

Senergy Sentry Stucco Ultra System – Section 092400

3-coat impact-resistant cement plaster stucco system incorporating a rain screen design with enhanced water management.

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. BASF Construction Chemicals, LLC - Wall Systems (hereinafter referred to as “BASF Wall Systems”) has prepared guidelines in the form of specifications, typical application details, and product bulletins to facilitate the design process only. BASF Wall Systems 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 BASF Wall Systems or otherwise, or for any changes which the purchasers, specifiers, designers or their appointed representatives may make to BASF Wall Systems published comments.

DESIGNING AND DETAILING A SENERGY SENTRY STUCCO ULTRA 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/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, Fiberock® Aqua-Tough™ Sheathing, e²XP™ sheathing (ASTM C1177), GlasRoc® sheathing (ASTM C1177), Securock™ glass-mat sheathing (ASTM C1177), DensGlass™ exterior sheathing (ASTM C1177), 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, and concrete shall be inspected and prepared as approved by BASF Wall Systems before application. The applicator shall verify that the proposed substrate is acceptable prior to the Senergy Sentry Stucco Ultra System installation.
 - 3. The substrate systems shall be engineered with regard to structural performance by others. Framing spacing for the Senergy Sentry Stucco Ultra System is a maximum 16”o.c.
 - 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 Senergy Sentry Stucco Ultra System, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
 - a. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, at the base of the wall and anywhere else required by local code or design at the time of installation.
 - b. The SENERSHIELD-R 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 *Secondary Moisture Protection Barrier Guidelines for Senergy Stucco Wall Systems* bulletin.
 - d. Air leakage prevention: if an air barrier is required, 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.

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D. Color Selection

1. The use of dark colors over EPS insulation trim shapes 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 trim shapes that incorporate expanded polystyrene (EPS). EPS has a sustained service temperature limitation of approximately 71°C (160°F).

E. Grade Condition

1. Senergy Sentry Stucco Ultra 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).

F. Trim, Projecting Architectural Features

NOTE TO SPECIFIER: Installation of the Senergy Sentry Stucco Ultra System with trim shapes that incorporate expanded polystyrene (EPS) outside the slope guidelines referenced in this specification may still qualify for a standard warranty; however, increased maintenance and premature deterioration of the trim shapes that incorporate expanded polystyrene (EPS) shall be expected, and any deleterious effects caused by the lack of slope will not be the responsibility of BASF Wall Systems. 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 trim shapes that incorporate expanded polystyrene (EPS). 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 30.5 cm (12") [e.g. 15 cm in 30.5cm (6" in 12")]. Increase slope for northern climates to prevent accumulation of ice/snow on the surface.
2. Senergy Wall Systems were designed and tested to be applied to vertical surfaces. As the slope of the wall system application decreases, the chance for premature deterioration of any wall system increases.
3. Low sloping conditions are subject to more extreme heat. Low sloped areas are known to produce an increase in wall surface temperature which can lead to accelerated weathering of the low sloped surface.

G. System Joints

1. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, floor lines of wood frame construction, where substrates change and where structural movement is anticipated. Detail specific locations in construction drawings.
2. Control joints are recommended at a minimum of every 13 m² (144 ft²) of wall surface area and where specified by the design professional. The maximum uncontrolled length or width is 5.5 lineal meters (18 lineal feet) and a maximum uncontrolled length to width ratio of 2 1/2: 1. Detail specific locations in construction drawings.
3. Sealant joints are required at all penetrations through the Senergy Sentry Stucco Ultra System (windows, doors, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.) Refer to Senergy Sentry Stucco Ultra System typical details.
4. 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

H. Decks

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

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 protection of rough openings in accordance with Senergy's *Secondary Moisture Protection Barrier Guidelines for Senergy Stucco Wall Systems* bulletin before installing windows, doors, and other penetrations through the wall.
4. Install copings and sealant immediately after installation of the Senergy Sentry Stucco Ultra System and when Senergy coatings are completely dry.

TECHNICAL INFORMATION

Consult BASF Wall Systems' Technical Services Department for specific recommendations concerning all other applications. Consult the Senergy website, www.senergy.basf.com, for additional information about products and systems and for updated literature.

PART 1 - GENERAL

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. System Description: Composite wall system consisting of STUCCOBASE™/ STUCCOBASE™ PREMIX, SENERSHIELD-R, DRAINAGE MAT DF, PERMALATH 1000® or 3.4lb/yd² expanded metal lath, Senergy BASE COAT 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 Sentry Stucco Ultra System as manufactured by BASF Construction Chemicals, LLC - Wall Systems, Jacksonville, Florida, herein after referred to as "BASF Wall Systems".

NOTE TO SPECIFIER: Items in brackets indicate a system option or choice of options. Throughout the specification, delete those which are not required or utilized. Contact BASF Wall Systems Technical Service Department for further assistance.

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 D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
- E. ASTM D1784 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Compounds
- F. ICC-ES AC11 Cementitious Exterior Wall Coatings
- G. ICC-ES AC275 Glass Fiber Lath
- H. ESR-1064 ICC Evaluation Service, Inc., ES Report™ (STUCCOBASE™/ STUCCOBASE™ PREMIX)
- I. ESR-2429 ICC Evaluation Service, Inc., ES Report™ (PERMALATH® 1000)
- J. ESR-1878 ICC Evaluation Service, Inc., ES Report™ (SENERSHIELD-R)

1.04 SUBMITTALS

- A. Submit under provisions of Section [01 33 00]
- B. Product Data: Provide data on Senergy Sentry Stucco Ultra 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 Senergy Sentry Stucco Ultra 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 typical details, system design guide and related product literature which indicate preparation required, storage, installation techniques, jointing requirements and finishing techniques.

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1.05 QUALITY ASSURANCE

- A. Manufacturer: More than 10 years in the cement plaster stucco industry, with more than 1000 completed cement plaster stucco projects.
- B. Applicator: Approved by BASF Wall Systems in performing work of this section.
- C. Regulatory Requirements: Conform to applicable code requirements for cement plaster stucco.
- 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, DRAINAGE MAT DF PERMALATH 1000, plaster trim accessories, STUCCOBASE™, Senergy BASE COAT, STUCCOPRIME (if specified), FINISH COAT, and typical sealant/flashing conditions.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products under provisions of Section [01 65 00] [01 66 00] [].
- B. Deliver Senergy Sentry Stucco Ultra System materials in original unopened packages with manufacturer's labels intact.
- C. Protect Senergy Sentry Stucco Ultra System materials during transportation and installation to avoid physical damage.
- D. Store Senergy Sentry Stucco Ultra System materials in cool, dry place protected from exposure to moisture and freezing.
- E. Store at no less than 4°C/40°F (10°C/50°F for AURORA STONE, TC-100, ALUMINA and BOREALIS Finish).
- F. Store insulation boards flat and protected from direct sunlight and extreme heat.]

1.07 PROJECT/SITE CONDITIONS

- A. Do not apply Senergy Sentry Stucco Ultra System in ambient temperatures below 4°C/40°F (10°C/50°F for AURORA STONE, TC-100, ALUMINA and BOREALIS Finish).
- B. Provide properly vented, supplementary heat during installation and drying period when temperatures less than 4°C/40°F (10°C/50°F for AURORA STONE, TC-100, ALUMINA and BOREALIS Finish) prevail.
- C. Do not apply Senergy Sentry Stucco Ultra System materials to frozen surfaces.
- D. Maintain ambient temperature at or above 4°C/40°F (10°C/50°F for AURORA STONE, TC-100, ALUMINA and BOREALIS Finish) during and at least 24 hours after Senergy Sentry Stucco Ultra System installation and until dry.

1.08 SEQUENCING AND SCHEDULING

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

NOTE TO SPECIFIER: Warranty term varies with system component's configuration. Consult *Senergy Stucco Wall Systems Warranty Schedule* to determine term.

- A. Provide BASF Wall Systems [(8) eight-] [(10) ten-] [(12) twelve-] [(15) fifteen-] year limited materials and drainage warranty for Senergy Sentry Stucco Ultra System installations under provisions of Section [01 70 00].
- B. Comply with BASF Wall Systems notification procedures to assure qualification for warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

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

2.02 MATERIALS

NOTE TO SPECIFIER: Keep only the products in this section which will be incorporated in the Senergy Stucco Ultra System. Delete those not to be utilized.

- A. Water Resistive Barrier:
 - 1. SENERSHIELD-R: ready-mixed, flexible Air/Water Resistive Barrier.
 - [a. FLASHING PRIMER: water-based primer for use prior to application of SENERFLASH on all acceptable surfaces.]
 - [b. SENERFLASH: 30-mil thick, self-sealing, self-healing composite membrane of polyester fabric and rubberized asphalt. Compatible with SENERSHIELD-R Air/Water Resistive Barrier.]
 - c. 4" SHEATHING FABRIC: 100mm (4") spunbonded non-woven reinforced polyester web for use with SENERSHIELD-R.

- B. DRAINAGE MAT DF: 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. PERMALATH® 1000 or Expanded Metal Lath: (See also, Senergy *Lath & Trim Accessories* bulletin):
NOTE TO SPECIFIER: Delete those products not utilized.
 [1. PermaLath® 1000: 3/4"–7/8" thick stucco PERMALATH® 1000: Open weave, three dimensional, self furred, nominal 1/4" thick glass fiber reinforcing lath designed for use with STUCCOBASE™ at a minimum thickness of 3/4" in "scratch and brown" applications.]
 [2. Expanded Metal Lath: (See also, Senergy *Accepted Stucco Wall Systems Lath and Trim Accessories* bulletin) The lath shall comply with ASTM C847. Furring and self-furring requirements shall be as set forth by ASTM C1063. Minimum weight is 1.85 kg/m² (3.4 lb/yd²).]
- [D. Plaster Sand: 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	Min.	Max.
No. 4	-	0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

E. Water: clean and potable without foreign matter.

F. STUCCOBASE™

NOTE TO SPECIFIER: Select one of the following STUCCOBASE™ products. Delete that which is not utilized.

[1. STUCCOBASE™: Factory-blended stucco mixture of Portland cement, reinforcing fibers, and proprietary ingredients; supplied by BASF Wall Systems for scratch and brown coats.

-OR-

[1. STUCCOBASE™ PREMIX: Factory-blended stucco mixture of Portland cement, reinforcing fibers, sand, and proprietary ingredients; supplied by BASF Wall Systems for scratch and brown coats.]

G. Senergy SKIM COAT / EPS insulation adhesive

[1. ALPHA BASE COAT: 100% acrylic base coat, field-mixed with Portland cement; manufactured by BASF Wall Systems.]

[2. ALPHA DRY BASE COAT: Dry-mix base coat containing Portland cement; manufactured by BASF Wall Systems.]

[3. X-TRA STOP BASE COAT: 100% acrylic adhesive & base coat that is field mixed with Type I or Type II Portland cement.]

[H. Senergy REINFORCING MESH: Balanced, open weave glass fiber reinforcing mesh; twisted multi-end strands treated for compatibility with Senergy System components.

[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.]

[I. Senergy STUCCOPRIME: 100% acrylic-based primer; color [] to closely match the selected Senergy FINISH COAT color; manufactured by BASF Wall Systems.]

NOTE TO SPECIFIER: Senergy TINTED PRIMER is required for TC-100, AURORA STONE, BOREALIS and ALUMINA.

J. [SENERFLEX] Finish, 100% acrylic polymer based finish; air cured, compatible with Base Coat; Finish color; color [] as selected; Finish texture [CLASSIC] [TEXTURE] [SAHARA] [BELGIAN LACE] [FINE] [METALLIC] [BOREALIS] [TC-100] [AURORA STONE] [ALUMINA FINISH] as scheduled; as manufactured by BASF Wall Systems.]

- OR -

[SENERLASTIC] Finish, 100% acrylic polymer based, elastomeric finish; air cured, compatible with Base Coat, color [] selected; Finish texture [CLASSIC] [TEXTURE] [SAHARA] [BELGIAN LACE] [FINE] as scheduled; as manufactured by BASF Wall Systems.]

[K. BASF Wall System's ANTICOGLAZE™: 100% acrylic-based stain or glaze which produces beautiful aesthetics with varied degrees of mottling, coloration and glaze, based upon the combination of application technique, the color of the ANTICOGLAZE™ itself and the color of the finish it is applied to; distributor tinted color []].

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2.03 ACCESSORIES

- A. 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.
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, Fiberock® Aqua-Tough™ Sheathing, e²XP™ sheathing (ASTM C1177), GlasRoc® sheathing (ASTM C1177), Securock™ glass-mat sheathing (ASTM C1177), DensGlass™ exterior sheathing (ASTM C1177), gypsum sheathing (ASTM 79/C1396), Exposure I or exterior plywood (Grade C/D or better), or Exposure I OSB.
 - b. Sheathings must be securely fastened per applicable building code requirements and manufacturers 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').
 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 Systems* 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 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.
- 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 and/or mixer that is clean and free of foreign substances. Do not use a container and/or mixer 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 will be incorporated in the Senergy Stucco Ultra System. Delete those not to be utilized.

- A. Air/Water Resistive Barrier
1. SENERSHIELD-R
Mix SENERSHIELD-R with a clean, rust-free paddle and drill until thoroughly blended. Do not add water.
- [B. Stucco Base Coat: STUCCOBASE™
1. Use mixer which is clean and free of foreign substances.
 2. Add 18.9–22.7 liters (5–6 gallons) of clean potable water to mixer per one bag of STUCCOBASE™.

3. Add one bag of STUCCOBASE™.
 4. Add one half 45.4–54.4 kg (100–120 lbs) of the required plaster sand (ASTM C144 or ASTM C897).
 5. Mix for 3–4 minutes at normal mixing speed while adding the remainder 45.4–54.4 kg (100–120 lbs) of the plaster sand. Allow material to set for 2–4 minutes, then remix adding water to achieve desired consistency.
- Note: Continuous mixing may cause excessive air entrainment.**
- C. Stucco Base Coat: STUCCOBASE™ PREMIX
1. Use mixer which is clean and free of foreign substances.
 2. Add 7.6–9.5 liters (2–2.5 gallons) of clean potable water to mixer.
 3. Slowly add one bag of STUCCOBASE™ PREMIX.
 4. 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.]**
- D. Senergy skim coat / EPS insulation adhesive
1. [ALPHA] [X-TRA STOP] BASE COAT
 - a. Mix [ALPHA] [X-TRA STOP] BASE COAT with a paddle and drill until thoroughly blended, before adding Portland cement.
 - b. Mix one part (by weight) Portland cement with one part base coat. Add Portland cement in small increments, thoroughly mixing to a homogeneous consistency after each additional increment.
 - c. Clean, potable water may be added to adjust workability.
 2. [ALPHA DRY] BASE COAT
 - a. Mix and prepare each bag in a 19-liter (5-gallon) pail.
 - b. Fill the container with approximately 5.6-liters (1.5-gallons) of clean, potable water.
 - c. Add ALPHA DRY in small increments, mixing after each additional increment.
 - d. Mix ALPHA DRY and water with a mixer to a homogeneous consistency.
 - e. Additional ALPHA DRY or water may be added to adjust workability.]
- E. Senergy FINISH COAT [SENERFLEX] [SENERLASTIC] and [STUCCOPRIME] [ANTICOGLAZE™]
1. Thoroughly mix the factory-prepared material with a clean paddle and drill until thoroughly blended.
 2. A small amount of clean, potable water may be added to adjust workability.
 3. Additives are not permitted.
 4. Close container when not in use.
 5. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.
- F. Senergy [BOREALIS] [TC-100] [AURORA STONE] [ALUMINA] SPECIALTY FINISH COATS
1. 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.
 2. Additives are not permitted.
 3. Close container when not in use.
 4. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

3.04 APPLICATION

General: Apply Senergy Sentry Stucco Ultra System materials in accordance with all Sentry Stucco Ultra System typical details, system specification and related product literature.

NOTE TO SPECIFIER: Keep only the products in this section which will be incorporated in the Sentry Stucco Ultra System. Delete those not to be utilized.

A. SENERSHIELD-R

1. All sheathing joints and windows/openings must be protected and the SENERSHIELD-R Air/Water Resistive barrier applied in accordance with Senergy's *Secondary Moisture Protection Barrier Guidelines for Senergy Stucco Wall Systems* bulletin. Openings must be flashed prior to window/door, HVAC, etc. installation.
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 6.4 mm in 3 m (1/4" in 10').
3. Unsatisfactory conditions shall be corrected before application of the SENERSHIELD-R.
4. Wrap openings with sheathing fabric by applying mixed SENERSHIELD-R to all surfaces and immediately embedding sheathing fabric. Once dry, apply a second coat to ensure a complete, void-free membrane. Apply fabric in accordance with *Secondary Moisture Protection Barrier Guidelines for Senergy Stucco Wall Systems* bulletin.
5. Spot all fasteners and pre-coat sheathing joints, terminations, inside and outside corners with mixed SENERSHIELD-R using a 101 mm (4") wide by 20 mm (3/4") nap roller, brush or spray.
 - a. Immediately place and center sheathing fabric over wet SENERSHIELD-R at all sheathing joints, terminations, inside and outside corners, as well as knot holes and check cracks that may exist in plywood or OSB. Ensure fabric extends evenly on both sides of the sheathing joint.

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- b. Lap sheathing fabric 63.5 mm (2 1/2") minimum at intersections.
- c. Allow to dry to the touch before applying SENERSHIELD-R to entire wall surface.
6. a. Apply SENERSHIELD-R to plywood, OSB substrate(s) or CMU with a 20 mm (3/4") nap roller to a uniform consistent thickness of a nominal 10 wet mils. Prior to application of a second coat, visually inspect to assure sheathing surface is blister free and coating is free of voids and pinholes. Repair if needed and then apply a second coat after the initial coating is sufficiently dry.
Note: Two (2) coats of SENERSHIELD-R are required on plywood, OSB and CMU.
 - b. Apply SENERSHIELD-R to other acceptable substrate(s) with a 20 mm (3/4") nap roller to a uniform consistent thickness of nominal 10 wet mils that is free of voids and pinholes.
7. Installed materials should be completely dry and checked before continuing system application.
8. Coordinate work with other trades to assure proper sequencing, detailing and installation of materials.
- B. Drainage Mat DF
 1. Apply DRAINAGE MAT DF horizontally over ACROSTOP R. DRAINAGE MAT DF should be free of wrinkles, creases and tears.
 2. Secure DRAINAGE MAT DF to substrate with sufficient building staples or galvanized nails to remain in place prior to application of exterior cladding system.
- C. Trim junction
 1. When two pieces of trim abut:
 - a. Set intersection of trim in a minimum 100 mm (4") bed of acceptable trim sealant.
 - b. Allow 3–5 mm (1/8"–3/16") gap between the abutting trim pieces. Do not overlap trim.
 - c. Attach the trim in accordance with manufacturer's specifications. True expansion joints must be fastened to the structural substrate.
 2. When two or more pieces of trim intersect:
 - a. The vertical trim piece shall be continuous with all horizontal pieces.
 - b. Miter all corners at intersections of trim.
 - c. Set intersection of trim in a minimum 100 mm (4") bed of acceptable trim sealant.
 - d. Allow 3–5 mm (1/8"– 3/16") gap between the intersecting trim pieces. Do not overlap the trim
 - e. Attach the trim in accordance with manufacturers' specifications and ASTM C1063.
- D. Lath
[PERMALATH® 1000
 1. Apply PERMALATH® 1000 over substrate with minimum 3" 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, as recommended by BASF Wall Systems.
 2. PERMALATH® 1000 Fasteners: Lath Plate Mechanical Fastening Systems by Wind-Lock Corp.
 - a. Masonry: masonry type [M] expansion fastener with lath plates 25 mm (1") minimum penetration into masonry. Fastener spacing 6"o.c. vertically and 16"o.c. horizontally.
 - b. Cold rolled steel framing/furring spaced maximum 16"o.c.: minimum No.6, 1 1/4" long, Type S, self drilling, corrosion resistant coated, bugle head screws or 1 1/4" long x 0.10" diameter VersaPIN Gripshank® fasteners by Aerosmith Fastening Systems with 1 1/4" diameter lath plates, 16 mm (5/8") minimum penetration into framing, 6"o.c. vertically and 16"o.c. horizontally.
 - c. Wood framing, spaced maximum 16"o.c.: wood type [W] bugle head screws with lath plates, 19 mm (3/4") minimum penetration into framing or min. 16 gauge wire staples with minimum 3/4" crown and minimum 3/4" penetration into framing placed every 6"o.c. vertically and 16"o.c. horizontally and at lath overlaps between studs.
 3. Apply STUCCOBASE™/STUCCOBASE™ PREMIX within 60 days of PERMALATH® 1000 application.]

[Expanded Metal Lath, 3.4 lb/yd²

 1. The metal lath shall be applied with minimum 13 mm (1/2") side laps and 25 mm (1") end laps.
 2. When end laps occur between supports, lace or wire ties the ends of the sheets with 1.2 mm (0.0475") galvanized annealed steel wire.
 3. Refer to ASTM C1063 for additional information.]
- E. [STUCCOBASE™/STUCCOBASE™ PREMIX Base Coat: System Application (3/4"– 7/8" thickness)
 1. Total thickness of base coats must meet code requirements for fire rated construction.
 2. Nominal plaster base coat thickness:
 - a. First coat "scratch": 3/8"– 1/2"
 - b. Second coat "brown": 3/8"– 1/2"
 3. Apply STUCCOBASE™/STUCCOBASE™ PREMIX mixture to the lath by hand troweling or machine spraying with sufficient force to develop full adhesion between STUCCOBASE™/STUCCOBASE™ PREMIX mixture and the lath.
 4. Apply first coat to completely embed lath. Cross rake slightly 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.

5. Apply second brown coat to provide the required total thickness. Trowel STUCCOBASE™/STUCCOBASE™ PREMIX into trim to seat trim. The lath shall be fully embedded in the stucco 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.
 6. After surface has sufficiently hardened, use sponge or hard rubber float as required to fill voids, holes or imperfections, leaving the surface ready to receive Senergy Finish.
 7. Damp cure for at least 48 hours by lightly and evenly fogging the surface with water a least twice a day. Direct sunlight, hot temperatures, low humidity and wind may make additional fogging necessary.
 8. Allow STUCCOBASE™/STUCCOBASE™ PREMIX to cure a minimum of 6 days prior to application of Senergy BASE COAT skim coat, EPS insulation board shapes and Senergy FINISH COAT application.]
- F. Senergy BASE COAT:
- NOTE TO SPECIFIER: If specifying the use of Reinforcing Mesh, move on to the next step and delete F from this section of the specification.**
1. Apply a skim coat of Senergy BASE COAT, approximately 1/16" thick to properly cured "brown coat" of STUCCOBASE™/STUCCOBASE™ PREMIX.
 2. Allow to dry hard (normally 8 to 10 hours).
- [G. Optional Reinforcing Mesh: Base Coat shall be applied so as to achieve Reinforcing Mesh embedment with no Reinforcing Mesh color visible.
1. Reinforcing Mesh.
 - a. Install FLEXGUARD 4 over properly cured Senergy Sentry Stucco Ultra System "brown coat" of STUCCOBASE™/STUCCOBASE™ PREMIX.
 - b. Apply mixed Senergy Base Coat to entire surface of "brown coat" with a stainless steel trowel to embed the Reinforcing Mesh.
 - c. Immediately place FLEXGUARD 4 Reinforcing Mesh against wet Base Coat and embed the Reinforcing Mesh into the Base Coat by troweling from the center to the edges.
 - d. Lap Reinforcing Mesh 64 mm (2 1/2") minimum at edges.
 - e. Ensure Reinforcing Mesh is continuous at corners, void of wrinkles and embedded in Base Coat so that no Reinforcing Mesh color is visible.
 - f. If required, apply a second layer of Base Coat to achieve total nominal Base Coat/Reinforcing Mesh thickness of 1.6 mm (1/16").
 - g. Allow Base Coat with embedded Reinforcing Mesh to dry hard (normally 8 to 10 hours).]
- [H. Senergy STUCCOPRIME:
1. Apply STUCCOPRIME to the dried base coat skim coat with a sprayer, 10mm (3/8") nap roller, or good-quality latex paint brush at a rate of approximately 3.6–6.1m² per liter (150–250ft² per gallon).
 2. STUCCOPRIME shall be dry to the touch before proceeding with the Senergy FINISH COAT application.]
- I. Senergy FINISH COAT
- [1. SENERFLEX FINISH: [CLASSIC] [TEXTURE] [SAHARA] [BELGIAN LACE] [FINE] [METALLIC]
- OR -
- SENERLASTIC FINISH: [CLASSIC] [TEXTURE] [SAHARA] [BELGIAN LACE] [FINE]
- a. Apply FINISH directly to the dried base coat with a clean, stainless steel trowel.
 - b. Apply and level FINISH during the same operation to minimum obtainable thickness consistent with uniform coverage.
 - c. Maintain a wet edge on FINISH by applying and texturing 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.
 - e. Float FINISH to achieve final texture.]
- [2. [TC-100] [BOREALIS] [ALUMINA] FINISH COAT
- a. Apply STUCCOPRIME to substrate in accordance with current Senergy STUCCOPRIME product bulletin. STUCCOPRIME shall be of corresponding color for selected [TC-100] [BOREALIS] [ALUMINA] FINISH color. Allow STUCCOPRIME to dry to the touch before proceeding to [TC-100] [BOREALIS] [ALUMINA] 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 (Second coat not required for ALUMINA).
 - 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.
 - g. Double-back to achieve final texture.
 - h. Total thickness of FINISH shall be approximately 1.6 mm (1/16").]

Senergy Sentry Stucco Ultra System

[3. AURORA STONE FINISH

- a. Apply STUCCOPRIME to substrate in accordance with current Senergy STUCCOPRIME product bulletin. STUCCOPRIME shall be of corresponding color for selected AURORA STONE FINISH color. Allow STUCCOPRIME to dry to the touch before proceeding to AURORA STONE FINISH application.
- b. Apply a coat of AURORA STONE 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 AURORA STONE FINISH.
- d. Apply a second coat of AURORA STONE FINISH using a spray gun and hopper; double back to achieve final texture.
- e. Thickness of AURORA STONE FINISH may vary between 1.6 mm (1/16") and 3.2 mm (1/8"), depending upon texture.

Note: Spraying of AURORA STONE FINISH should 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.]

[J. BASF Wall System's ANTICOGLAZE™:

1. Apply BASF Wall System's ANTICOGLAZE™ in accordance with recommendations contained in current product literature.]

3.05 CLEANING

- A. Clean work under provisions of Section [017400] [].
- B. Clean adjacent surfaces and remove excess material, droppings, and debris.

3.06 PROTECTION

Protect finished work under provisions of Section [017600] [].

Note

BASF Wall Systems is an operating unit of BASF Construction Chemicals, LLC. (herein after referred to as "BASF Wall Systems")

Residential Policy

Apply walls systems in accordance with local building codes in force at the time of construction. On one and two-family residential framed construction, BASF Wall Systems requires that the wall system selected be one that includes provisions for moisture drainage. Please view the Finestone Residential Policy Bulletin on the Finestone website for a more detailed discussion of this topic.

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