

Sentry Stucco with MasterSeal® 581 Wall System

Section 09 24 23

Direct applied cement plaster stucco system for concrete and CMU featuring MasterSeal 581 waterproof cement-based coating.

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 Sentry Stucco with MasterSeal 581 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/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 poured concrete and unit masonry.
2. The substrate systems shall be engineered with regard to structural performance by others.

C. Moisture Control:

1. Flashing shall be provided per project design detailing and as required by local code.
2. The water resistive barrier must be installed over the substrate according to manufacturer’s specifications and applicable building code requirements.
3. Air Leakage Prevention: provide continuity of air barrier system at foundation, roof, windows, doors and other penetrations through the system with connecting and compatible air barrier components to minimize condensation and leakage caused by air movement.

D. Color Selection: 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 160°F (71°C).

E. Grade Condition: Stucco 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 Sentry Stucco with MasterSeal 581 Wall System with decorative shapes that incorporate EPS insulation board outside the slope guidelines

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referenced in this specification may still qualify for a standard warranty; however, low sloping shape 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 trim shapes that incorporate EPS insulation board. 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 30.5cm)]. 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, where substrates change and where structural movement is anticipated. Detail specific locations in construction drawings.
2. The spacing of control joints is less critical than in framed walls. Additional joints may be required to create a stop/ start point where long runs cannot be completed in the course of a typical workday. Install expanded wing casing beads at all penetrations and terminations. Regular plaster accessories may be used provided they are striped with lath. Foundation weep screeds are not required in direct applied systems. Detail specific locations in construction drawings.
3. 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.
4. Sealant joints are required at all penetrations through the Sentry Stucco MasterSeal 581 Wall System (windows, doors, lighting fixtures, electrical outlets, hose bibs, dryer vents, etc.).
5. For a list of acceptable sealants refer to *Acceptable Sealants for use with Senergy Wall Systems* technical bulletin.

H. Decks: Wood decks must be properly flashed prior to system application. The Sentry Stucco with MasterSeal 581 Wall System must be terminated a minimum of 1" (25mm) 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 an air seal between the primary air/water-resistive barrier and other wall components (penetrations, etc.) in order to maintain continuity of an air barrier system.
3. Install copings and sealant immediately after installation of the Sentry Stucco with MasterSeal 581 Wall System 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, 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 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 MasterSeal® 581 waterproofing, STUCCOBASE™/ STUCCOBASE™ PREMIX by Master Builders Solutions, STUCCOPRIME (optional) 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 Sentry Stucco with MasterSeal 581 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 07 27 00 Air barriers
- D. Section 07 62 00 Sheet Metal Flashing and Trim
- E. Section 07 65 00 Flexible flashing
- F. Section 07 90 00 Joint protection
- G. Section 08 00 00 Openings

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 D1784 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Compounds
- D. ICC-ES AC11 Cementitious Exterior Wall Coatings
- E. CCRR 0230 Intertek Code Compliance Research Report (STUCCOBASE/ STUCCOBASE PREMIX)

1.04 SUBMITTALS

- A. Submit under provisions of Section [01 33 00]
- B. Product Data: Provide data on Sentry Stucco with MasterSeal 581 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 Sentry Stucco with MasterSeal 581 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 design guide and related product literature which indicate preparation required, storage, installation techniques, jointing requirements and finishing techniques.

1.05 QUALITY ASSURANCE

- A. Manufacturer: More than 10 years in the cement plaster stucco industry, with more than 1000 completed cement plaster stucco projects.
- B. Applicator: Approved by Master Builders Solutions 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].

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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, MASTERSEAL 581, plaster trim accessories, STUCCOBASE™/STUCCOBASE™ PREMIX by Master Builders Solutions, STUCCOPRIME (if specified), Senergy Finish Coat and typical sealant/flashing conditions.

E. Testing:

1. Sentry Stucco with MasterSeal 581 Wall System and Component Performance:

TEST	METHOD	CRITERIA	RESULTS
Freeze-thaw Resistance	Per ICC-ES acceptance criteria AC-11	No sign of deleterious effects after 10 cycles	STUCCOBASE passed with no visible evidence of deterioration when examined under 5x magnification
Water Vapor Transmission	ASTM E96 -Wet Cup	Report Value	STUCCOBASE 20.4 perms
Compressive Strength	ASTM C109	Report Value	22.4 MPa (3245 psi) average for STUCCOBASE
Flexural Strength	ASTM C348	Report Value	4.57 MPa (663 psi) average for STUCCOBASE
Surface Burning	ASTM E84	Report Value	<25 Flame Spread <450 Smoke Developed Includes StuccoBase, and Senergy Finishes
Non-Combustibility	ASTM E136	No flaming, excess temperature rise or weight loss when exposed to 750°C (1382°F)	Pass StuccoBase
Fire Resistance Rated Assemblies	ASTM E119	No transmission of heat greater than 250°F above ambient; no passage of flame or hot gasses; no passage of water from hose stream test; for loadbearing walls – ability to withstand load under test conditions	Does not affect rating of concrete or masonry wall

2. MASTERSEAL 581:

PROPERTY	RESULTS	TEST METHOD
Initial Set, min at 70 °F (21 °C), 50% rh	10	Lab Method
Final Set, at 70 °F (21 °C), 50% rh	90	Lab Method
Density, (cured), lbs/ft3 (kg/m3)	129 (2,080)	Lab Method
Positive resistance to hydrostatic pressure, hrs, at 200 psi (1.4 MPa), 461 head ft, air cured at 70 °F (21 °C), 50% rh	752 No leakage, no softening	CRD C 48, modified
Negative resistance to hydrostatic pressure, hrs, at 200 psi (1.4 MPa), 461 head ft, air cured at 70 °F (21 °C), 50% rh	664 Limit Dampness	CRD C 48, modified
Water absorption, %, boiling water submersion at 24 hours	3.6	ASTM C 67 (Section 7.3)
Compressive strength, psi (MPa) 7 days 28 days	4,200 (29) 6,030 (42)	ASTM C 109
Flexural strength, psi (MPa) 7 days 28 days	360 (2.5) 1,027 (7)	ASTM C 348
Tensile strength, psi (MPa) 7 days 28 days	250 (2) 440 (3)	ASTM C 190
Artificial weathering, hrs. Xenon Arc Carbon Arc	5,000 = No failure 500 = No failure	ASTM G 26 ASTM G 23
Adhesion strength, psi (MPa)	418 (2.9)	Test by tensile bond
Artificial weathering, 500 hours	No cracking, loss of adhesion, checking, or other defect	Atlas Type DMC weatherometer
Freeze/thaw resistance, 200 cycles	No change	ASTM C 666 (Procedure B)

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Salt spray resistance, 300 hours	No defect	ASTM B 117
Carbon Dioxide (CO ₂), in (mm)	1/16 (1.6) Equivalent to 3/4" (19 mm) new concrete	Lab Method Diffusion
Permeance, perms	12 (0.10698) 8 x 10 ³ resistance	ASTM E 96 (water-vapor transmission) Swedish standard SS-02-15-82
Wind-driven rain, hrs	8 = excellent	Fed. Spec. TT-P-0035 (Para 4.4.7)
Coefficient of thermal expansion, in/in/°F (mm/mm/°C), at 28 days	6.99 x 10 ⁻⁶ (5 x 10 ⁻⁷)	ASTM C 531
Impact strength (Gardener impact tester)	No chipping	Fed. Spec. TT-P-0035 (Cement paints para. 3.4.8)
Hardness, (Barber Coleman Impressor) Requirement min = 30, max = 60 7 days 14 day 21 days	 35 47 52	Fed. Spec. TT-P-0035 (para 4.4.9)
Abrasion resistance, 3,000 L sand	Passed	Fed. Spec. TT-P-141B
Standard Reflectance Gray MasterSeal 581 White MasterSeal 581	 64.2 88.1	ASTM D 2244 using Hunterlab D- 25 meter
Fungus resistance, at 21 days	No growth; meets all requirements	Fed. Spec. TT-P-29B
Surface burning characteristics Flame Spread Smoke developed	 0 5	ASTM E 84
Fire Propagation Flame spread	Index = 1.5 Class 1	BS476: Part 6:1981 BS476: Part 7:1971

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 insulation boards flat and protected from direct sunlight and extreme heat.
- F. Store Reinforcing Mesh flexible flashing in cool, dry place.

1.07 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 Sentry Stucco Ultra Wall System installation and until dry.

1.08 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Sentry Stucco with MasterSeal 581 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 – Senergy standard material warranty for Sentry Stucco with MasterSeal 581 Wall System installations under provisions of Section [01 70 00]. Warranty term varies with system component's configuration, reference Senergy Warranty Schedule technical bulletin for specific information.

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B. Comply with Master Builders Solutions notification procedures to assure qualification for warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. All components of the Sentry Stucco with MasterSeal 581 Wall System shall be obtained from the system manufacturer or through an authorized distributor.

2.02 MATERIALS

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

A. MASTERSEAL 581 Waterproof Barrier: Portland cement-based coating for concrete and masonry that resists both air infiltration and positive as well as and negative hydrostatic pressure. Polymer-modified with MASTEREMACO A 660, MasterSeal 581 creates a low maintenance and highly durable waterproof barrier

B. MASTEREMACO A 660: An acrylic-polymer emulsion which enhances the adhesion, physical properties and durability of MASTERSEAL 581.

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

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

D. Plaster Sand: (Required if STUCCOBASE is selected)

1. 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>U.S. Standard Sieve</u>	<u>Minimum</u>	<u>Maximum</u>
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. Decorative Shapes: (Optional)

1. Expanded polystyrene; ASTM C578, Type I; Flame spread less than 25, smoke developed less than 450 per ASTM E84, UL 723; minimum density 0.95 lb./ft3 (15.22 kg/m3); 0.24/inch (K=6.09/mm); 3/4" (19 mm) thickness minimum as indicated on drawings; meeting the following:
 - a. Air-dried (aged) six weeks, or equivalent, prior to installation.
 - b. Edges: Square within 1/32" per foot (0.8 mm per 0.3 meter).
 - c. Thickness: Tolerance of (+/-) 1/16" (1.6 mm).
 - d. Length and width: Tolerance of (+/-) 1/16" (1.6 mm).

G. Adhesives/Base Coats: (Required if Decorative Shapes or if SRT MESH is Selected)

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. STUCCO SURFACE LEVELER by Master Builders Solutions: A polymer-modified dry-mix leveling and embedment coat for use with Senergy Stucco Systems and other Portland Cement Based Stucco

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

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- I. [FLEXGUARD 4 EPS Insulation Board Reinforcing Mesh \(Required if Decorative Shapes are Selected\): 4 oz balanced, open-weave glass, fiber reinforcing mesh, twisted multi-end strands treated for compatibility with Senergy Base Coats](#)
- J. [SRT MESH by Master Builders Solutions \(Optional\); a woven fiberglass mesh with mechanical strength and dimensional stability for superior crack resistance properties on new or retrofit stucco applications.](#)
- K. [STUCCOPRIME Prime by Master Builders Solutions: A 100% acrylic-based primer; color \[\] to closely match the selected Senergy Finish Color.](#)

NOTE TO SPECIFIER: STUCCOPRIME is recommended for CLASSIC finish texture and required for AURORA TC-100, AURORA STONE and ALUMINA finishes. Although optional in other applications, Senergy highly recommends the use of STUCCOPRIME prior to application of Senergy Finish over applications of Senergy Sentry Stucco with MasterSeal 581 wall system “brown coat”. The application of STUCCOPRIME will enhance color uniformity, performance and ease Senergy Finish application and will minimize the likelihood of read-through.

- L. **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: 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: 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. [MAXLASTIC Finish: 100% acrylic based, textured elastomeric finish that provides excellent flexibility, weatherability, and maximum resistance to mildew growth, air cured, compatible with base coat; Senergy finish color \[\] as selected; finish texture:](#)
 - a. [CLASSIC: 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: 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.](#) - 3. [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.](#) - 4. [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.](#)
 - c. [ALUMINA: Is a factory-mixed, reflective stone finish consisting of colored aggregate and large](#)

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[black mica flakes in a 100% acrylic transparent binder that provides a classic granite or marble-like textured finished appearance.](#)

5. [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: 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](#)

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 *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. **Site Conditions:** Verify project site conditions under provisions of Section [01 89 00] [].

B. Walls

1. Substrates
 - a. Acceptable substrates are poured concrete and unit masonry.
 - b. Verify concrete/unit masonry is free of dust, dirt, grease, oils, laitance, efflorescence, biological residue, existing paint or coatings, curing compounds, form release agents, or any other contaminants which might affect the bond of MASTERSEAL 581. Properly prepared concrete will have an open texture similar to fine grit sandpaper. Masonry walls should be properly cured to full load bearing capacity, laid true, and with joints tooled.
 - 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 1/4" in 10' (6 mm in 3 m).
 2. Flashings:
 - a. All flashings are by others and must be installed per project design detailing. Where appropriate, end-dams must be provided.
 3. Roof: Verify that all roof flashings have been installed in accordance with the guidelines set by the Asphalt Roofing Manufacturers Association (ARMA).
- C. 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. 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 Sentry Stucco with MasterSeal 581 Wall 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 that is clean and free of foreign substances. Do not use a

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container which has contained or been cleaned with a petroleum-based product. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

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

A. MASTERSEAL 581 and MASTEREMACO A 660: Mix MASTERSEAL 581 with a mixing liquid consisting of a blend of MASTEREMACO A 660 diluted with water. Maximum dilution ratio is one part MASTEREMACO A 660 (1½ quarts) to three parts water (4½ quarts). Approximately 6 quarts of mixing liquid is needed per 50 lbs. of MASTERSEAL 581 powder. For best results, mechanically mix MASTERSEAL 581 with a slow-speed drill and mixing paddle. Gradually add the powder to the mixing liquid while drill is running.

B. Stucco Base Coat:

1. STUCCOBASE: Use mixer which is clean and free of foreign substances. Add 5-6 gallons (18.9-22.7 L) of clean potable water to mixer per bag of STUCCOBASE. Add one bag of STUCCOBASE, followed by one half 100-120 lbs. (45.4-54.4 kg) of the required plaster sand (ASTM C144 or ASTM C897). Mix for 3-4 minutes at normal mixing speed while adding the remainder 100-120 lbs. (45.4-54.4 kg) of the plaster sand. Allow material to set for 2-4 minutes, then remix adding water to achieve desired consistency. **Note: Continuous mixing may cause excessive air entrainment.**
2. STUCCOBASE PREMIX: Use mixer which is clean and free of foreign substances. Add 2-2.5 gallons (7.6-9.5 liters) of clean potable water to mixer. Slowly add one bag of STUCCOBASE PREMIX. Mix for one minute at normal mixing speed. Allow material to set for 2-4 minutes with mixing blades at rest. Then re-mix, adding water to achieve desired consistency. Desired consistency varies with type of application (trowel or gun), substrate and whether the stucco is applied to a wall or a ceiling.

C. Adhesives/Leveler Base Coats:

1. ALPHA Base Coat: Mix base coat with a clean, rust-free paddle and drill until thoroughly blended, before adding Portland cement. Mix one-part (by weight) Portland cement with one-part base coat. Add Portland cement in small increments, mixing until thoroughly blended after each additional increment. Clean, potable water may be added to adjust workability.
2. ALPHA DRY Base Coat: Mix and prepare each bag in a 5-gallon (19-liter) pail. Fill the container with approximately 5.6-liters (1.5-gallons) of clean, potable water. Add Base Coat in small increments, mixing after each additional increment. Mix Base Coat and water with a clean, rust-free paddle and drill until thoroughly blended. Additional ALPHA DRY Base Coat or water may be added to adjust workability.
3. STUCCO SURFACE LEVELER: Mix and prepare each bag in a 5-gallon (19-liter) pail. Fill the container with approximately 1.3-gallons (6 liters) of clean, potable water. Add leveler in small increments, mixing after each additional increment. Mix leveler and water with a clean, rust-free paddle and drill until thoroughly blended. Additional 0.3 gallons of water for a maximum of 1.6 gallons (6 liters) may be added to adjust workability. Retemper before use if needed. Let stand for 5 to 10 minutes, then remix for 1 minute.

D. Primer: Thoroughly mix the factory prepared STUCCOPRIME with a paddle and drill to a uniform consistency. A small amount of clean, potable water may be added to adjust workability.

E. Senergy Finish Coat:

1. SENERFLEX, MAXLASTIC, 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.

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. MASTERSEAL 581 Waterproof Barrier: Dampen concrete or unit masonry (SSD) just prior to MASTERSEAL 581 application. Apply with a stiff bristle brush using a two coat application. Brush apply first coat vertically and second coat horizontally, as this will allow the MASTERSEAL 581 to act as a scratch coat for the stucco. Allow 24 hours between coats. The total thickness of the 2 coats should not exceed 1/8". Allow second coat of MASTERSEAL 581 to cure 24 hours prior to STUCCOBASE application. Install according to the manufacturer's specifications and all applicable building code requirements. The waterproof barrier shall be free of any damage such as holes or

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breaks and must be applied to all surfaces to receive the Sentry Stucco with MasterSeal 581 Wall System. Wrap the water resistive barrier into rough openings (doors, windows, etc.) Coordinate work with other trades to assure proper sequencing, detailing and installation of materials.

B. Trim Junction: When two pieces of trim abut: Set intersection of trim in a minimum 4" (100 mm) bed of acceptable trim sealant. Allow 1/8"-3/16" (3-5 mm) gap between the abutting trim pieces. Do not overlap trim. Attach the trim in accordance with manufacturer's specifications, true expansion joints must be fastened to the structural substrate.

1. When two or more pieces of trim intersect: The vertical trim piece shall be continuous with all horizontal pieces. Miter all corners at intersections of trim, set intersection of trim in a minimum 4" (100 mm) bed of acceptable trim sealant. Allow 1/8"-3/16" (3-5 mm) gap between the intersecting trim pieces. Do not overlap the trim. Attach the trim in accordance with manufacturers' specifications.

NOTE TO SPECIFIER: It is the sole responsibility of the project design team, including the architect, engineer, etc., to ultimately determine specific expansion and control joint placement, width and design.

C. STUCCOBASE/STUCCOBASE PREMIX Base Coat: Apply the STUCCOBASE/STUCCOBASE PREMIX mixture to the cured MASTERSEAL 581 by hand troweling to a thickness of 3/8" to 1/2". Use rod and darby to level the applied stucco base coat. After initial set begins and 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 coat. At subcontractor's option, the double back method of application, whereby two coats (scratch and brown) are applied and cured as one system, may be used. If this system is used, the second coat (brown) should be applied as soon as the first coat is rigid and able to support the second coat. For either application method, damp cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and windy conditions may make additional fogging necessary. Allow STUCCOBASE/STUCCOBASE PREMIX to cure a minimum of 6 days prior to application of EPS insulation board shapes, Senergy base coat and reinforcing mesh, STUCCOPRIME or Senergy finish coat.

NOTE: MASTERSEAL 581 and STUCCOBASE application should not exceed a total of 5/8".

D. STUCCOPRIME Primer: Apply to STUCCOBASE or "brown" coat with a sprayer, 3/8" (10mm) nap roller or good-quality latex paint brush at a rate of approximately 150-250ft² per gallon (3.6-6.1m² per liter). STUCCOPRIME shall be dry to the touch before proceeding with the Senergy finish coat application.

E. Decorative Shapes:

1. Apply mixed base coat to entire surface of insulation board using a stainless-steel trowel with 1/2"x1/2" (13mm x 13mm) notches spaced 1/2" (13mm) apart or 3/8"x3/8" (10mm x 10mm) notches spaced 3/8" (10 mm) apart. Immediately set shape 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. Abut all joints tightly and ensure overall flush level surface. Check adhesion periodically by removing a shape prior to set. Properly installed shapes will be difficult to remove and Senergy adhesive/base coat will be adhered to both the surface of the stucco and the shape. Fill 1/16" (1.6mm) and larger gaps between shapes with slivers of insulation board. Allow application of shapes to dry (normally 8 to 10 hours) prior to application of base coat/reinforcing mesh. Rasp flush any irregularities of the shapes greater than 1/16" (1.6 mm). Senergy base coat/reinforcing mesh: base coat shall be applied so as to achieve reinforcing mesh embedment with no reinforcing mesh color visible.

F. Adhesive/Base Coat:

1. As a base coat: apply a skim coat of Senergy base coat, approximately 1/16" (1.6mm) thick to properly cured "brown coat" of stucco base coat.

2. As an adhesive: Apply mixed base coat to entire surface of insulation board using a stainless-steel trowel with 1/2"x1/2" (13mm x 13mm) notches spaced 1/2" (13mm) apart or 3/8"x3/8" (10mm x 10mm) notches spaced 3/8" (10 mm) apart.

G. SRT Mesh: Apply mixed selected Base/Level Coat to entire surface of stucco with a stainless-steel trowel. Immediately place mesh against wet Senergy Base/Level Coat and embed mesh into the Base/Level Coat by troweling from center to the edges. Lap SRT MESH 2 1/2" (64mm) minimum at edges. Ensure mesh is continuous, void of wrinkles and embedded in Base Coat so that no mesh is

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visible. If required, apply a second layer of Base Coat to achieve total nominal Base Coat / SRT MESH thickness of 1/16" (1.6mm). Allow Base Coat with embedded mesh to dry hard (normally 8 to 10 hours) prior to finish coat application.

H. Senergy Finish Coat: SENERFLEX, MAXLASTIC, SENERFLEX TERSUS and CHROMA Finish

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.
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.

I. 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).

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

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WARRANTY

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

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