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The Subcommittee on Evaluation has reviewed the data submitted for compliance with the Standard Building Code® and the International One and Two Family Dwelling Code and submits to the Building Official or other authority having jurisdiction the following report. The Subcommittee on Evaluation, ICC-ES and its staff are not responsible for any errors or omissions to any documents, calculations, drawings, specifications, tests or summaries prepared and submitted by the design professional or preparer of record that are listed in the Substantiating Data Section of this report. Portions of this report were previously included in SBCCI PST & ESI Evaluation Reports #9838 and #9838A.

Holcim's One Coat Stucco concentrate (cementitious material and fiber) is available in 80 pound (36.3 kg) bags or in bulk. An 80 lbs (36.3 kg) bag of Holcim One Coat Stucco concentrate is mixed with 200 lbs (90.7 kg) of fine aggregate complying with ASTM C 897 or ASTM 144 to which potable water is added to obtain a workable consistency.

Holcim also offers a presanded mix packaged in 50 pound (22.7 kg) bags which requires only the addition of potable water at the jobsite.

The material is grey in color, but may be special ordered in selected colors.

REPORT NO.: 9838B

EXPIRES: See the current EVALUATION REPORT INDEX

CATEGORY: EXTERIOR FINISHES

SUBMITTED BY:

HOLCIM (US) INC.
6211 N ANN ARBOR ROAD
DUNDEE, MICHIGAN 48131

When tested in accordance with ASTM E 84, the Holcim One Coat Stucco demonstrated a flamespread index of 0 and a smoke developed index of 5. When tested for freeze-thaw resistance and tested for bond strength, the Holcim One Coat Stucco system did not exhibit any loss of bond strength when applied over gypsum sheathing, OSB sheathing, or plywood sheathing. When tested for accelerated weathering per ASTM G 26 and viewed under 10X magnification, no chalking, cracking, checking, crazing, erosion, or other characteristics that might affect the performance of the Holcim One Coat Stucco system as a wall covering were visible.

1. PRODUCT TRADE NAME

Holcim One Coat Stucco

Table with 2 columns: Licensee, Product Name. Licensee: Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, Georgia 30331, 404/ 346-7055. Product Name: Sto Powerwall Stucco

4.2 Transverse Wind Load Capacities

The Holcim One Coat Stucco was tested as a component of various transverse wind load assemblies. See Section 5.2 of this report for listed assemblies and their allowable transverse wind loads.

2. SCOPE OF EVALUATION

Weather Resistance, Wind Resistance, and Fire Performance

4.3 Fire Resistance Rated Construction

The Holcim One Coat Stucco was tested in accordance with ASTM E 119 as a component of a limited load bearing, wood frame exterior wall assembly. When constructed in accordance with Section 5.3 of this report, these walls are rated at one hour when exposed from either side.

3. USES

The Holcim One Coat Stucco system is used as an exterior wall finish.

5. INSTALLATION

5.1 General

The manufacturer's published instructions and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the jobsite during installation. The instructions within this report and the Standard Building Code will govern if there are any conflicts between the manufacturer's instructions and this report.

4. DESCRIPTION

4.1 General

Holcim One Coat Stucco is a portland cement based formulation incorporating additives and ingredients to promote desired performance characteristics.

*Revised July 2006

ICC-ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

Framing shall be covered with gypsum, OSB, or plywood sheathing. The sheathing shall then be covered with a metal plaster base complying with the ICC-ES Acceptance Criteria for Metal Plaster Bases (Lath) (AC191) and shall be installed in accordance with ASTM C 1063. In applications where the Holcim One Coat Stucco is applied over wood framing and/or wood sheathing materials, moisture protection in accordance with 2303.2 of the code shall be installed between the sheathing and the metal plaster base.

Holcim's One Coat Stucco is applied on the metal plaster base in one application to a thickness of $\frac{3}{8}$ to $\frac{1}{2}$ inches (9.53 to 12.7 mm). The material shall be applied with sufficient material and pressure to completely embed the metal lath. A second pass is required if needed to obtain the required thickness. Application is either by hand-troweling or machine spraying. Texturing (finishing) can be performed as soon as the base coat has stiffened sufficiently to accept the finish (as determined by weather and jobsite conditions). Quality paint or elastomeric coatings are recommended to achieve aesthetic colors and added water resistance for the grey material. If special ordered colored material is being used, it shall be coated with a high quality clear non-gloss sealer to improve long term performance.

5.2 Wind Resistance Rated Assemblies

System No. 1

Wood framing, 2 x 4 or greater and having a specific gravity of 0.55 or greater, at spacings not exceeding 24 inches (610 mm) o.c. shall be covered with $\frac{1}{2}$ inch (12.7 mm) thick gypsum sheathing conforming to ASTM C 79. The gypsum sheathing shall be fastened to the framing with 2 inch (51 mm) long, 11 ga galvanized roofing nails at 4 inches (102 mm) on center around the perimeter and 6 inches (152 mm) on center in the field. A moisture barrier complying with Section 2303.3 of the *Standard Building Code* shall be applied over the gypsum sheathing utilizing a 50% overlap. Galvanized metal lath, 1.75 lb/yd² (1 kg/m²), manufactured from prime quality steel sheets which are split and expanded to form small openings (approximately 13,000 per square yard [10,870 per square meter]) shall be applied over the moisture barrier using 2 inch (51 mm) long, 11 ga galvanized roofing nails at 8 inches on center along each stud and perimeter framing member (minimum framing penetration is 1 inch (25.4 mm)). The lath shall be lapped a minimum of 2 inches (51 mm) between pieces. The lath shall be covered with a $\frac{3}{8}$ inch thick layer of Holcim One Coat Stucco. The allowable wind load for this system is 40 psf (1915 N/m²).

System No. 2

Wood framing, 2 x 4 or greater and having a specific gravity of 0.55 or greater, at spacings not exceeding 24 inches (610 mm) o.c. shall be covered with $\frac{1}{2}$ inch (12.7 mm) exterior plywood sheathing. The sheathing shall be fastened to the framing using construction adhesive and 6d common nails at 6 inches (152 mm) on center around the perimeter and 12 inches (305 mm) on center in the field. A moisture barrier complying with the requirements of Section 2303.3 of the *Standard Building Code* shall be applied over the sheathing utilizing a 50% overlap. Galvanized metal lath, 1.75 lb/yd² (1 kg/m²), manufactured from prime quality steel sheets which are split and expanded to form small openings (approximately 13,000 per square yard [10,870 per square meter]) shall be applied over the moisture barrier using 2 inch (51 mm) long, 11 ga galvanized roofing nails at 8 inches on center along each stud

and perimeter framing member (minimum framing penetration is 1 inch (25.4 mm)). The lath shall be lapped a minimum of 2 inches (51 mm) between pieces. The lath shall be covered with a $\frac{3}{8}$ inch thick layer of Holcim One Coat Stucco. The allowable wind load for this system is 86 psf (4117 N/m²).

System No. 3

Wood framing, 2 x 4 or greater and having a specific gravity of 0.55 or greater, at spacings not exceeding 24 inches (610 mm) o.c. shall be covered with $\frac{1}{2}$ inch (12.7 mm) exterior OSB sheathing. The sheathing shall be fastened to the framing using construction adhesive and 6d common nails at 6 inches (152 mm) on center around the perimeter and 12 inches (305 mm) on center in the field. A moisture barrier complying with the requirements of Section 2303.3 of the *Standard Building Code* shall be applied over the sheathing utilizing a 50% overlap. Galvanized metal lath, 1.75 lb/yd² (1 kg/m²), manufactured from prime quality steel sheets which are split and expanded to form small openings (approximately 13,000 per square yard [10,870 per square meter]) shall be applied over the moisture barrier using 2 inch (51 mm) long, 11 ga galvanized roofing nails at 8 inches on center along each stud and perimeter framing member (minimum framing penetration is 1 inch (25.4 mm)). The lath shall be lapped a minimum of 2 inches (51 mm) between pieces. The lath shall be covered with a $\frac{3}{8}$ inch thick layer of Holcim One Coat Stucco. The allowable wind load for this system is 67 psf (3208 N/m²).

5.3 Fire Rated Assemblies

Walls constructed as follows are fire rated in accordance with ASTM E 119 as limited load bearing, wood frame exterior wall assemblies:

Wall framing shall consist of nominal 2 x 4 No. 2 Douglas Fir-Larch dimension lumber studs at a maximum spacing of 16 inches (400 mm) on center with a single nominal 2 x 4 Douglas Fir-Larch bottom plate, double nominal 2 x 4 Douglas Fir-Larch top plates, and horizontal cross-bracing consisting of nominal 2 x 4 dimension lumber members installed flat between the studs. The cross-bracing shall be spaced at not greater than 60 inches (1.5 m) vertically. All connections shall be fastened with 2-16d common nails.

Structural design load shall not exceed the allowable load of the wall assembly (1100 pounds [4.89 kN] per stud) and walls shall not exceed 10 feet (3 m) in unbraced height. Other grades and species of lumber are permitted provided loads do not exceed the lesser of 1100 pounds per stud or 44.7 % of the allowable load as determined by AFPA's *National Design Specification for Wood Construction*.

The exterior face of the studs shall be covered oriented strand board (OSB) sheathing. The OSB shall be with $\frac{7}{16}$ inch (11.1 mm) thick rated sheathing (24/16, Exposure 1), 48 inches wide by 96 inches long (1.22m x 2.44 m). The OSB sheathing shall be installed horizontally with end joints between successive rows staggered a minimum of two stud spaces. Sheathing shall be fastened to the framing with 6d common nails spaced at 8 inches (200 mm) on center along all studs and plates. Stud cavities shall be insulated with kraft paper faced R-11 fiberglass batts, with the paper facing of the insulation oriented toward the interior of the wall, shall be fastened in place with steel staples. The interior face of the wall shall be clad with $\frac{5}{8}$ inch (15.9 mm) thick, Type X gypsum wallboard, 48 inches wide by 120 inches long (1.22m x 2.7 m). The gypsum wallboard shall be installed horizontally with end joints between successive rows staggered

a minimum of two stud spaces. The gypsum wallboard shall be fastened to the framing with $1\frac{5}{8}$ inch (41.3 mm) long galvanized steel, cup-head drywall nails (head diameter = 0.30 inches [7.62 mm], shaft diameter = 0.09 inches [2.29 mm]) spaced at 7 inches (175 mm) on center along all studs and plates. Joints in the wallboard shall be finished with paper tape and drywall grout. Nail heads shall be treated with drywall grout.

J-Metal, $\frac{3}{8}$ inch (9.53 mm), shall be installed on the outside face of the wall along the perimeter of the wall over the OSB sheathing. The J-Metal shall be attached with $1\frac{3}{4}$ inch (44.5 mm) long galvanized steel roofing nails (head diameter = 0.40 inches [10.2 mm], shaft diameter = 0.125 inches [3.2 mm]) spaced at 12 inches (300 mm) on center. The OSB sheathing shall then be covered with two layers of Type 15 asphalt saturated organic felt, overlapped 4 inches (100 mm) horizontally and 6 inches (150 mm) vertically. The asphalt felt shall be covered with 2.5 lb/yd² (1.4 kg/m²) galvanized, self-furring metal lath conforming to ASTM C 847 or 1.75 lb/yd² (1kg/m²) galvanized prime quality steel sheets which are split and expanded to form small openings (approximately 13,00 per square yard [10,870 per square meter]). The lath shall be lapped a minimum of 2 inches (50 mm) between pieces, attached with $1\frac{1}{2}$ inch (38 mm) long wide crown galvanized steel staples (1 inch [25.4 mm] crown width, 0.56 inch [14.2 mm] wire diameter) spaced at 6 inches (150 mm) on center along all studs and perimeters and 12 inches (300 mm) on center in all fields. The lath shall be covered with a nominal $\frac{3}{8}$ inch thick layer of Holcim One Coat Stucco (80 lbs [36.3 kg] of Concentrate to 200 lbs [90.7 kg] of ASTM C 144 plaster sand with water added to obtain a workable consistency), trowel applied.

6. SUBSTANTIATING DATA

- 6.1 Manufacturer's construction details and application manual.
- 6.2 Report of tests conducted in accordance with ASTM E 84, prepared by the Center for Applied Engineering, Inc., dated October 24, 1996, signed by William M. Gwynn and Stanley D. Gatland II.
- 6.3 Report of freeze-thaw and associated bond tests, prepared by the Center for Applied Engineering, Inc., dated February 21, 1997, signed by Scott Ryan and John Bridenstine, P.E.
- 6.4 Report of accelerated weathering tests conducted in accordance with ASTM G 26, prepared by the Center for Applied Engineering, Inc., dated April 9, 1997, Scott Ryan and John Bridenstine, P.E.
- 6.5 Report of transverse wind load tests, prepared by Miami Testing Laboratory, File Number 96-1202, Report Nos. 17, 18, and 19, dated January 9, 1997, signed by John Bridenstine, P.E.
- 6.6 Report of fire testing conducted in accordance with ASTM E 119, prepared by Omega Point Laboratories, Project No. 15603-100477, dated October 30, 1996, signed by Deggary N. Priest and William E. Fitch, P.E.
- 6.7 Report of fire testing conducted in accordance with ASTM E 119, prepared by Omega Point Laboratories, Project No. 15603-100735, dated March 4, 1997, signed by Herbert W. Stansberry and William E. Fitch, P.E.

- 6.8 Letter prepared by Celotex Testing Laboratory, dated March 13, 1998, signed by John Bridenstine, P.E.
- 6.9 Letter prepared by Omega Point Laboratories, dated January 16, 1998, signed by Deggary N. Priest.

7. CODE REFERENCES

Standard Building Code© - 1999 Edition

Section 103.7	Alternate Materials and Methods
Table 600	Fire Resistance Ratings Required Fire Resistance in Hours
Section 601.2	Classification by Type of Construction
Section 701	General (Fire Resistant Materials and Construction)
Section 1606	Wind Loads
Chapter 17	Structural Test and Inspection
Section 2303.3	Moisture Protection
Section 2504	Application - Gypsum Board and Plaster
Section 2603	Foam Plastic Insulation

International One and Two Family Dwelling Code - 1998 Edition

Section 108	Alternate Materials and Systems
Section 301	Design Criteria
Section 317	Foam Plastic
Section 701	General - Wall Covering
Section 703	Exterior Covering

8. COMMITTEE FINDINGS

The Subcommittee on Evaluation in review of the data submitted finds that, in their opinion, the Holcim One Coat Stucco as described in this report conforms with or is a suitable alternate to that specified in the *Standard Building Code* and the *International One and Two Family Dwelling Code* or Supplements thereto.

9. LIMITATIONS

- 9.1 This Legacy Evaluation Report and the installation instructions, when required by the building official, shall be submitted at the time of permit application.
- 9.2 Quality paints, elastomeric coatings, and/or sealers shall be applied as recommended by Holcim (US) Inc. to achieve added water resistance and improve long term performance. An evaluation of these materials is outside the scope of this report.
- 9.3 This report evaluates Holcim One Coat Stucco in applications over metal plaster base only.
- 9.4 Documentation shall be submitted to the authority having jurisdiction when applying for a permit showing that the design wind load on the Holcim One Coat Stucco system does not exceed the allowable wind load noted above in Section 5.2. Transverse load capacities of combinations of materials not covered in the transverse wind load assemblies noted in Section 5.2 of this report are outside the scope of this report.
- 9.5 Transverse load capacities noted above apply only to the Holcim One Coat Stucco system and its attachment to the wall system. Building walls shall be designed in accordance with the code with deflections under transverse loads limited so that cracking of the Holcim One Coat Stucco system is not induced.
- 9.6 The design load for the one hour fire resistive limited load bearing wood stud wall assembly described in

Section 5.3 of this report shall not exceed 1100 pounds [4.89 kN] per stud and the walls shall not exceed 10 feet (3m) in unbraced height. Use of species and grades of lumber other than No. 2 Douglas Fir-Larch is permitted only when structural design calculations indicate that design loads do not exceed the lesser of 1100 pounds per stud or 44.7 % of the allowable load as determined by AFPA's *National Design Specification for Wood Construction* for the species and grade of lumber used.

- 9.7 In applications where the Holcim One Coat Stucco is applied over wood framing and/or wood sheathing materials, moisture protection in accordance with 2303.2 of the code shall be installed between the sheathing and the metal plaster base.
- 9.8 The Holcim One Coat Stucco system shall be applied by applicators qualified by Holcim (US) Inc.
- 9.9 The Holcim One Coat Stucco system shall not be taken to add to the structural strength of any wall assembly.

10. IDENTIFICATION

All packaging of material covered by this report shall bear the manufacturer's name and/or trademark, the SBCCI Public Safety Testing and Evaluation Services, Inc. Seal, and the number of this report for field identification.

11. PERIOD OF ISSUANCE

SEE THE CURRENT EVALUATION REPORT INDEX FOR STATUS OF THIS LEGACY EVALUATION REPORT.

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