I/II, grey or white; fresh and free of lumps.**
- D. **Water: Clean and potable without foreign matter.**
- E. **Insulation Board: (Required, Select One)**
  1. **Expanded polystyrene; ASTM C578, Type I; Flame spread less than 25, smoke developed less than 450 per ASTM E84, UL 723.**
    - a. **Minimum density 15.22 kg/m<sup>3</sup> (0.95 lb./ft<sup>3</sup>; K=6.09 per mm (0.24 per inch).**
    - b. **Minimum thickness as indicated on drawings but not less than 19 mm (3/4").**

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- c. Air-dried (aged) six weeks, or equivalent, prior to installation or per ASTM E2430.
- d. Edges: square within 0.8 mm per meter (1/32" per foot).
- e. Thickness: tolerance of plus or minus 1.6 mm (1/16").
- f. Size: 0.6 m x 1.22 m (2' x 4').
- g. Length and width: tolerance of plus or minus 1.6 mm (1/16").
2. Polyisocyanurate insulation board: Quik-R by Dow; or Stucco-Shield II by Atlas Roofing Corporation. (Mechanically fastened only)
  - a. Nominal density 32 kg/m<sup>3</sup> (2 lbs. /ft<sup>3</sup>).
  - b. Minimum thickness as indicated on drawings 25mm (1").
  - c. Size: 1.22 m x 2.44 m, 1.22 m x 2.74 m (4' x 8', 4' x 9'), or other size as provided by insulation board manufacturer.
  - d. Edges: Square within 4 mm (3/16") (1.22 m x 2.44 m / 4' x 8').
  - e. Thickness: tolerance of less than 1.6 mm (1/16") (25 mm / 1" thick).
  - f. Length: Tolerance of plus or minus 6 mm (1/4") (1.22 m x 2.44 m / 4' x 8').
  - g. Width: Tolerance of plus or minus 1.6 mm (1/16") (1.22 m x 2.44 m / 4' x 8').
- F. **Senergy Reinforcing Mesh:** balanced, open-weave glass, fiber reinforcing mesh, twisted multi-end strands treated for compatibility with Senergy Base Coats. **(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.
  5. HI-IMPACT 20: Heavy weight, 20 oz. used only in combination with FLEXGUARD 4 or INTERMEDIATE 6.
  6. CORNER MESH: Intermediate weight, 9 oz. pre-marked for easy bending, for reinforcing at exterior corners.
- G. **COLOR COAT by Master Builders Solutions Coating (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.
- H. **TINTED PRIMER by Master Builders Solutions Primer (Optional):** 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.
- I. **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. COARSE: Has a heavy "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.
    - c. FINE: Utilizes uniformly-sized aggregates for a uniform, fine texture.
    - d. TEXTURE: Can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel
    - e. 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.
  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. METALLIC: Has a pearlescent appearance. It utilizes uniformly-sized aggregates for a uniform fine texture.



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- c. [AURORA TC-100](#): Provides a stone-like appearance, either rough or smooth depending upon application.
  - d. [AURORA STONE](#): Provides a rough, stone-like appearance.
  - e. [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
- J. [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. [Fastener System](#): Type appropriate for application and substrate, as recommended by Senergy. The use of both adhesive and mechanical attachment is not required by Senergy. (Optional Select One)
- 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; 16 mm (5/8") minimum penetration into framing.
    - c. [Heavy gauge steel framing \(20 to 12 gauge maximum\)](#): Type S fastener and plate system; 16 mm (5/8") minimum penetration into framing.
    - d. [Masonry](#): Type ME expansion fastener and plate system; 25 mm (1") minimum penetration into masonry.
    - e. [Wood Framing](#): [Type W fastener and plate system; 16 mm (5/8") minimum penetration into framing.] or [Galvanized common nails with Wind-lock ULP-302 plates; 25.4 mm (1") minimum penetration into framing.]
  - 2. [QR polyisocyanurate insulation board fasteners](#):
    - a. [Temporary Fasteners](#): Galvanized nails or building staples.
    - b. [Unit Masonry or Concrete](#): Type ME expansion anchor or type M 4.8 mm (3/16") diameter bugle head masonry anchor with 44 mm (1.75") diameter ULP-402 plate by Wind-lock Corp.; 25 mm (1") minimum anchor penetration into masonry.
    - c. [Light Gauge Steel Framing/Furring \(20 Gauge\)](#): Type S bugle head screws 44 mm (1.75") diameter ULP-402 plate by Wind-Lock Corp.; 25 mm (1") minimum anchor penetration into framing.
    - d. [Heavy Gauge Steel Framing \(20 to 12 Gauge maximum\)](#): Type S-12 bugle head screws 44 mm (1.75") diameter ULP-402 plate by Wind-lock Corp.; 25 mm (1") minimum anchor penetration into framing.
    - e. [Wood Framing](#): [Type W bugle head screws; screws shall penetrate framing 16 mm (5/8") minimum] or [galvanized common nails with ULP-402 plate by Wind-lock Corp.; galvanized common nails shall penetrate framing 25 mm (1") minimum.]

## PART 3 EXECUTION

### 3.01 EXAMINATION

#### A. Site Conditions:

- 1. Verify project site conditions under provisions of Section [\[01 00 00\] \[x\]](#).

#### 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™



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- sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing, DensElement sheathing; gypsum sheathing (ASTM C79/C1396); Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB. Consult the Master Builders Solutions' Technical Services Department for all other applications.
- b. Wall sheathings must be securely fastened per applicable building code and sheathing manufacturer's requirements.
  - c. Examine surfaces to receive Senerflex Classic PB 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 1/4" in 10' (6 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. As an option, openings may be flashed with a minimum 9" (229 mm) strip of Secondary Moisture Barrier prior to window/door, HVAC, etc. installation to increase the level of moisture protection. Refer to WS FLASH product bulletin and *Senergy Moisture Protection Guidelines* for additional information and complete installation instructions.
    - 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:
    - 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 Senerflex Classic PB.
- 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 with soap and water immediately after use.

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

#### A. Adhesive/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 additional increment. Clean, potable water may be added to adjust workability.
4. SENERQUICK Adhesive: Mix the contents of the pail with a low speed drill and paddle mixer until thoroughly blended.
5. ALPHA DRY Base Coat: Mix and prepare each bag in a 5-gallon (19-liter) pail. Fill the container

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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 exceed 10 oz.
- E. Specialty Finishes - AURORA TC-100, AURORA STONE, and ALUMINA Finish:** Gently mix the contents of the pail for 1 minute using a low RPM 1/2 inch drill equipped with a mixing paddle such as a Demand Twister or a Windlock 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

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

#### **A. Adhesive Attachment of Insulation Board (EPS Only):**

1. Vertical surfaces: Begin at base from firm, permanent, or temporary support.
2. Apply horizontally in a running bond pattern.
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. **(Select a,b or c)**
  - a. Notched trowel method for ALPHA, ALPHA DRY AND XTRA STOP adhesive base coat: Apply mixed Senergy base coat to entire surface of insulation board using a stainless steel trowel with 13 mm x 13 mm (1/2" x 1/2") notches spaced 13 mm (1/2") apart, or 10 mm x 10 mm (3/8" x 3/8") notches spaced 10 mm (3/8") apart.
  - b. Notched trowel method for SENERQUICK: Apply mixed SENERQUICK Adhesive to entire surface of insulation board using a stainless steel trowel with 5 mm x 5 mm (3/16" x 3/16") notches spaced 5 mm (3/16") apart.]
- NOTE: Ribbon & dab method is not recommended on gypsum or wood-based sheathing substrates.**
- c. Ribbon and Dab Method Non-Wood Based Acceptable Substrates: Apply a ribbon of Senergy Base Coat approximately 50 mm (2") wide by 10 mm (3/8") thick to entire perimeter of each board with a stainless steel trowel. Apply dabs of 10 mm (3/8") thickness and 100 mm (4") in diameter, approximately 200 mm (8") on center to interior area of board.
4. Immediately set board into place and apply pressure over entire surface of board to ensure positive uniform contact and high initial grab. Do not allow base coat to dry prior to installing.
5. Abut all joints tightly and ensure overall flush level surface.
6. Check adhesion periodically by removing a board prior to set. Properly installed insulation board will be difficult to remove, and adhesive/base coat will be adhered to both the substrate and the insulation board.
7. Fill gaps greater than 1/16" between insulation boards with slivers of insulation board.
8. Allow application of insulation board to dry (normally 8 to 10 hours) prior to application of Base Coat/Reinforcing Mesh.
9. Rasp flush any irregularities of the insulation board greater than 1/16" (1.6 mm).
10. Install expansion joints and other joints as indicated on drawings. Do not align aesthetic grooves with insulation board joints.

#### **B. Mechanical Fastening of Insulation Board:**

1. Vertical surfaces: begin at base from firm, permanent, or temporary support.

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2. Apply horizontally in a running bond pattern.
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.

**NOTE TO SPECIFIER: Select appropriate fastener for insulation board type, framing and sheathing material**

4. EPS Insulation Board: 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; 16 mm (5/8") minimum penetration into framing.
  - c. Heavy gauge steel framing (20 to 12 gauge maximum): Type S fastener and plate system; 16 mm (5/8") minimum penetration into framing.
  - d. Masonry: Type ME expansion fastener and plate system; 25 mm (1") minimum penetration into masonry.
  - e. Wood Framing: [Type W fastener and plate system; 16 mm (5/8") minimum penetration into framing.] or [Galvanized common nails with Wind-lock ULP-302 plates; 25.4 mm (1") minimum penetration into framing.]
5. Polyisocyanurate Insulation Board Fasteners: ULP-402 Plate by Wind-Lock.
  - a. Temporary Fasteners: Galvanized nails or building staples.
  - b. Unit Masonry or Concrete: Type ME expansion anchor or type M 4.8 mm (3/16") diameter bugle head masonry anchor with 44 mm (1.75") diameter ULP-402 plate by Wind-lock Corp.; 25 mm (1") minimum anchor penetration into masonry.
  - c. Light Gauge Steel Framing/Furring (20 Gauge): Type S bugle head screws 44 mm (1.75") diameter ULP-402 plate by Wind-Lock Corp.; 25 mm (1") minimum anchor penetration into framing.
  - d. Heavy Gauge Steel Framing (20 to 12 Gauge maximum): Type S-12 bugle head screws 44 mm (1.75") diameter ULP-402 plate by Wind-lock Corp.; 25 mm (1") minimum anchor penetration into framing.
  - e. Wood Framing: [Type W bugle head screws; screws shall penetrate framing 16 mm (5/8") minimum] or [galvanized common nails with ULP-402 plate by Wind-lock Corp.; galvanized common nails shall penetrate framing 25 mm (1") minimum.]

### **C. Senergy Base Coat/Reinforcing Mesh:**

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

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

### **D. 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.
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 D.

### **E. 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

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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).

### **F. 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 INTERMEDIATE 12, STRONG 15 or HI-IMPACT 20 against wet base coat and embed the reinforcing mesh into the base coat by troweling from the center to the edges.
4. Butt STRONG 15 or HI-IMPACT 20 at all adjoining edges; do not use to backwrap or bend around corners.
5. Butt STRONG 15 or HI-IMPACT 20 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 to achieve total nominal base coat/ reinforcing mesh thickness of 3/32" (2.4 mm).

### **G. 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.

### **H. TINTED PRIMER:**

1. Apply Primer to the base coat/reinforcing mesh with a sprayer, 3/8" (10 mm) nap roller, or good quality latex paint brush at a rate of approximately 150–250 ft<sup>2</sup> per gallon (3.6–6.1m<sup>2</sup> per liter).
2. Primer shall be dry to the touch before proceeding to the Senergy Finish coat application.

### **I. Senergy Finish Coat:** SENERFLEX, SENERFLEX TERSUS and CHROMA.

1. Apply Senergy Finish to the base coat or primed 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.
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.

### **J. Specialty Finish:**

1. AURORA TC-100 Finish:
  - a. Apply TINTED PRIMER by Master Builders Solutions to substrate in accordance with current product bulletin. Primer shall be of corresponding color for selected AURORA TC-100 Finish color. Allow Primer to dry to the touch before proceeding Finish application.
  - b. Apply a tight coat of finish with a clean, stainless steel trowel.
  - c. Maintain a wet edge on finish by applying and leveling continually over the wall surface.
  - d. 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.
  - e. For a smooth appearance, use a stainless-steel trowel and apply the second coat of finish. Achieve final texture using circular motions.
  - f. For a textured appearance, apply the second coat of finish using a spray gun and hopper. Double-back to achieve final texture.
  - g. Total thickness of finish shall be approximately 1/16 (1.6 mm).
2. AURORA STONE Finish:

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- a. Apply TINTED PRIMER by Master Builders Solutions to substrate in accordance with current product bulletin. Primer shall be of corresponding color for selected AURORA STONE Finish color. Allow Primer to dry to the touch before proceeding Finish application.
- b. Apply a coat of Finish using a spray gun and hopper, maintaining a wet edge. Work to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area.
- c. Allow first coat of AURORA STONE Finish to set until surface is completely dry prior to applying a second coat of Finish.
- d. Apply a second coat of Finish using a spray gun and hopper; double back to achieve final texture.
- e. Thickness of Finish may vary between 1/16" (1.6 mm) and 1/8" (3.2 mm), depending upon texture.

**Note: Spraying of AURORA STONE shall be in the same manner and direction and by the same mechanic on a particular elevation or project whenever possible, to maintain a uniform appearance. Maintain consistent air pressure to minimize texture variations. Stator or rotor design pumps are not recommended.**

3. ALUMINA Finish:
  - a. 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.
  - b. Apply a tight coat of finish with a clean, stainless steel trowel.
  - c. Maintain a wet edge on finish by applying and leveling continually over the wall surface.
  - d. 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
  - e. Use a stainless-steel trowel and apply the second coat of finish. Achieve final texture using circular motions
  - f. Total thickness of finish may be between 1/16" (1.6 mm) and 1/8" (3.2 mm).

**K. ANTICOGLAZE:** Apply in accordance with recommendations contained in current product literature.

### 3.05 CLEANING

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

### 3.06 PROTECTION

Protect finished work under provisions of Section [\[01 76 00\] \[x\]](#).

**END OF SECTION**

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### WARRANTY

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