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DIVISION: 09—FINISHES
Section: 09220—Portland Cement Plaster

REPORT HOLDER:

DEGUSSA WALL SYSTEMS, INC.
3550 ST. JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FL 32224
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EVALUATION SUBJECT:

CEMENTITIOUS EXTERIOR WALL COVERING SYSTEM

ADDITIONAL LISTEES:

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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2003 *International Building Code*® (IBC)
- 2003 *International Residential Code*® (IRC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)
- 1997 *Uniform Building Code*™ (UBC)

Properties evaluated:

- Weather resistance and durability
- Fire-resistance
- Noncombustible construction
- Structural

2.0 USES

StuccoBase is a cementitious exterior wall covering system installed on exterior walls of wood or steel frame, concrete or masonry construction.

3.0 DESCRIPTION

3.1 General:

StuccoBase is a proprietary mixture of portland cement, sand, chopped fibers and proprietary ingredients reinforced with wire fabric, metal or glass fiber lath and applied to substrates of expanded polystyrene (EPS) insulation board, gypsum sheathing board, fiberboard, plywood, or oriented strand board (OSB). StuccoBase is also applied over concrete or masonry units with or without lath.

3.2 Materials:

3.2.1 StuccoBase Concentrate: StuccoBase Concentrate is a factory-prepared mixture of Type I, II or III portland cement complying with ASTM C 150, chopped fibers and proprietary additives. The mixture is packaged in 80-pound (36.3 kg) bags. Four and one half gallons (17 L) to 6 gallons (22.7 L) of water and 240 pounds (108.9 kg) of sand are added to each bag in the field and mixed in accordance with the manufacturer's recommendations. Alternatively, the mixture may be blended at a batching plant and delivered with sand in a bulk-mixer to the jobsite and field-mixed with water, under the following conditions:

1. The bulk-mixer bears an identification label showing the Senergy, Finestone, SonoWall Stucco Systems or Acrocrete name and address, the batch plant name and address, the product name, and the evaluation report number (ESR-1064).
2. A signed certificate from the batching plant accompanies each batch, specifying the plant name, contractor's name, jobsite address, date, materials batched, quantity, and curing instructions. The ratio of batched amounts shall be 240 pounds (108.9 kg) of sand to 80 pounds (36.3 kg) of mixture.
3. Procedures are in place to prevent tampering in controlling the amount of mixture and sand combined.

Approved color pigments may be added to the stucco mix in accordance with the manufacturer's instructions.

***Revised January 1, 2006**

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3.2.2 StuccoBase Premix: A factory-prepared mixture of sand and StuccoBase Concentrate, packaged in 80-pound (36.3 kg) bags. One and one fifth gallons (4.5 L) to 1½ gallons (5.7 L) of water shall be added to each bag in the field and mixed.

3.2.3 Sand: Sand shall be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter. Sampling and testing shall comply with ASTM C 144-93 or C 897. Sand shall be graded in accordance with ASTM C 144-93 or C 897 within the following limits:

RETAINED ON U.S. STANDARD SIEVE	PERCENT MAINTAINED BY WEIGHT ± 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

3.2.4 Insulation Board: The expanded polystyrene (EPS) insulation board shall have a nominal density of 1.5 pounds per cubic foot (24 kg/m³) or greater, a flame-spread index of 25 or less, and a smoke-developed index of 450 or less, and shall comply with ASTM C 578 as Type II. Unbacked boards shall be 1 to 1½ inches (25 mm to 38 mm) thick and have ¾-inch-high (9.5 mm) tongues with compatible grooves for horizontal joints. See Figure 1 of this report for joint detail. All boards shall be recognized in an ICC-ES evaluation report. See Section 7.0 for board identification.

3.2.5 Lath:

3.2.5.1 Wire Fabric Lath: The lath shall be minimum No. 20 gage [0.035 inch (0.5 mm)], 1-inch (25 mm), galvanized steel woven-wire fabric. In addition, the BNBC, IRC and SBC require the lath to comply with ASTM C 1032. Lath shall be self-furred or furred when applied over all substrates. For installations complying with the SBC or UBC over unbacked polystyrene board, the lath need not be furred or self-furred. Self-furring lath for coatings shall comply with the following requirements:

1. The maximum total coating thickness shall be ½ inch (12.7 mm).
2. Furring crimps shall be provided at maximum 6-inch (152 mm) intervals each way. The crimps shall fur the body of the lath a minimum of ⅛ inch (3.2 mm) from the substrate after installation.

3.2.5.2 Metal Lath: Metal lath shall comply with ASTM C 847 (IBC, IRC, BNBC, or SBC) or Table 25-B of the UBC . Furring and self-furring requirements shall be as set forth for wire fabric lath.

3.2.5.3 Glass Fiber Lath: PermaLath glass fiber lath shall comply with ICC-ES evaluation report ESR-1511.

3.2.6 Gypsum Sheathing Board: Water-resistant core gypsum sheathing shall comply with ASTM C 79.

3.2.7 Fiberboard: Minimum ½-inch-thick (12.7 mm), asphalt-impregnated fiberboard shall comply with ANSI/AHA A194.1 as a regular density sheathing.

3.2.8 Wood-based Structural Panels: The panels shall be minimum ⅝-inch-thick (7.9 mm) plywood or OSB, for studs spaced 16 inches (406 mm) on center, and shall be minimum ¾-inch-thick (9.5 mm) plywood or ⅞-inch-thick (11.1 mm) OSB for studs spaced 24 inches (610 mm) on center. Plywood shall be exterior grade or Exposure 1 and comply with DOC PS-1 or UBC Standard 23-2, and OSB shall be Exposure 1 and comply with DOC PS-2 or UBC Standard 23-3.

3.2.9 Caulking: Acrylic latex caulking materials shall comply with ASTM C 834.

3.2.10 Weather Protection:

3.2.10.1 Water-resistive Barrier: The requirement is minimum No. 15 asphalt non-perforated felt complying as Type I in accordance with ASTM D 226 (IBC or BNBC or IRC); minimum Grade D kraft building paper complying with UBC Standard 14-1; asphalt-saturated rag felt complying with UL Standard 55A (UBC); or material recognized in a current evaluation report as complying with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38). The water-resistive barrier shall be required over all substrates except under the SBC or the UBC, where the barrier is permitted to be installed behind the EPS board. Application of the barrier shall comply with Section 1404.2 of the IBC, Section R703.2 of the IRC, Section 1406.3.6 of the BNBC, Section 2303.3 of the SBC or Section 1402.1 of the UBC. When applied over any wood-based sheathing, the barrier shall be either: (a) a minimum of two layers of Grade D building paper as set forth in Section 2510.6 of the IBC or Section 2506.4 of the UBC; or (b) one layer of insulation board, having horizontal tongue-and-groove edges as described in Section 3.2.4 of this report, over one layer of Grade D building paper having a minimum water-resistance rating of 60 minutes.

3.2.10.2 Vapor Retarder: A vapor retarder complying with Section 1403.3 of the IBC and Section R318.1 of the IRC shall be provided, unless its omission is permitted under the exceptions noted in Section 1403.3 of the IBC or Section R318.1 of the IRC.

3.2.10.3 Flashing, Trim and Accessories: All flashing, trim, weep screeds and corner reinforcement shall be of corrosion-resistant metal or approved plastic. Flashing shall be installed at the perimeter of all penetrations of the system in accordance with the applicable code. Membrane flashing shall comply with AC148 and shall be a self-adhering, flexible rubberized asphalt and polyethylene material, 0.030 inch (0.8 mm) thick, shingle-lapped over the weather-resistive barrier. Rigid flashing shall comply with Section 1405.3 of the IBC and shall be sloped towards the exterior, with an upturned leg on the interior side and at the ends. Flashing shall extend beyond the surface of the exterior wall.

3.2.11 Miscellaneous: All trim, screeds and corner reinforcement shall be galvanized steel or approved plastic.

4.0 INSTALLATION

4.1 Installation:

4.1.1 General: The exterior cementitious coating shall be applied by hand-troweling or machine-spraying in one or two coats to a minimum ¾-inch (9.5 mm) thickness. The lath, when required, shall be embedded in the minimum coating thickness and therefore cannot be exposed. The finish coat, if used, shall be applied within 72 hours after the base coat, unless the latter is sprayed/brushed with an acrylic-bonding adhesive, or a bonding treatment is added to the finish-coat stucco mix prior to application. Flashing, corner reinforcement, metal trim and weep screeds shall be installed as shown in Figure 3 of this report. The coating shall be applied at ambient air temperatures ranging from 40°F (4.4°C) to 120°F (49°C) by applicators approved by Senergy, Finestone, SonoWall Stucco Systems or Acrocrete. The water-resistive barrier shall be applied as set forth in Section 3.2.10.1 of this report. The water-resistive barrier may be omitted when the stucco is installed directly over cast concrete or unit masonry substrates. An installation card, as noted in Figure 2 of this report, shall be on the jobsite with the name of the applicator and the product to be used before any water-resistive barrier or exterior sheathing is installed. Also, see Section 5.6 of this report.

4.1.2 Application over Open Framing: Insulation Board:

The EPS board described in Section 3.2.4 of this report shall be placed horizontally with tongues faced upward and shall be temporarily held in place with galvanized staples or roofing nails over open wood studs spaced a maximum of 24 inches (610 mm) on center. Vertical butt joints shall be staggered a minimum of one stud space from adjacent courses and shall occur directly over studs. The water-resistive barrier shall be applied over the EPS board. Under the SBC and UBC, the water-resistive barrier shall be permitted to be behind the EPS board. The metal lath shall then be applied tightly with 1½-inch (38 mm) end and side laps over the EPS board and fastened through the board and water-resistive barrier to wood studs with No. 11 gage galvanized roofing nails or No. 15 gage galvanized staples spaced 6 inches (152 mm) on center if attached to Douglas fir–larch (minimum specific gravity of 0.50) wood studs. The fastener spacing shall be a maximum of 5 inches (127 mm) on center for framing with a minimum specific gravity of 0.46, such as Douglas fir–south, hem-fir–south, western hemlock or western hemlock–south. For framing with a minimum specific gravity of 0.42, such as hem-fir or spruce-pine-fir, the maximum spacing of fasteners shall be 4 inches (102 mm) on center. Staples shall have a minimum crown width of ½ inch (12.7 mm). Fasteners for metal lath shall penetrate a minimum of 1 inch (25 mm) into wood studs. Care shall be taken to avoid overdriving fasteners. StuccoBase shall also be permitted to be applied to minimum No. 20 gage [0.035 inch (0.9 mm) minimum base-metal thickness] steel studs spaced a maximum of 24 inches (610 mm) on center. The metal lath shall be applied tightly over the polystyrene board with 1½-inch (38 mm) end and side laps and fastened through the board and water-resistive barrier to the steel studs with No. 7, S12-20, self-drilling, self-tapping, panhead screws spaced 6 inches (152 mm) on center. Screw-head diameter shall be a minimum of 0.333 inch (8.5 mm). The screws shall be long enough to penetrate studs ¼ inch (6.4 mm), with a 1¼-inch (32 mm) minimum length. Wall bracing in accordance with Section 2308.9.3 of the IBC, Section R602.10 or R602.11 of the IRC, Section 2305.8.1 of the BNBC, Section 2308.2.2 or Table 2308.2.2A of the SBC, or Section 2320.11.3 or 2320.11.4 of the UBC, or an acceptable alternative, shall be required. Outside wall corners and parapet corners shall be covered with extra metal corner reinforcement. Weep screeds shall comply with, and be installed at the bottom of the wall in accordance with, Section 2512.1.2 of the IBC; ASTM C 926, Section A2.2.2 (under the BNBC and SBC); or Section 2506.5 of the UBC. Galvanized steel, 1⅜-inch (35 mm), J-shaped trim pieces shall be installed at other areas where the EPS board is exposed. At windows and doors, butting J-trim metal edges shall be caulked. Holes for hose bibbs, electrical panels and other penetrations of substrate surfaces, except those caused by fasteners, shall also be caulked. After caulking, the coating shall be applied as described in Section 4.1.1 of this report.

4.1.3 Application over Solid Backing:

4.1.3.1 Fiberboard: Minimum ½-inch-thick (12.7 mm) fiberboard sheathing shall be installed directly over wood studs spaced a maximum of 24 inches (610 mm) on center. The fiberboard shall be temporarily held in place with corrosion-resistant staples or roofing nails. A water-resistive barrier, as set forth in Section 3.2.10.1 of this report, shall be applied over the fiberboard or optional insulation board prior to application of metal lath. The metal lath shall then be attached to studs through the sheathing with fasteners and spacings described for insulation board in Section 4.1.2 of this report or as described for fiberboard in either Table 2304.9.1 of the IBC, Table R602.3(1) of the IRC, Table 2305.2 of the BNBC, Table 2306.1 of the SBC, or Table 23-II-B-1 of the UBC, whichever is more restrictive. The sheathing

shall also be permitted to be applied to minimum No. 20 gage [0.035 inch (0.9 mm)] minimum base-metal thickness] steel studs spaced a maximum of 24 inches (610 mm) on center. The fiberboard shall be temporarily held in place with self-tapping screws, and shall be covered by a water-resistive barrier as set forth in Section 3.2.10.1 of this report. Self-furring or furred metal lath shall be secured through the water-resistive barrier and sheathing to the studs with No. 7, S12-20, self-drilling, self-tapping panhead screws spaced as for wood studs. Screw-head diameter shall be a minimum of 0.333 inch (6.5 mm). The screws shall be long enough to penetrate the studs ¼ inch (6.4 mm), with a 1¼-inch (32 mm) minimum length. All walls shall be braced in accordance with the applicable code. Exposed sheathing edges shall be protected with screeds. Holes in the substrate surface shall be caulked and the coating applied as described in Section 4.1.1 of this report.

4.1.3.2 Gypsum Sheathing: Minimum ½-inch-thick (12.7 mm), water-resistant core gypsum sheathing shall be permitted to be installed directly on wood studs spaced a maximum of 24 inches (610 mm) on center, in a manner similar to the installation for fiberboard. Gypsum sheathing shall be fastened in accordance with ASTM C 1280 (under the IBC), Table R702.3.5 of the IRC, Table 2304.1 of the BNBC, Section 2504.6 of the SBC or Table 25-G of the UBC. The water-resistive barrier shall be required over the gypsum sheathing prior to installation of the metal lath and coating as described in Section 4.1.2 of this report. The sheathing shall also be permitted to be applied to minimum No. 20 gage [0.035 inch (0.9 mm) minimum base-metal thickness] steel studs spaced a maximum of 24 inches (610 mm) on center. The gypsum sheathing shall be attached to metal studs with screws complying with ASTM C 954 in accordance with Section 2504.0 and Table 2503.2 of the BNBC; ASTM C 1280 (under the IBC); Section R702.3.6 of the IRC; Section 2503.3 and Table 2503.3 of the SBC; or Table 25-G of the UBC, except for spacing, which shall be a maximum of 6 inches (152 mm) on center. The water-resistive barrier shall be temporarily fastened, and shall be followed by the self-furring or furred metal lath. EPS insulation board, ½ inch to 1½ inches (12.7 mm to 38 mm) thick, shall be permitted to be installed over the gypsum board prior to installation of the water-resistive barrier metal lath and coating. The metal lath shall be attached through the sheathing to metal studs as set forth in Section 4.1.2 of this report. Screws fastening sheathing and screws fastening metal lath shall be staggered from each other.

4.1.3.3 Wood-based Structural Panels: Wood-based structural panels shall be applied directly to wood studs under conditions set forth in Section 3.2.8 of this report and either Table 2308.9.3(3) of the IBC, Table R602.3(3) of the IRC, Table 2307.3.5 of the BNBC, Table 2308.1B of the SBC, or Table 23-IV-D-1 and Table 23-11-B-1 of the UBC. The panels shall be attached in accordance with Table 2304.9 of the IBC, Table R602.3(1) of the IRC, Table 2305.2 of the BNBC, Table 2306.1 of the SBC or Table 23-II-B-1 of the UBC. The water-resistive barrier, metal lath, and coating shall be applied as described in Section 4.1.3.1 of this report for fiberboard.

4.1.3.4 Concrete and Masonry:

4.1.3.4.1 Direct Application without Lath: Surface preparation of cast-in-place or precast concrete and masonry shall be straight and true within ¼ inch (6.4 mm) in 10 feet (3048 mm) and shall be in accordance with Section 2510.7 of the IBC, Section 2506.3 of the BNBC, Section 2504.2 of the SBC or Section 2508.8 of the UBC. Surfaces shall be clean and free from any deleterious materials. Surfaces shall be adequately rough to have good absorption for proper bonding. Cast-in-place or precast concrete that has smooth or nonabsorbent solid surfaces shall be prepared to receive

stucco by sandblasting, wire brushing, acid etching, or chipping. The coating shall be applied directly to the prepared surface at a minimum thickness of $\frac{3}{8}$ inch (9.5 mm) in accordance with Section 4.1.1 of this report.

4.1.3.4.2 Application with Lath: Lathing and furring used to receive stucco shall be installed and conform with ASTM C 1063. Fasteners used to install the lath shall be recognized in an ICC-ES evaluation report. The lath shall be fastened in vertical rows, a maximum of 24 inches (609.6 mm) on center. Fastener spacing in each row shall be a maximum of 6 inches (152.4 mm). The coating shall be applied in accordance with Section 4.1.1 of this report. Application using PermaLath, as an alternative to metal lath, shall comply with ICC-ES evaluation report ESR-1511.

4.1.4 Application with PermaLath: Application using PermaLath, as an alternative to metal lath, shall comply with ICC-ES evaluation report ESR-1511.

4.2 One-hour Fire-resistive Wall Assembly:

4.2.1 First Assembly (Metal Lath):

4.2.1.1 Interior Face: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm), Type X gypsum board, water-resistant backer board or veneer base complying with ASTM C 36 shall be applied parallel or at right angles to the interior face of 2-by-4 wood studs spaced a maximum of 24 inches (610 mm) on center. The gypsum board shall be attached with 6d, cement-coated cooler nails, $\frac{17}{8}$ inches (48 mm) long with $\frac{1}{4}$ -inch-diameter (6.4 mm) heads, at 7 inches (178 mm) on center to studs, plates and blocking. All gypsum board joints shall be backed with minimum 2-by-4 wood framing, taped and treated with joint compound in accordance with Section 22 of ASTM C 840. Fastener heads shall also be treated with joint compound in accordance with ASTM C 840.

4.2.1.2 Exterior Face: One layer of minimum $\frac{5}{8}$ -inch-thick (15.9 mm), Type X, water-resistant core-treated gypsum sheathing, 48 inches (1219 mm) wide, shall be applied parallel to studs with No. 11 gage galvanized roofing nails $1\frac{3}{4}$ inches (44.5 mm) long with $\frac{7}{16}$ -inch- or $\frac{1}{2}$ -inch-diameter (11.1 mm or 12.7 mm) heads at 4 inches (102 mm) on center at board edges and 7 inches (178 mm) on center at intermediate studs. The sheathing shall be nailed to top and bottom plates at 7 inches (178 mm) on center. A water-resistive barrier shall be required over the sheathing. The wire fabric lath and wall coating shall then be applied, without insulation board, as described in Section 4.1.3.1 of this report.

4.2.1.3 Axial Design: The wood stud axial design stress for the wall assembly, as calculated in accordance with Section 2306 of the IBC, Section R602.3 of the IRC, Section 2303.1.1 of the NBC, Section 2301.2 of the SBC or Chapter 23, Division III of the UBC, whichever code is applicable, shall be limited to $0.78 F'_c$, and the maximum stress shall not exceed $0.78 F'_c$ at a maximum l_e/d ratio of 33.

4.2.2 Second Assembly (Metal Lath):

4.2.2.1 Interior Face: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm), Type X gypsum wallboard, complying with ASTM C 36, shall be applied to the interior face of nominally 2-by-4 wood studs spaced a maximum of 16 inches (406 mm) on center. The gypsum board shall be fastened with 2-inch-long (51 mm), No. 11 gage roofing nails with minimum $\frac{5}{16}$ -inch (7.9 mm) head diameters at 6 inches (152 mm) on center to all framing members. As an alternative, the gypsum board attachment shall be permitted to be with 6d cooler or wallboard nails spaced at 7 inches (178 mm) on center as set forth in the applicable code. All wallboard joints shall be backed with minimum 2-by-4 wood framing, taped and treated with joint compound in accordance with Section 22 of ASTM C 840. Fastener heads shall be treated with joint compound in

accordance with Section 22 of ASTM C 840. Stud wall cavities shall be filled with $3\frac{5}{8}$ -inch-thick (92 mm), R-11 rockwool insulation, with a 1.8 psf (0.086 kN/m²) density, which shall be attached to the framing members.

4.2.2.2 Exterior Face: A water-resistive barrier complying with Section 3.2.10.1 of this report shall be applied over the exterior stud face, followed by 1-inch-thick (25 mm), 1.5 pcf density (24 kg/m³) EPS board applied as described in Section 4.1.2 of this report. The No. 20 gage woven-wire lath shall then be fastened through the EPS board to the wood framing with 2-inch-long (51 mm), No. 11 gage roofing nails having minimum $\frac{5}{16}$ -inch-diameter (7.9 mm) heads at 6 inches (152 mm) on center. StuccoBase shall then be applied at least $\frac{3}{8}$ inch (9.5 mm) thick as described in Section 4.1.1 of this report.

4.2.2.3 Axial Design: Axial loads applied to the wall assembly shall be limited by the lesser of the following:

- 1,200 pounds (5340 N) per stud.
- A maximum of 50 percent of the load calculated in accordance with the NDS.
- Design stress of $0.78 F'_c$.
- Design stress of $0.78 F'_c$ at a maximum l_e/d of 33.

4.2.3 Third Assembly (Metal Lath):

4.2.3.1 Interior Face: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm), Type X gypsum board, complying with ASTM C 36, is applied horizontally or vertically to the interior face of 2-by-4 wood studs spaced a maximum of 24 inches (610 mm) on center. The gypsum board shall be fastened to the studs and perimeter framing using $1\frac{7}{8}$ -inch-long (47.6 mm), 0.100-inch-diameter (2.54 mm), galvanized steel, cupped-head drywall nails, having a minimum head diameter of 0.300 inch (7.62 mm), spaced a maximum of 7 inches (178 mm) on center. All gypsum board joints shall be taped and treated with joint compound in accordance with Section 22 of ASTM C 840. All vertical joints in the gypsum board shall occur over studs. Fastener heads shall also be treated with joint compound in accordance with Section 22 of ASTM C 840. Kraft paper-faced fiberglass insulation batts shall be placed in the cavities between the studs, with the kraft paper surface on the interior side of the wall, and fastened to the studs. The insulation batts shall have an R-11 thermal resistance value, and measure $3\frac{1}{2}$ inches (89 mm) thick.

4.2.3.2 Exterior Face: One layer of $\frac{7}{16}$ -inch-thick (11.1 mm) OSB, one layer of $\frac{15}{32}$ -inch-thick (11.9 mm) plywood or one layer of $\frac{1}{2}$ -inch-thick (12.7 mm), water-resistant core treated gypsum board complying with ASTM C 79, shall be applied vertically to the wall, and fastened to the wood studs, sills and plates using $1\frac{7}{8}$ -inch-long (48 mm) by 6d coated sinker nails spaced a maximum of 8 inches (203 mm) on center. All vertical joints in the OSB, plywood or gypsum board shall occur over studs. One or two layers of building paper, depending on substrate, shall be applied to the exterior face and attached to the wood studs in accordance with Section 3.2.10 of this report. One-inch (25 mm) by No. 20 gage woven-wire lath shall be fastened through the sheathing to the studs with $1\frac{1}{4}$ -inch-long-by-No.-16-gage-by-1-inch-crown staples, spaced 6 inches (152 mm) on center along all studs and perimeter framing. The StuccoBase mixture shall then be applied to the lath in accordance with Section 4.1.1 of this report at a minimum thickness of $\frac{3}{8}$ inch (9.5 mm). For studs 10 feet (3048 mm) long or longer, a mid-height blocking between studs shall be required.

4.2.3.3 Axial Design: Axial loads applied to the system described in Section 4.2.3.2 of this report shall be limited to the lesser of the following:

1. 1,100 pounds (4895 N) per stud.
2. A maximum of 47.5 percent of the load calculated in accordance with the NDS.
3. Design stress of $0.78 F'_c$.
4. Design stress of $0.78 F'_c$ at a maximum l/d of 33.

4.2.4 Fourth Assembly (PermaLath):

4.2.4.1 Interior Face: One layer of $5/8$ -inch-thick (15.9 mm), Type X gypsum board, complying with ASTM C 36, is applied horizontally or vertically to the interior face of 2-by-4 wood studs spaced a maximum of 16 inches (406 mm) on center. The gypsum board shall be fastened to the studs and perimeter framing using $17/8$ -inch-long (47.6 mm), 0.100-inch-diameter (2.54 mm), galvanized steel, cupped-head drywall nails, having a minimum head diameter of 0.300 inch (7.62 mm), spaced a maximum of 8 inches (178 mm) on center. All gypsum board joints shall be taped and treated with joint compound in accordance with Section 22 of ASTM C 840. All vertical joints in the gypsum board shall occur over studs. Fastener heads shall also be treated with joint compound in accordance with Section 22 of ASTM C 840. Kraft paper-faced fiberglass insulation batts shall be fitted into each stud using Arrow No. T50 $5/16$ -inch staples spaced nominally 6 inches on center. The insulation batts shall have an R-11 thermal resistance value, and measure $3\frac{1}{2}$ inches (89 mm) thick.

4.2.4.2 Exterior Face: One layer of $7/16$ -inch-thick (11.1 mm) OSB shall be applied vertically or horizontally to the wall and fastened to the wood studs, sills and plates using $17/8$ -inch-long (48 mm) by 6d coated sinker nails spaced a maximum of 8 inches (203 mm) on center. All vertical joints in the OSB shall occur over studs. Two layers of a water-resistive barrier shall be applied to the exterior face and attached to the wood studs in accordance with Section 3.2.10 of this report. PermaLath shall be applied over the water-resistive barrier with a minimum of 3 inches of overlap at vertical and horizontal edges and overlap onto the flange of trim accessories. PermaLath shall be applied horizontally such that it is flat and free of ripples, wrinkles, etc. PermaLath shall be attached using galvanized staples (No. 16 gage, 1-inch crowns, $1\frac{1}{4}$ -inch legs) to the framing every 6 inches on center. The StuccoBase mixture shall then be applied to the lath in accordance with Section 4.1.1 of this report at a minimum thickness of $3/8$ inch (9.5 mm). For studs 10 feet (3048 mm) long or longer, a mid-height blocking between studs shall be required.

4.2.4.3 Axial Design: Axial loads applied to the wall assembly shall be limited by the lesser of the following:

1. 1,100 pounds (4895 N) per stud.
2. A maximum of 47.5 percent of the load calculated in accordance with the NDS.
3. Design stress of $0.78 F'_c$.
4. Design stress of $0.78 F'_c$ at a maximum l/d of 33.

4.2.4.4 Fire Separation Distance: When installed in accordance with Section 4.2.4, exterior walls shall have a minimum fire separation distance of 5 feet (1524 mm).

4.3 Type I, II, III or IV Construction:

The stucco system, without EPS, may be installed on exterior walls required to be Type I, II, III or IV construction (IBC, NBBC, SBC) or noncombustible construction (UBC), as follows:

4.3.1 Assembly 1 (Metal Lath):

4.3.1.1 Interior Finish: Interior finish shall consist of $5/8$ -inch-thick (15.9 mm), Type X gypsum board attached as noted for exterior finish.

4.3.1.2 Steel Framing: Minimum $3\frac{5}{8}$ -inch-deep (92 mm), No. 20 gage steel studs [0.035 inch (0.91 mm) thick] shall be spaced a maximum of 16 inches (406 mm) on center.

4.3.1.3 Openings: Wall openings shall be framed with minimum $1/8$ -inch-thick (3.2 mm), tubular aluminum or steel framing.

4.3.1.4 Exterior Finish: One layer of $5/8$ -inch-thick (15.9 mm), water-resistant, Type X gypsum board, complying with ASTM C 79, shall be applied vertically to steel framing with all edges blocked. Fasteners are No. 8 by $1\frac{1}{4}$ -inch-long (32 mm) buglehead screws fastened to board joints at 8 inches (203 mm) on center and intermediate locations at 12 inches (305 mm) on center. All joints shall be taped and treated with joint compound in accordance with Section 22 of ASTM C 840. Intermediate fasteners shall be treated with compound in accordance with Section 22 of ASTM C 840. Weather-protection in compliance with Section 3.2.10 of this report shall be required. StuccoBase shall be applied at a minimum $3/8$ -inch (9.5 mm) thickness as described in Section 4.1.1 of this report. Combustible sheathing, such as fiberboard, plywood, oriented strand board and foam plastic, shall not be used.

4.3.2 Assembly 2 (Metal Lath):

4.3.2.1 Interior Finish: One layer of $5/8$ -inch-thick (15.9 mm), Type X gypsum wallboard, complying with ASTM C 36, shall be vertically applied to steel framing with blocked edges. The wallboard shall be fastened to framing with minimum 1-inch-long (25 mm), No. 8-18, S-12, self-tapping screws spaced 6 inches (152 mm) on center. All board joints shall be taped and treated with joint compound. Fastener heads shall be covered with joint compound.

4.3.2.2 Steel Framing: Steel framing shall be minimum $3\frac{5}{8}$ -inch-deep (92.1 mm), No. 20 gage [0.035 inch (0.91 mm) thick] steel framing. Vertical framing members (studs) shall be spaced a maximum of 16 inches (406 mm) on center.

4.3.2.3 Openings: Wall openings shall be framed with minimum No. 20 gage [0.035 inch (0.91 mm) thick] metal framing.

4.3.2.4 Exterior Finish: One layer of minimum $1/2$ -inch-thick (12.7 mm), water-resistant-core gypsum sheathing shall be attached to the metal framing as described in Section 4.1.3.2 of this report. Combustible sheathing, such as fiberboard, plywood, oriented strand board and foam plastic, shall not be used.

4.3.2.5 Stud Cavity: R-11 fiberglass or rock wool batt, $3\frac{5}{8}$ inches (92.1 mm) thick, shall be sized to friction-fit between studs.

4.3.2.6 Stucco: A water-resistive barrier, as described in Section 3.2.10.1 of this report, shall be applied over the gypsum sheathing with minimum 2-inch (51 mm) horizontal weather laps and 6-inch (152 mm) vertical laps. The lath and StuccoBase shall be applied as noted in Sections 4.1.1 and 4.1.3 of this report.

4.4 Miscellaneous:

4.4.1 Inspection Requirements: Building department inspection of lath installation shall be required prior to application of the coating as noted in Section 109.3.5 of the IBC, Section R109.1.5.1 of the IRC or Section 108.5.5 of the UBC.

4.4.2 Control Joints: Control joints shall be installed as specified by the registered design professional, designer, builder, or exterior coating manufacturer, in that order. In the absence of details, conventional three-coat plastering details shall be used.

4.4.3 Curing: Moist curing shall be required for a minimum of 24 hours after coating application.

4.4.4 Soffits: The system shall be permitted to be applied to soffits, provided the coating is applied over metal lath complying with Section 3.2.5.2 of this report in lieu of wire fabric lath. Metal lath fastening shall comply with the ASTM C 926 or C 1063 (IBC, BNBC, and SBC.), Section R703.6 of the IRC, or Table 25-C of the UBC, except the fastener length shall be increased by the thickness of any substrate.

4.4.5 Sills: The system may be applied to sills at locations such as windows and other similar areas. Sills with depths of 6 inches (152 mm) or less may have the coating and lath applied to any substrate permitted in this report, provided the coating, lath, water-resistive barrier and substrate are installed in accordance with the appropriate sections of this report. Sills with depths exceeding 6 inches (152 mm) shall have substrates of solid wood or plywood. The substrate shall be fastened in accordance with Table 2305.2 of the BNBC, Table 2304.9.1 of the IBC, Table R602.3(1) of the IRC, Table 2306.1 of the SBC or Table 23-II-B-1 of the UBC, and then a double layer of a complying water-resistive barrier shall be applied. The coating, lath, and optional EPS board shall be applied in accordance with Section 4.1.2 of this report.

5.0 CONDITIONS OF USE

The StuccoBase described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

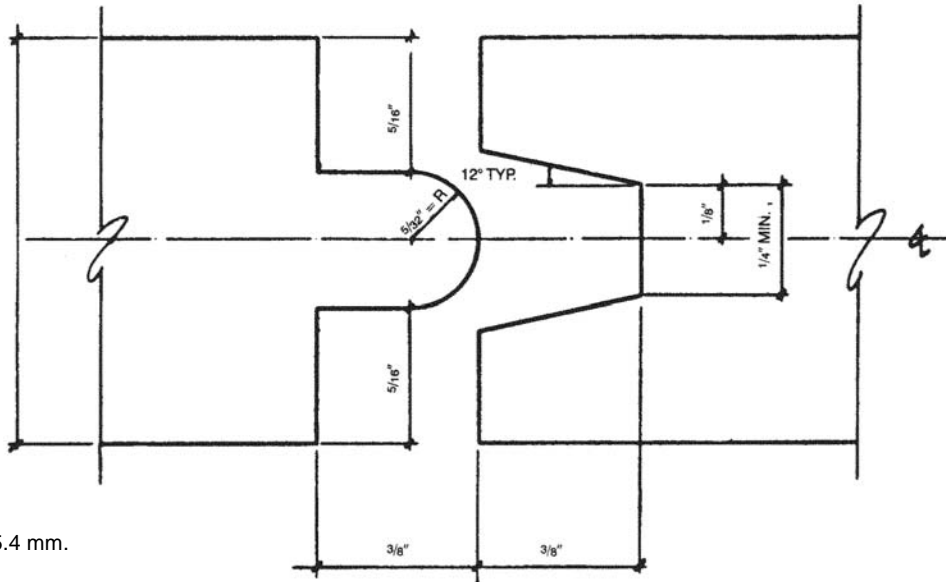
- 5.1 The materials and methods of installation shall comply with this report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacturer's published installation instructions, this report shall govern.
- 5.2 Installation shall be by contractors approved by the additional listee.
- 5.3 The system with metal lath shall be limited to Type V (IBC and UBC), Type 5 (BNBC), and Type VI (SBC), or construction permitted by the IRC, except as noted in Section 4.3 of this report. The use of PermaLath glass fiber lath shall be limited to Type VB under the IBC and buildings constructed under the IRC except as noted in Section 4.2.4 of this report.
- 5.4 The system is one-hour fire-resistance-rated wall assembly when installed in accordance with Section 4.2 of this report.
- 5.5 For walls with foam plastic insulation, the interior of the building shall be separated from the EPS board with a thermal barrier complying with Section 2603.4 of the BNBC, Section 2603.4 of the IBC, Section R318.1.2 of the IRC, Section 2603.5 of the SBC, or Section 2602.4 of the UBC, such as 1/2-inch (12.7 mm) regular gypsum wallboard applied in accordance with ASTM C 840 (BNBC and IBC), Table R 702.3.5 of the IRC, or Table 25-G of the UBC.
- 5.6 An installation card, as shown in Figure 2, shall be left at the jobsite for the owner, and a copy shall be filed with the building department.
- 5.7 The allowable wind load on the system with wood or steel studs spaced a maximum of 24 inches (610 mm) on center is 40 psf (1.92 kPa), positive or negative. Supporting framing shall be adequate to resist the required wind load.
- 5.8 The maximum allowable wind loads on the system incorporating PermaLath glass fiber lath with steel studs and wood studs spaced at a maximum of 16 inches (406 mm) on center are 20.7 psf (0.99 kPa) and 54.0 psf (2.60 kPa), positive or negative, respectively.
- 5.9 Foam plastic shall not be placed on exterior walls of wood construction located within 6 inches (152 mm) of the ground in areas where hazard of termite damage is very heavy in accordance with Section R320.4 of the IRC and Section 2603.3.2 of the SBC.

6.0 EVIDENCE SUBMITTED

- 6.1 Reports of tests in accordance with the ICC-ES Acceptance Criteria for Cementitious Exterior Wall Coatings (AC11), dated October 2003 (editorially revised October 2004).
- 6.2 Descriptive information.
- 6.3 Reports of tests in accordance with ASTM E 119 (UBC Standard 7-1).
- 6.4 Reports of tests in accordance with ASTM E 136 (UBC Standard 2-1).
- 6.5 A quality control manual.

7.0 IDENTIFICATION

- 7.1 The factory-prepared mix shall be delivered to the jobsite in water-resistant bags with labels bearing the following information:
 - a. Company name and address (Senenergy, Finestone, SonoWall Stucco Systems or Acrocrete), and the evaluation report number (ESR-1064).
 - b. Identification of components.
 - c. Weight of packaged mix.
 - d. Storage instructions.
 - e. Maximum amount of water and other components that may be added and conditions that shall be considered in determining actual amount.
 - f. Curing instructions.
 - g. Product name (StuccoBase).
- 7.2 When delivered to the jobsite with sand in a bulk mixer, the bulk-mixer label shall include the information noted in Section 3.2.1 of this report.
- 7.3 Polystyrene foam plastic insulation boards shall be identified in accordance with their respective evaluation reports. Additionally, the board density shall be noted.
- 7.4 Identification of PermaLath shall comply with ICC-ES evaluation report ESR-1511.



For SI: 1 inch = 25.4 mm.

FIGURE 1

INSTALLATION CARD

(Coating system Trade Name)
(Name of coating manufacturer)

Job Address

Evaluation Report ER- _____

Date of Job Completion _____

Plastering Contractor

Name: _____

Address: _____

Telephone No. () _____

Approved contractor as issued by the coating manufacturer _____

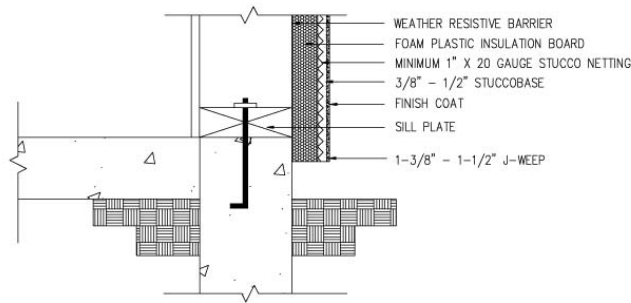
This is to certify that the exterior coating system on the building exterior at the above address has been installed in accordance with the evaluation report specified above and the manufacturer's instructions.

Signature of authorized representative
of plastering contractor

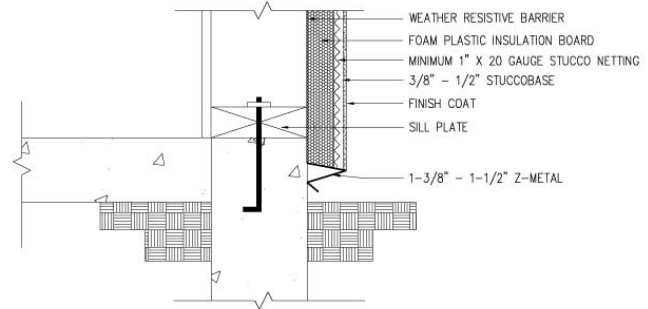
Date

This installation card must be presented to the building inspector after completion of work and before final inspection.

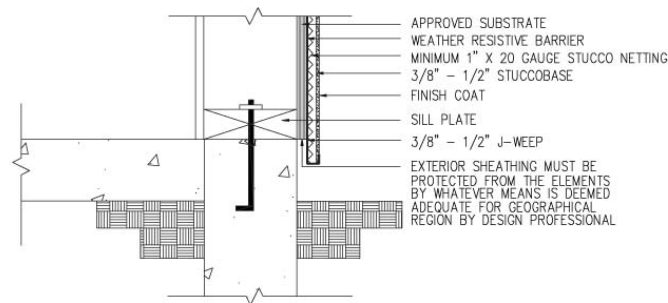
FIGURE 2



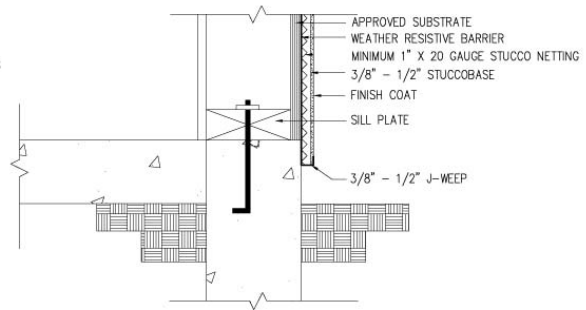
WEEP SCREED - FOAM SUBSTRATE (1)



WEEP SCREED - FOAM SUBSTRATE (2)



WEEP SCREED - SOLID SUBSTRATE (1)

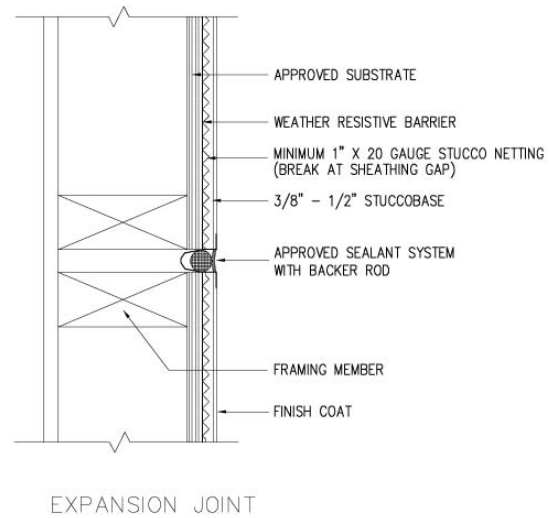
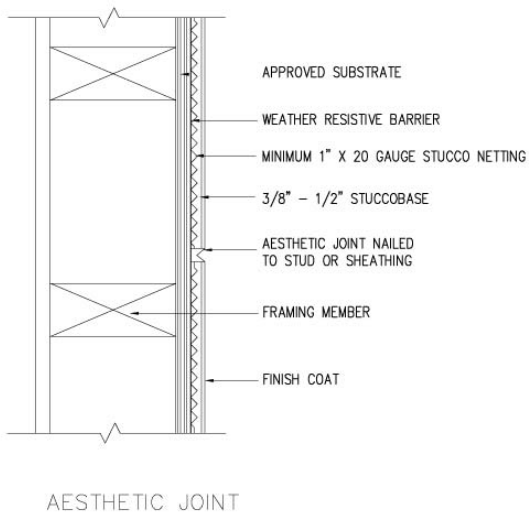
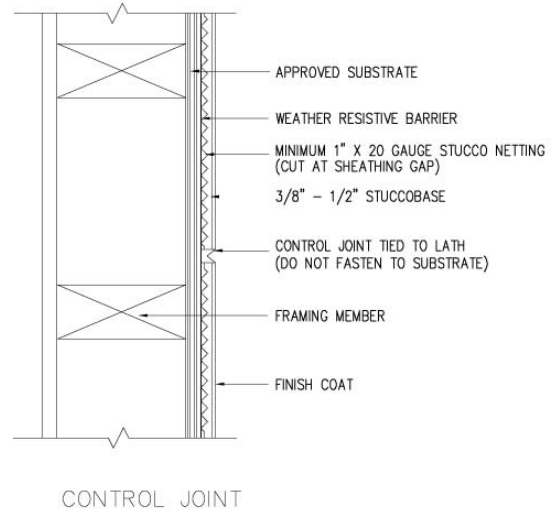
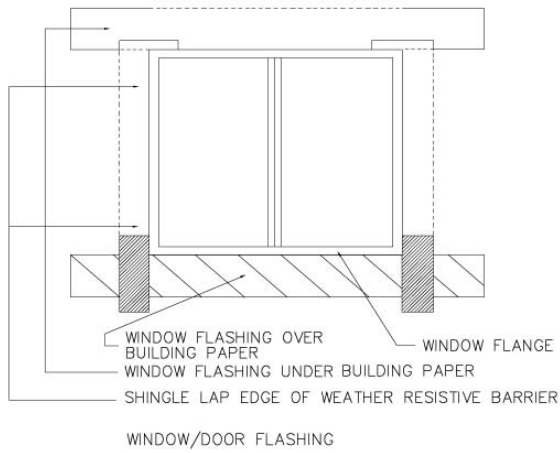


WEEP SCREED - SOLID SUBSTRATE (2)

For **SI**: 1 inch = 25.4 mm.

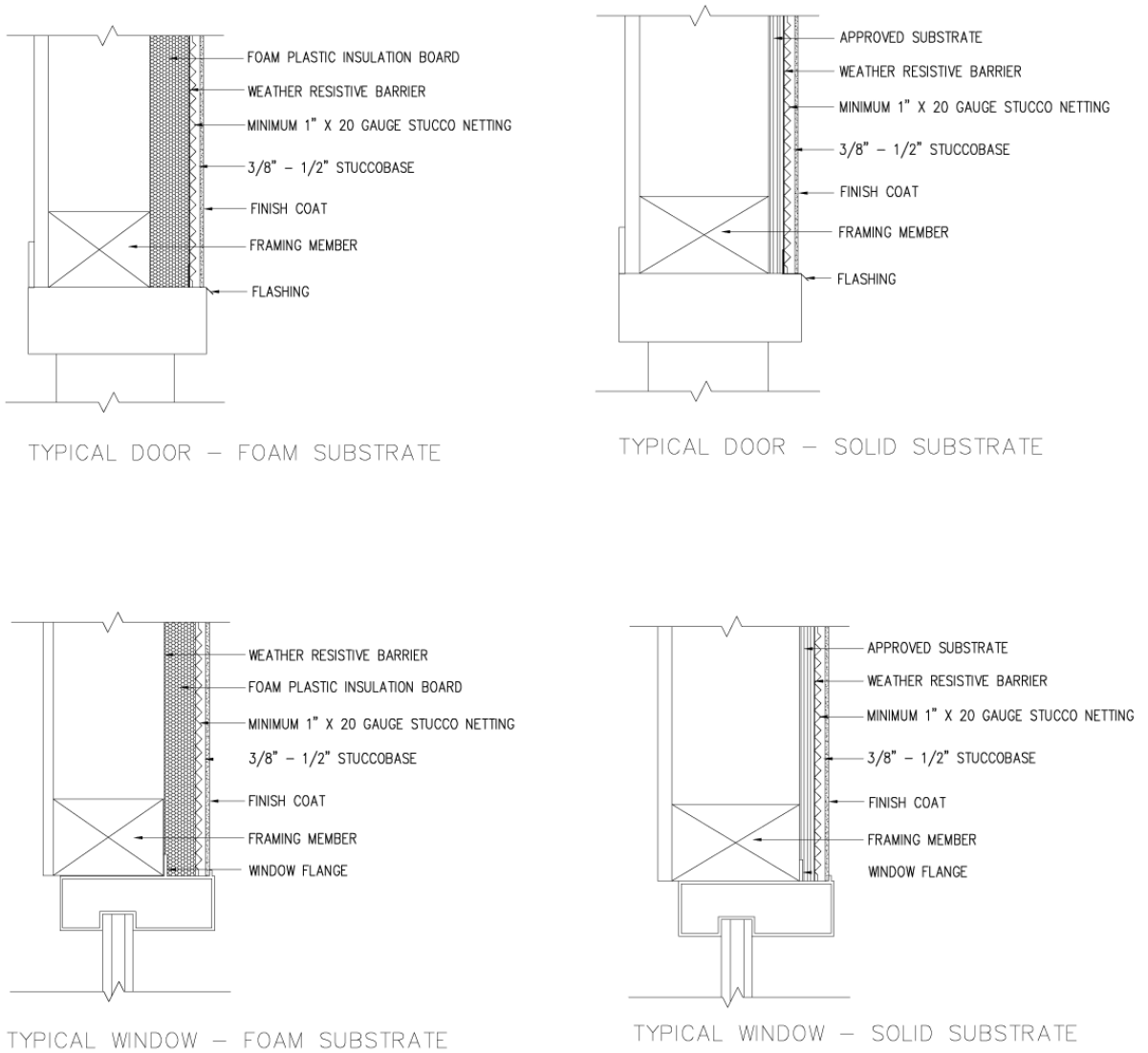
NOTE: When installation is over solid substrates, the water-resistive barrier shall be installed over all substrates (including optional insulation board described in Section 4.1.3 of this report), except in jurisdictions adopting the UBC, where the barrier is permitted to be installed behind the optional insulation board. When installation is over open framing, the water-resistive barrier shall be installed behind the insulation board. See Section 3.2.10.1 of this report.

FIGURE 3—TYPICAL INSTALLATION DETAILS



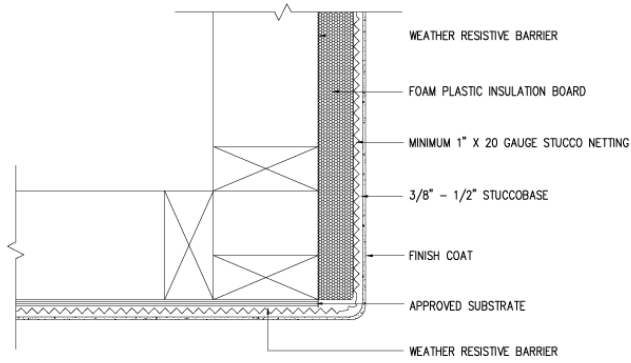
For SI: 1 inch = 25.4 mm.

FIGURE 3—TYPICAL INSTALLATION DETAILS (Continued)

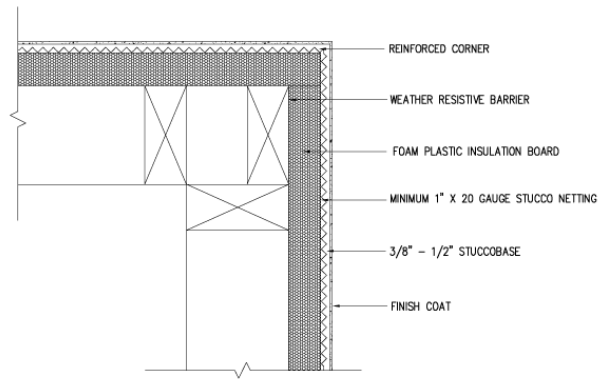


For SI: 1 inch = 25.4 mm.

FIGURE 3—TYPICAL INSTALLATION DETAILS (Continued)

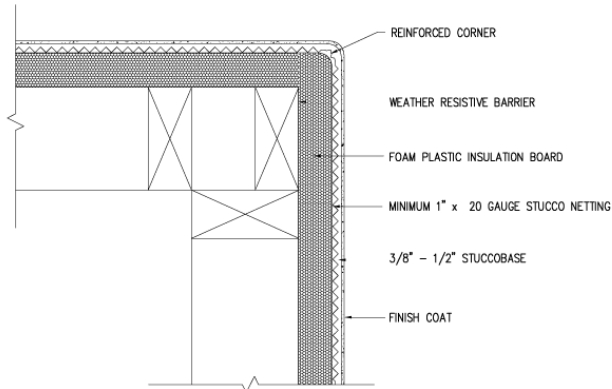


NON-REINFORCED CORNER AT TRANSITION FROM OPEN FRAMING TO SOLID SUBSTRATE WITH STUCCO CAP



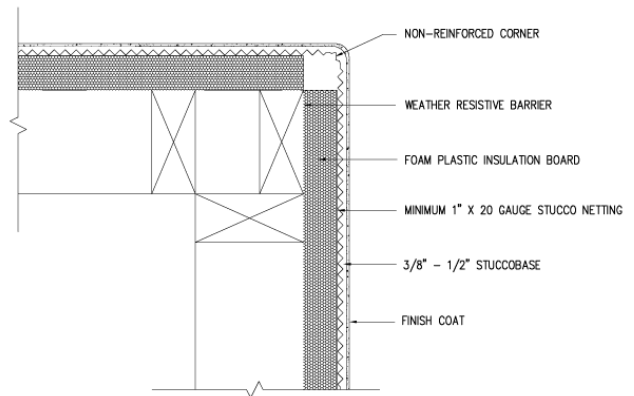
*Reinforced Corner May Be A Second Layer of Stucco Netting, Expanded Metal Lath, Galvanized Metal or Plastic Corner Bead

90 DEGREE REINFORCED CORNER



*Reinforced Corner may be a second layer of stucco Netting or Expanded Metal Lath.

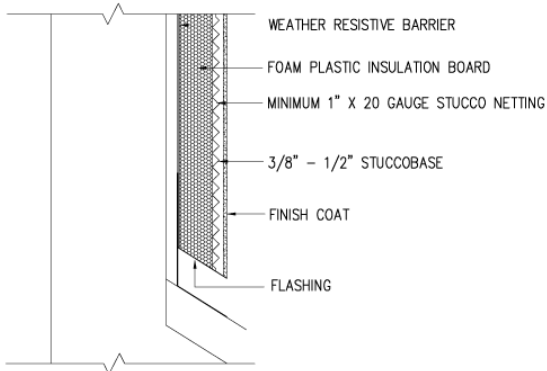
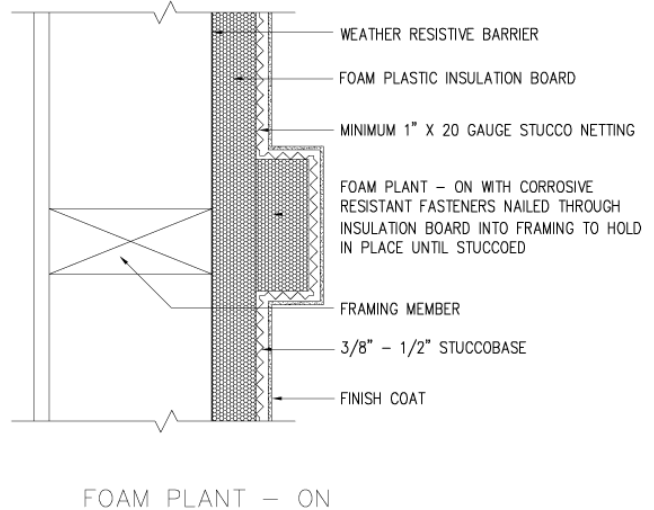
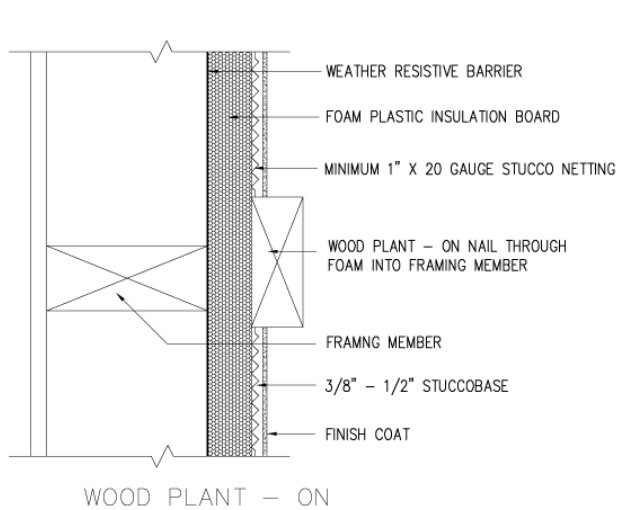
REINFORCED BULLNOSE CORNER



NON-REINFORCED BULLNOSE CORNER

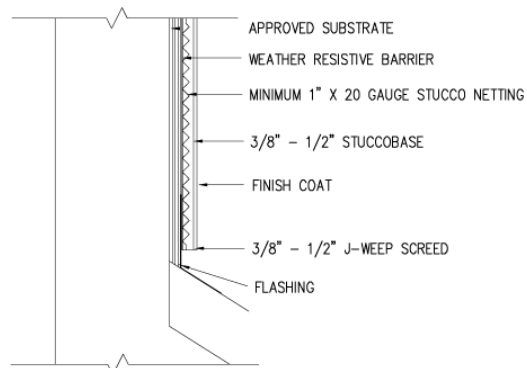
For SI: 1 inch = 25.4 mm.

FIGURE 3—TYPICAL INSTALLATION DETAILS (Continued)



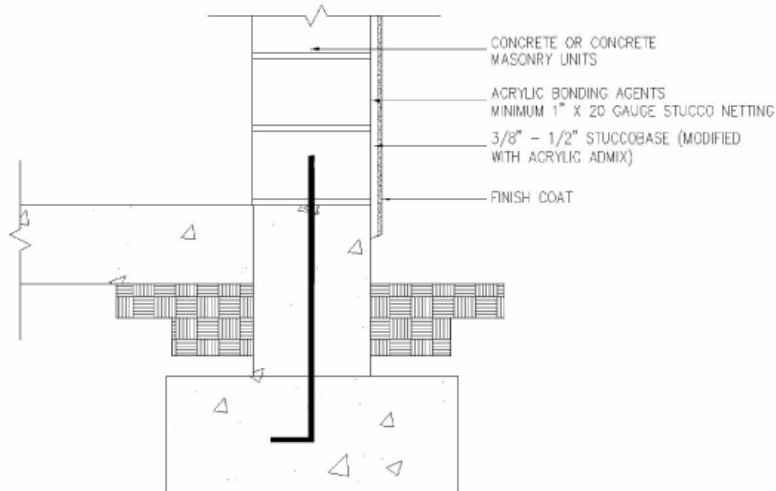
Installation requires only single lap of the weather resistive barrier onto the approved flashing. Flashing materials and installation should be in accordance with local codes.

ROOF TERMINATION AT FLASHING - FOAM SUBSTRATE



Installation requires only single lap of the weather resistive barrier onto the approved flashing. Flashing materials and installation should be in accordance with local codes.

ROOF TERMINATION AT FLASHING - SOLID SUBSTRATE



For SI: 1 inch = 25.4 mm.

DIRECT APPLICATION—CONCRETE OR CMU

ICC Evaluation Service, Inc.
www.icc-es.org

Business/Regional Office ■ 5360 Workman Mill Road, Whittier, California 90601 ■ (562) 699-0543
Regional Office ■ 900 Montclair Road, Suite A, Birmingham, Alabama 35213 ■ (205) 599-9800
Regional Office ■ 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 ■ (708) 799-2305

DIVISION: 09—FINISHES
Section: 09220—Portland Cement Plaster

REPORT HOLDER:

DEGUSSA WALL SYSTEMS, INC.
3550 ST. JOHNS BLUFF ROAD, SOUTH
JACKSONVILLE, FLORIDA 32224
(904) 996-6000
www.degussawallsystems.com

EVALUATION SUBJECT:

STUCCOBASE

ADDITIONAL LISTEES:

ACROCRETE
3550 ST. JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FLORIDA 32224
www.acrocrete.com

FINESTONE
3550 ST. JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FLORIDA 32224
www.finestone.cc

SENERGY
3550 ST. JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FLORIDA 32224
www.senergy.cc

SONOWALL STUCCO SYSTEMS
3550 ST. JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FLORIDA 32224
www.sonowall.cc

PURPOSE OF THIS SUPPLEMENT

This supplement is issued to indicate that the StuccoBase described in master report ESR-1064 complies with the 2001 *Florida Building Code—Building*, when installation is in accordance with the master report on exterior walls of wood or steel frame, concrete or masonry construction.

This supplement expires concurrently with the master report issued on February 1, 2005.