



Sentry Stucco with Sika Thoroseal-581 Wall System - Section 09 24 23

Direct applied cement plaster stucco system for concrete and CMU featuring Sika Thoroseal-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 Sika Corporation US (herein referred to as "Sika") has prepared guidelines in the form of specifications, typical application details, and product bulletins to facilitate the design process only. Sika 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 Sika or otherwise, or for any changes which the purchasers, specifiers, designers or their appointed representatives may make to Sika published comments.

Designing and Detailing a Sentry Stucco with Sika Thoroseal-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

G. NOTE TO SPECIFIER: Installation of the Sentry Stucco 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

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(EPS) shall be expected and any deleterious effects caused by the lack of slope will not be the responsibility of Sika. 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 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.

H. 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 with Sika Thoroseal-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.

- I. **Decks:** Wood decks must be properly flashed prior to system application. The Sentry Stucco with Sika Thoroseal-581 wall system must be terminated a minimum of 1" (25mm) above all decks, patios, sidewalks, etc.

J. 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-resistant 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 Sika Thoroseal-581 wall system and when Senergy coatings are completely dry.

TECHNICAL INFORMATION

Consult Sika Facades' Technical Services Department for specific recommendations concerning all other applications. Consult the Senergy website, usa.sika.com/senergy, for additional information about products, systems and for updated literature.

PART 1 GENERAL

NOTE TO SPECIFIER: Items in blue/underlined indicate a system option or choice of options. Throughout the specification, delete those which are not required or utilized.

1.01 SECTION INCLUDES

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- 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 Sika Thoroseal-581 waterproofing, SikaWall Stucco Base, SIKAWALL STUCCOPRIMER (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 Sika Thoroseal-581 wall system as manufactured by Sika Corporation US, Lyndhurst, NJ.

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 for SikaWall Stucco Base Sanded / Stucco Base Concentrate.

1.04 SUBMITTALS

- A. Submit under provisions of Section [01 33 00]
- B. Product Data: Provide data on Sentry Stucco with Sika Thoroseal-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 Sika Thoroseal-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 Sika 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.

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6. Field samples shall be comprised of all wall assembly components including substrate, SIKA THOROSEAL-581, plaster trim accessories, SikaWall Stucco Base, SikaWall STUCCOPRIMER (if specified), Senergy finish coat and typical sealant/flashing conditions.

E. Testing:

1. Sentry Stucco with Sika Thoroseal-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	SikaWall Stucco Base passed with no visible evidence of deterioration when examined under 5x magnification
Water Vapor Transmission	ASTM E96 -Wet Cup	Report Value	SikaWall Stucco Base 20.4 perms
Compressive Strength	ASTM C109	Report Value	22.4 MPa (3245 psi) average for SikaWall Stucco Base
Flexural Strength	ASTM C348	Report Value	4.57 MPa (663 psi) average for SikaWall Stucco Base
Surface Burning	ASTM E84	Report Value	<25 Flame Spread <450 Smoke Developed Includes SikaWall Stucco Base, and Senergy finishes
Non-Combustibility	ASTM E136	No flaming, excess temperature rise or weight loss when exposed to 750°C (1382°F)	Pass (SikaWall Stucco Base)
Fire Resistance Rated Assemblies	ASTM E119	No transmission of heat greater than 250°F above ambient; no passage of flame or hot gasses; no passage of water from hose stream test; for loadbearing walls – ability to withstand load under test conditions	Does not affect rating of concrete or masonry wall

2. Sika Thoroseal-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)		ASTM C 109
7 days	4,200 (29)	
28 days	6,030 (42)	
Flexural strength, psi (MPa)		ASTM C 348
7 days	360 (2.5)	
28 days	1,027 (7)	
Tensile strength, psi (MPa)		ASTM C 190
7 days	250 (2)	
28 days	440 (3)	
Artificial weathering, hrs.		
Xenon Arc	5,000 = No failure	ASTM G 26
Carbon Arc	500 = No failure	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)
Salt spray resistance, 300 hours	No defect	ASTM B 117
Carbon Dioxide (CO2), in (mm)	1/16 (1.6) Equivalent to 3/4" (19 mm) new concrete	Lab Method Diffusion
Permeance, perms	12 (0.10698) 8 x 103 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)

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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 Thoroseal-581 White Thoroseal-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 Sika materials in original unopened packages with manufacturer's labels intact.
- C. Protect Sika materials during transportation and installation to avoid physical damage.
- D. Store Sika materials in a cool, dry place protected from freezing. Store at no less than 40°F/4°C (50°F/10°C GRANITE & STONE finish).
- E. Store insulation boards flat and protected from direct sunlight and extreme heat.

1.07 PROJECT/SITE CONDITIONS

- A. Do not apply Sika material in ambient temperatures below 40°F/4°C (50°F/10°C for GRANITE & STONE Finish). Provide properly vented, supplementary heat during installation and drying period when temperatures less than 40°F/4°C (50°F/10°C for GRANITE & STONE Finish) prevail. Do not apply in ambient temperature above 100°F (38°C) or surface temperature above 120°F (49°C).
- B. Do not apply materials to frozen surfaces.
- C. Maintain ambient temperature at or above 40°F/4°C (50°F/10°C for GRANITE & STONE Finish) during and at least 24 hours after material installation and until dry.
- D. Under average conditions [70 °F (21 °C), 50% Relative Humidity] finish will be dry within 24 hours. Drying time is dependent on humidity, air temperature, sun exposure, surface conditions and finish thickness. Lower temperature, higher humidity and application in shaded areas will extend drying time. Protect finish from rain or other precipitation and temperatures less than 40°F (4°C) for a minimum of 24 hours or until dry.

1.08 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Sentry Stucco with Sika Thoroseal-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 a Sika standard material warranty for Sentry Stucco with Sika Thoroseal-581 wall system installations under provisions of Section [01 70 00].
- B. Comply with Sika Facades' notification procedures to assure qualification for warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. All components of the Sentry Stucco with Sika Thoroseal-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.

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Throughout the specification, delete those which are not required or utilized. Contact Sika Facades' Technical Service Department for further assistance.

- A. SIKA THOROSEAL-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 SIKA THOROSEAL ACRYL 60, THOROSEAL-581 creates a low maintenance and highly durable waterproof barrier
- B. SIKA THOROSEAL ACRYL 60: An acrylic-polymer emulsion which enhances the adhesion, physical properties and durability of THOROSEAL-581.
- C. **Stucco Base Coat: (Required, Select One)**

1. SIKAWALL STUCCO BASE CONCENTRATE: Factory-blended stucco mixture of Portland cement, reinforcing fibers, and proprietary ingredients.
2. SIKAWALL STUCCO BASE SANDED: Factory-blended stucco mixture of Portland cement, reinforcing fibers, sand, and proprietary ingredients.

- D. **Plaster Sand: (Required if SIKAWALL STUCCO BASE CONCENTRATE is retained: 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:**

Retained on U.S. Standard Sieve	Percent retained by weight \pm 2 percent	
	Minimum	Maximum
No. 4	-	0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

- 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 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. SIKAWALL STUCCO SURFACE LEVELER: 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.

- 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. **SIKAWALL SRT MESH(Optional):** a woven fiberglass mesh with mechanical strength and dimensional stability for superior crack resistance properties on new or retrofit stucco applications.

- K. **SIKAWALL STUCCO PRIMER:** A 100% acrylic-based primer; color [] to closely match the selected Senergy finish color.

NOTE TO SPECIFIER: STUCCO PRIME is recommended for CLASSIC finish texture. Although optional in other applications, Senergy recommends the use of STUCCO PRIME prior to

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application of Senergy Finish over applications of Senergy Sentry Stucco wall system “brown coat”. The application of STUCCO PRIME 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. FINE: Utilizes uniformly sized aggregates for a uniform, fine texture.
 - c. TEXTURE: Can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel
 - d. SAHARA: Provides a uniform, “pebble” appearance.
2. SIKAWALL MAXLASTIC Finish: 100% acrylic based; textured elastomeric finish that provides excellent flexibility and breathability, air cured, compatible with base coat; Senergy finish color [] as selected; finish texture:
 - a. 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.
 - b. F1.5: Utilizes uniformly sized aggregates for a uniform, fine texture.
 - c. T0.5: Can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel.
 - d. M1.5: 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. 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. FINE: Utilizes uniformly sized aggregates for a uniform, fine texture.
 - c. TEXTURE: Can achieve a wide variety of free-formed, textured appearances, including stipple and skip-trowel
 - d. SAHARA: Provides a uniform, “pebble” appearance.
4. SikaWall 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. SIKAWALL 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. SIKAWALL METALLIC: Has a pearlescent appearance. It utilizes uniformly sized aggregates for a uniform fine texture.
 - c. SIKAWALL GRANITE & STONE: 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.
5. SIKAWALL 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.

2.03 ACCESSORIES

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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 SIKA THOROSEAL-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: 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).
 4. 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.
- 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 Sentry Stucco with Sika Thoroseal-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 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. SIKATHOROSEAL-581 and THOROSEAL ACRYL 60: Mix THOROSEAL-581 with a mixing liquid consisting of a blend of THOROSEAL ACRYL 60 diluted with water. Maximum dilution ratio is one part THOROSEAL ACRYL 60 (1½ quarts) to three parts water (4½ quarts). Approximately 6 quarts of mixing liquid is needed per 50 lbs. of THOROSEAL-581 powder. For best results, mechanically mix THOROSEAL-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:

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1. SIKAWALL STUCCO BASE CONCENTRATE: Use mixer which is clean and free of foreign substances. Add approximately 3 gallons (11.35 liters) of clean potable water, one bag of STUCCO BASE CONCENTRATE and approximately 60 lbs. (27.2 kg) of plaster sand to mixer. Mix for 3-4 minutes at normal mixing speed while adding an additional 140-180 lbs. (64-82 kg) of plaster sand and 1-3 gallons (3.8-11.35L) of water for workability. Total amount of sand needed per bag of STUCCO BASE CONCENTRATE equals 200-240 lbs. (91-109 kg). Allow material to set for 2-4 minutes and then remix adding water if necessary to achieve desired consistency. Desired consistency varies with type of application (trowel or gun), substrate (paper-backed lath or block) and whether the stucco is applied to a wall or a ceiling.

Note: Continuous mixing may cause excessive air entrainment.

2. SIKAWALL STUCCO BASE SANDED: Use mixer which is clean and free of foreign substances. Add 1.3 gallons (4.9 liters) of clean potable water to mixer. Slowly add one bag of STUCCO BASE SANDED, mix until mixture becomes homogeneous, then add additional 0.2 gallons (.75L) of water. Mix at low speed for a minimum of 3 minutes, until the mixture is smooth. 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.

NOTE: Do not overmix; never mix more than five minutes. Mix each batch for the same amount of time. Mix batches of the same size, using the same amount of water, to ensure consistency.

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. SIKAWALL 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. SIKAWALL STUCCO PRIME:** Mix the factory-prepared material with a clean, rust-free paddle and drill until thoroughly blended. A small amount of clean, potable water may be added to adjust workability. Do not overwater.

E. Finishes

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.
2. SIKAWALL GRANITE & STONE Finish: Gently mix the contents of the pail for 1 minute using a low RPM 1/2" drill equipped with a mixing paddle such as a Demand Twister or a Wind-lock B-MEW, B-M1 or B-M9.

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. SIKA THOROSEAL-581 Waterproof Barrier:** Dampen concrete or unit masonry (SSD) just prior to THOROSEAL-581 application. Apply with a stiff bristle brush using a two coat application. Brush apply the first coat vertically and second coat horizontally, as this will allow the THOROSEAL-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 THOROSEAL-581 to cure 24 hours prior to STUCCOBASE application. Install according to the manufacturer's specifications and all applicable building code

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requirements. The waterproof barrier shall be free of any damage such as holes or breaks and must be applied to all surfaces to receive the Sentry Stucco with Sika Thoroseal-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. SikaWall Stucco Base Coat: Apply the SIKAWALL STUCCO BASE CONCENTRATE OR SANDED mixture to the cured THOROSEAL-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 STUCCO BASE CONCENTRATE OR SANDED to cure a minimum of 6 days prior to application of EPS insulation board shapes, Senergy base coat and reinforcing mesh, SIKAWALL STUCCO PRIMER or Senergy finish coat.

NOTE: SIKA THOROSEAL-581 and stucco base application should not exceed a total of 5/8".

A. Senergy Base Coat / SRT MESH or FLEXGUARD 4 Reinforcing Mesh:

1. Senergy base coat shall be applied to achieve reinforcing mesh embedment with no reinforcing mesh color visible. Apply mixed Senergy base coat or STUCCO SURFACE LEVELER to entire surface of "brown coat" with a stainless-steel trowel to embed the reinforcing mesh.
2. Immediately place reinforcing mesh against wet base coat and embed the reinforcing mesh into the base coat by troweling from the center to the edges. Lap reinforcing mesh 2 1/2" (64 mm) minimum at edges.
3. Ensure reinforcing mesh is continuous at corners, void of wrinkles and embedded in base coat so that no reinforcing mesh color is visible.
4. If required, apply a second layer of base coat to achieve total nominal base coat/reinforcing mesh thickness of 1/16" (1.6 mm).
5. Allow base coat with embedded reinforcing mesh to dry hard (normally 8 to 10 hours).

B. Decorative Shapes:

1. Apply mixed Senergy ALPHA or ALPHA DRY adhesive/base coat to entire surface of insulation board using a stainless-steel trowel with 1/2"x 1/2" (13mm x 13mm) notches spaced 1/2" (13mm) apart or 3/8"x 3/8" (10mm x 10mm) notches spaced 3/8" (10 mm) apart.
2. 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.
3. Abut all joints tightly and ensure overall flush level surface.
4. 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 STUCCO BASE and the shape.
5. Fill 1/16" (1.6mm) and larger gaps between shapes with slivers of insulation board.
6. Allow application of shapes to dry (normally 8 to 10 hours) prior to application of ALPHA or ALPHA DRY base coat and FLEXGUARD 4 reinforcing mesh.
7. Rasp flush any irregularities of the shapes greater than 1/16" (1.6 mm).

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8. Apply Senergy base coat to entire surface of insulation board with a stainless-steel trowel to embed the reinforcing mesh. Immediately place Senergy 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.
 9. Lap reinforcing mesh 2 1/2" (64 mm) minimum at edges and 3" (75 mm) minimum onto stucco base.
 10. Ensure reinforcing mesh is continuous at corners, void of wrinkles and embedded in base coat so that no reinforcing mesh color is visible. If required, apply a second layer of base coat to achieve total nominal base coat/reinforcing mesh thickness of 1/16" (1.6 mm).
 11. Allow base coat with embedded reinforcing mesh to dry hard (normally 8 to 10 hours).
- C. SIKWALL STUCCO PRIME / TINTED PRIMER:**
1. Apply primer to cured stucco or base coat with a sprayer, 3/8" (10 mm) nap roller, or good quality latex paint brush at a rate of approximately 150-250 sq. ft. per gallon (3.6-6.1 m² per liter). Primer must be dry to the touch before proceeding to the Senergy Finish application.
- D. Senergy Finish Coat: SENERFLEX, MAXLASTIC, SENERFLEX TERSUS and CHROMA.**
1. Apply finish directly to the base coat with a clean, stainless steel trowel.
 2. Apply and level finish during the same operation to a minimum obtainable thickness consistent with uniform coverage. Maintain a wet edge on finish by applying and texturing continually over the wall surface.
 3. Work finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area. Float finish to achieve final texture.
- F. SIKAWALL GRANITE & STONE Finish:**
1. Apply SIKAWALL TINTED PRIMER to the substrate in accordance with the current product bulletin. Primer shall be of the corresponding color for the selected finish color. Allow the primer to dry to the touch before proceeding with finish application.
 2. Apply a tight coat of finish with a clean, stainless steel trowel. Maintain a wet edge on finish by applying and leveling continually over the wall surface.
 3. 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.
 4. Use a stainless-steel trowel and apply the second coat of finish. Achieve final texture using circular motions. 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 materials from rain, snow and frost for 48-72 hours following application.
- B. Under average conditions [70 °F (21 °C), 50% Relative Humidity] finish will be dry within 24 hours. Drying time is dependent on humidity, air temperature, sun exposure, surface conditions and finish thickness. Lower temperature, higher humidity and application in shaded areas will extend drying time. Protect finish from rain or other precipitation and temperatures less than 40°F (4°C) for a minimum of 24 hours or until dry.
- C. Protect installed construction under provisions of Section [01 76 00] [].

END OF SECTION

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WARRANTY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com/senergy or by calling SIKAFACADES' Technical Service Department at 1-800-589-1336. Nothing contained in any SIKALITERATURE or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKAPRODUCT as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKAPRODUCT.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKASHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKASHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. Sale of SIKAPRODUCTS are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/>.

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