DIVISION: 09 00 00—FINISHES
SECTION: 09 24 00—PORTLAND CEMENT PLASTERING

REPORT HOLDER:
EO SALES, LLC

EVALUATION SUBJECT:
EXTREME ONE COAT STUCCO SYSTEM

“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”

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Fiber-Reinforced Exterior Stucco is a factory-prepared mixture of Type I or Type II portland cement complying with ASTM C150, chopped glass fibers, and proprietary polymer-modified admixture. The stucco mixture is packaged in 80-pound (36 kg) bags. Five gallons (19 L) of water and 215 pounds (97.5 kg) of sand complying with Section 3.2.3 of this report are added to each 80-pound (36.3 kg) bag in the field, and mixed in accordance with the manufacturer’s recommendations.

3.2.2 Extreme One Coat, Field-Blended Exterior Stucco Mixture: Extreme One Coat, Field-Blended Exterior Stucco Mixture is field-prepared mixture consisting of one 94-pound (42.6 kg) bag of Type I or Type II portland cement complying with ASTM C150, 1 gallon (3.8 L) of liquid polymer, one 10 1/2-pound (4.8 kg) bag of polymer powder, approximately 430 pounds (195 kg) of sand complying with Section 3.2.3 of this report and approximately 5 1/2 gallons (20.9 L) of water.

3.2.3 Sand: Sand must be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter. Sampling and testing must comply with ASTM C144 or ASTM C897. Sand must be graded in accordance with ASTM C144 or C897 within the following limits:

<table>
<thead>
<tr>
<th>RETAINED ON U.S. STANDARD SIEVE</th>
<th>PERCENT RETAINED BY WEIGHT + 2 PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4 (4.75 mm)</td>
<td>Minimum: 0</td>
</tr>
<tr>
<td>No. 8 (2.36 mm)</td>
<td>Minimum: 0</td>
</tr>
<tr>
<td>No. 16 (1.18 mm)</td>
<td>Minimum: 0</td>
</tr>
<tr>
<td>No. 30 (600 um)</td>
<td>Minimum: 30</td>
</tr>
<tr>
<td>No. 50 (300 um)</td>
<td>Minimum: 70</td>
</tr>
<tr>
<td>No. 100 (150 um)</td>
<td>Minimum: 95</td>
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</tbody>
</table>

3.2.4 Insulation Board:

3.2.4.1 Expanded Polystyrene: EPS board must have a nominal density of 1.5 pounds per cubic foot (24 kg/m³); and a flame-spread index of 25 or less and a smoke-developed index of 450 or less; and must comply with ASTM C578 as Type II board. Boards installed without sheathing over open framing must be 1 inch to 1 1/2 inches (2.5 to 3.8 mm) thick and must be provided with 1/8-inch (9.5 mm) tongues with compatible grooves for horizontal joints. See Figure 1 for joint details. All boards must be recognized in a current ICC-ES evaluation report. See Section 7.2 for board identification. Over solid substrates, a square-edge foam plastic board with a minimum 1/2-inch (25.4 mm) thickness and a minimum nominal density of 1pcf (16 kg/m³) is permitted except when installation is as part of the water-resistive barrier.
3.3 Lath:

3.3.1 Wire Fabric Lath: Wire fabric lath must comply with the ICC-ES Acceptance Criteria for Metal Plaster Bases (Lath) (AC191). Minimum No. 20 gage (0.035 inch (0.89 mm)), 1-inch-opening (25.4 mm), galvanized steel, woven-wire fabric must be used. Lath must be furred when applied over all substrates. Furring requirements are as set forth in Section 3.3.1. for woven wire lath.

3.4 Gypsum Board:
Water-resistant core-treated gypsum sheathing must comply with ASTM C79 or ASTM C1396. Gypsum wallboard must comply with ASTM C36 or ASTM C1396.

3.5 Fiberboard:
Minimum 1/2-inch-thick asphalt-impregnated fiberboard must comply as ASTM C208, Type IV, wall sheathing.

3.6 Wood Structural Panels:
The panels must be minimum 1/4-inch-thick (9.5 mm) plywood or OSB for studs spaced 16 inches (406 mm) on center, and must be minimum 1/8-inch-thick (6.4 mm) plywood or 1/10-inch-thick (11.1 mm) OSB for studs spaced 24 inches (610 mm) on center. Plywood must be exterior-grade or Exposure 1 complying with U.S. Department of Commerce Product Standard PS-1 or UBC Standard 23-2, as applicable; and OSB must be Exposure 1 complying with U.S. Department of Commerce Product Standard PS-2 or UBC Standard 23-3, as applicable.

3.7 Caulking:
Caulking materials must be either acrylic latex complying with ASTM C834, or must be polyurethane, polyurethane modified, polysulfide, or silyl-terminated polyether elastomeric sealant complying with ASTM C920.

3.8 Weather Protection:

3.8.1 Water-resistant Barrier: A water-resistant barrier is required and must comply with IBC Section 1404.2, IRC Section R703.2 or UBC Section 1402.1, as applicable. Minimum No. 15 asphalt nonperforated felt complying as Type I in accordance with ASTM D226 (IBC 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-resistant Barriers (AC38), is required.

When applied over any wood-based sheathing, the barrier must be one of the following:

1. A minimum of two layers of Grade D kraft building paper as set forth IBC Section 2510.6, IRC Section R703.6.3 or UBC Section 2506.4, or an equivalent recognized in a current evaluation report.

2. One layer of EPS or XPS insulation board having horizontal tongue-and-groove edges as described in Sections 3.4.1 and 3.4.2, respectively, over one layer of Grade D kraft building paper having a minimum water-resistance rating of 60 minutes or a water-resistant barrier recognized in a current ICC-ES evaluation report with a minimum water-resistance rating of 60 minutes.

When Tyvek StuccoWrap, recognized in ESR-2375, is used as the water-resistant barrier, grooved insulation board described in Section 3.2.4.1 is not required. The Tyvek StuccoWrap must be installed as described in ESR-2375.

3.8.2 Vapor Retarder: Protection against condensation must be provided in accordance with 2009 IBC Section 1405.3 (2006 IBC Section 1403.2). Under the 2009 IRC, a vapor retarder must be provided in accordance with Section R601.3 (2006 IRC Section 318.1), unless its omission is permitted under the exceptions in IRC Section R601.3 (2006 IRC Section 318.1).

3.8.3 Flashing: Flashing complying with 2009 IBC Section 1405.4 [2006 IBC Section 1405.3], IRC Section R703.8 or UBC Section 1404.2, as applicable, must be provided. Where membrane flashing is used, flashing must be a self-adhering, flexible rubberized asphalt and polyethylene material, a minimum of 0.030 inch (0.8 mm) thick, shingle-lapped with the water-resistant barrier. Rigid flashing must be sloped towards the exterior with an upturned leg on the interior side and at the ends, and must extend beyond the surface of exterior wall.

3.8.4 Trim and Accessories: All trim, screeds and corner reinforcement must be corrosion-resistant or approved plastic recognized in a current ICC-ES report.

4.0 INSTALLATION

4.1 General:
The exterior cementitious coating must be applied by hand-troweling or machine-spraying in one coat or two coats to a minimum 3/8-inch (9.5 mm) thickness, unless noted otherwise. Nominal thickness around penetrations is 3/8 inch (9.5 mm) backed by framing or blocking. The lath must be embedded in the minimum coating thickness and must not be exposed. The finish coat, if required, must be applied according to the Vail Products recommendations, as applicable. Flashing, corner reinforcement, metal trim and weep screeds must be installed as shown in Figure 2.

The coating must be applied at ambient air temperatures between 40°F and 110°F (4.4°C and 43°C) by applicators listed by Vail Products LLC. The water-resistant barrier must be applied as set forth in Section 3.8.1. An installation card, as illustrated in Figure 3, must be at 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.

4.2 Application over Open Framing:
The water-resistive barrier must be applied, as set forth in Section 3.8.1, over open framing spaced a maximum of 24 inches (610 mm) on center. The insulation board described in Sections 3.4.1 and 3.4.2 must be attached horizontally with tongues faced upward, and must be temporarily held in place with galvanized staples or roofing nails. Vertical butt joints must be staggered at least one stud space from adjacent courses, and must occur directly over studs.

The lath must be applied tightly over the foam plastic insulation board and fastened through the board and water-resistive barrier, to wood studs, sills and plates having a minimum specific gravity of 0.50, at 6 inches (152 mm) on center using No. 11 gage galvanized roofing nails having 1/4-inch-diameter (11.1 mm) heads, or No. 16 gage galvanized staples having a minimum crown width of 5/8 inch (19.1 mm). Minimum fastener penetration into wood framing must be 1 inch (25 mm). Care must be taken to avoid over-driving fasteners. Wall bracing in accordance with IBC Section 2308.9.3, IRC Section R602.10 or UBC Sections 2320.11.3 and 2320.11.4, as applicable, or an acceptable alternative, must be provided. Square wall corners and parapet corners must be covered with metal corner reinforcements attached to the framing members with approved fasteners spaced a maximum of 18 inches (457 mm) on center, or as necessary to hold plumb. Weep screeds must comply with, and be installed at the bottom of the wall in accordance with, IBC Section 2512.1.2, IRC Section R703.6.2.1 or UBC Section 2506.5, as applicable. Galvanized steel, 1/4-inch-thick (35 mm), No. 22 gage [0.025-inch-thick (0.635 mm)], J-shaped trim pieces must be installed at other areas where insulation board is exposed. See Figure 2 for typical installation details. At windows and doors, flashing as described in Section 3.10.3 of this report is required. Holes for hose bibs, electrical panels and other penetrations of substrate surfaces, except those caused by fasteners, must also be flashed. The coating must then be applied as described in Section 4.1.

4.3 Application over Solid Backing:

4.3.1 Fiberboard: Minimum 1/2-inch-thick (12.7 mm) fiberboard sheathing must be installed directly over wood studs having a minimum specific gravity of 0.50 spaced a maximum of 24 inches (610 mm) on center. The fiberboard must be temporarily held in place with corrosion-resistant staples or roofing nails (for wood studs), or self-drilling tapping screws (for steel studs). A water-resistive barrier, optional insulation board, wire-fabric lath and coating must be applied as described for fiberboard in Section 4.3.1.

4.3.2 Gypsum Sheathing: Minimum 1/2-inch-thick (12.7 mm), water-resistant core gypsum sheathing must be installed directly on wood studs spaced a maximum of 24 inches (610 mm) on center, in a manner similar to fiberboard as described in Section 4.3.1 of this report. Gypsum sheathing must be fastened in accordance with ASTM C1280 (IBC), IRC Table R702.3.5 or UBC Table 25-G, as applicable. All walls must be braced in accordance with the applicable code. The water-resistive barrier, optional insulation board, wire-fabric lath and coating must be applied as described for fiberboard in Section 4.3.1. Exposed sheathing edges must be protected.

4.3.3 Wood Structural Panel Sheathing: Wood structural panel sheathing must be applied directly to wood studs under conditions as set forth in Section 3.6 of this report and IBC Table 2308.9.3(3), IRC Table R602.3(1) or UBC Table 23-IV-D-1, as applicable. The sheathing must be attached in accordance with IBC Table 2304.9.1, IRC Table R602.3(1) or UBC Table 23-II-B-1, as applicable. The water-resistive barrier, optional insulation board, wire-fabric lath and coating must be applied as described for fiberboard in Section 4.3.1.

4.3.4 Concrete or Concrete Masonry: Surface preparation must be in accordance with IBC Section 2510.7 or UBC Section 2508.8, as applicable. The surface must be clean, free of dust and other particles, and sufficiently damp to ensure proper bonding. The Extreme One Coat fiber-reinforced coating must be applied directly to the prepared surface at a minimum thickness of 1/16 inch (9.5 mm) in accordance with Section 4.1.

4.4 One-hour Fire-resistive Wall Assembly:
The assembly described in this section is rated for exposure to fire from both sides, unless otherwise noted.

4.4.1 Interior Face: One layer of 1/8-inch-thick (15.9 mm), Type X gypsum wallboard, water-resistant backer board, or veneer base must be applied vertically or horizontally to the interior face of nominally 2-by-4 wood studs spaced a maximum of 24 inches (610 mm) on center. The wall board must be attached using 1/8-inch-long (48 mm), 1/4-inch-diameter-head (6.4 mm), 6d coated nails at 7 inches (178 mm) on center to studs, plates and blocking. All wallboard joints must be backed with minimum nominally 2-by-4 wood framing, and taped and treated with joint compound in accordance with ASTM C840 or GA 216. Fastener heads must also be treated with joint compound in accordance with ASTM C840 or GA 216.
4.4.2 Exterior Face: One layer of minimum \( \frac{5}{8} \)-inch-thick (15.9 mm), Type X, water-resistant core gypsum sheathing, 48 inches (1219 mm) wide, must be applied vertically to studs using \( \frac{1}{2} \)-inch-long (44.5 mm), No. 11 gauge [0.148 inch (3.8 mm) shaft diameter] galvanized roofing nails having \( \frac{1}{4} \)-inch- or \( \frac{1}{2} \)-inch-diameter (11.1 mm or 12.7 mm) heads, spaced at 4 inches (102 mm) on center at board edges and 7 inches (178 mm) on center at intermediate studs and top and bottom plates. A water-resistant barrier is required over the sheathing. The lath and wall coating must then be applied without insulation board as described in Section 4.1.

4.4.3 Axial Load Design: The wood stud axial design stress for the wall assembly calculated in accordance with Sections 3.6 and 3.7 of ANSI AF&PA NDS-05 (IBC and IRC) or ANSI/IFPA NDS-91 (UBC) is limited to 0.78 \( f_{c}^{'e} \), and the maximum stress must not exceed 0.78 \( f_{c}^{'e} \) at a maximum \( I_{t}/d \) ratio of 33.

4.5 Miscellaneous:

4.5.1 Inspection Requirements: Building department inspection is required of lath installation prior to application of the coating, as required by the applicable code.

4.5.2 Control Joints: Control joints must be installed as specified by the architect or designer.

4.5.3 Curing: Moist curing must be provided for a minimum of 24 hours after coating applications. The length and time and most effective procedure for moist curing will depend on climatic and job conditions.

4.5.4 Soffits: The system may be applied to soffits, provided the coating is applied over metal lath complying with Section 3.3.2 in lieu of wire fabric lath. Expanded metal lath fastening must comply with IBC Section 2510.3, IRC Section R703.6.1 or UBC Table 25-C, as applicable, except that the fastener length must be increased by the thickness of any substrate.

4.5.5 Sills: The system may be applied to sills at locations such as windows and 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-resistant barrier and substrate are installed in accordance with the applicable sections of this report. Sills with depths exceeding 6 inches (152 mm) must have substrates of solid wood or plywood. The substrate must be fastened in accordance with the applicable code installed over wood or steel studs spaced a maximum of 24 inches on center is 29 psf (137 kg/m²). Support framing must be adequate to resist the required wind load, with a maximum allowable deflection of \( \frac{1}{240} \) of the span.

5.0 CONDITIONS OF USE

The Extreme One Coat Stucco System 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 must comply with this report and the manufacturer’s instructions. The manufacturer’s published installation instructions must be available at the jobsite at all times during installation. In the event of a conflict between the installation instructions and this report, this report governs.
NOTE: WEATHER-RESISTIVE BARRIER IS USED UNDER FOAM AND OVER ALL OTHER SUBSTRATES.
DO NOT OVERET FASTENERS INTO FOAM.

FIGURE 1—TONGUE-AND-GROOVE FOAM

FIGURE 2—TYPICAL DETAILS FOR EXTREME STUCCO
### INSTALLATION CARD

**Extreme One Coat Stucco System**

EO SALES, LLC

<table>
<thead>
<tr>
<th>Job Address</th>
<th>Date of Job Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Plastering Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td><strong>Address:</strong></td>
</tr>
<tr>
<td><strong>Telephone No. (_____)</strong></td>
</tr>
</tbody>
</table>

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 3**