Code Compliance Research Report
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DIVISION: 09 00 00 – FINISHES
Section: 09 24 00 – Portland Cement Plastering

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REPORT SUBJECT:
Omega Diamond Wall and Diamond Wall Pro
Cementitious Exterior Stucco Systems

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2021, 2018 *International Building Code®* (IBC)
- 2021, 2018 *International Residential Code®* (IRC)
- 2022, 2019 *California Building Code* (See Section 9)

NOTE: This report references the most recent code editions cited. Section numbers from earlier editions may differ.

1.2 The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems have been evaluated for the following properties (see Table 1):

- Structural (wind resistance)
- Durability
- Weather protection

1.3 The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems have been evaluated for the following uses (see Table 1):

- Exterior walls in Types I, II, III, IV and V construction; see Section 5.2.5 for use on exterior walls of Types I, II, III and IV Construction.
- Fire-resistance-rated construction when constructed as described in Section 5.2.4.
- Use as a standard three-coat exterior plaster in accordance with IBC Section 2512 and IRC Section R703.7.

2.0 STATEMENT OF COMPLIANCE

The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 Exterior Wall Covering System: The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems are proprietary coatings that are reinforced with wire fabric, metal lath, plastic lath, or glass fiber lath and applied to substrates of foam plastic insulation board, gypsum sheathing board, fiberboard, plywood, or oriented strand board (OSB). The systems may also be applied over concrete or masonry units directly, with or without lath. Where reference is made in this report to the Diamond Wall system, the attribute may also be applied to the Diamond Wall Pro system.

3.2 Omega Diamond Wall Concentrate: Diamond Wall Concentrate is a factory-prepared mixture of portland cement complying with ASTM C150, chopped fibers and proprietary additives, for use in the Diamond Wall System. The mixture is packaged in 80-pound bags. One bag is mixed with 4-1/2 to 7 gallons of water and between 160 to 240 pounds of sand in accordance with the manufacturer's recommendations.

3.3 Omega Diamond Wall Pro: Diamond Wall Pro Concentrate is the polymer-modified version of Diamond Wall Concentrate for use in the Diamond Wall Pro system. The Diamond Wall Pro system uses the same components and mixing ratio as the Diamond Wall system.

3.4 Omega Diamond Wall Sanded: Diamond Wall Sanded is the pre-sanded version of Diamond Wall. One 80-pound bag of Diamond Wall Sanded is mixed with 1 to 2 gallons of water.

3.4 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 C897. Sand must be graded in accordance with ASTM C144 or C897 or within the following limits:

RETAINED ON U.S. STANDARD SIEVE	PERCENT MAINTAINED BY WEIGHT± 2 PERCENT	
	Natural Sand Min. / Max.	Manufactured Sand Min. / Max.
No. 4	0 / 0	0 / 0
No. 8	0 / 10	0 / 10
No. 16	10 / 40	10 / 40
No. 30	30 / 65	30 / 65
No. 50	70 / 90	60 / 80
No. 100	95 / 100	75 / 90

3.5 Insulation Board:

3.5.1 Foam Plastic: Expanded polystyrene (EPS) and extruded polystyrene (XPS) insulation boards must comply with ASTM C578. Polyisocyanurate insulation boards must comply with ASTM C1289. Except as noted in Section 3.5.1.3, the foam plastic boards must have a flame spread index of 25 or less, and a smoke-developed index of 450 or less. All boards must be recognized in a current Research Report acceptable to the code official. See Section 8.0 for board identification.

3.5.1.1 EPS: EPS boards must have a nominal density of 1.5 pcf and must comply with ASTM C578 as Type II. Boards installed over open framing must be 1 to 1-1/2-in. thick and must have 3/8-in. tongues and grooves on horizontal joints. See Figure 1 for joint details.

Over solid substrates, minimum 1-1/2-in. thick, ASTM C578 Type I square-edge foam plastic boards may be used, except when used as part of the water-resistive barrier over wood-based sheathing as described in Section 3.9.1.

3.5.1.2 XPS: XPS boards must be ASTM C578 Type IV, V, or X. Boards installed over open framing must be 1 to 1-1/2-in. thick and must have 3/8-in. tongues and grooves on horizontal joints. See Figure 1 for joint details.

Over solid substrates, XPS boards may be square edged, minimum 1-1/2-in. thick, minimum 1 pcf density, except when used as part of the water-resistive barrier over wood-based sheathing as described in Section 3.9.1.

As an alternative, 1-in.-thick, 1.3 pcf DOW Styrofoam Stuccomate brand XPS insulation boards (see ICC-ES ESR-2142) may be used.

3.5.1.3 Polyisocyanurate: Polyisocyanurate foam plastic boards must comply with ASTM C1289 Type II and be 1-in. to 1-1/2 in. thick. When governed by the IRC and not being used in a fire-rated or noncombustible assembly, the insulation may have a flame-spread index of 75 or less. Horizontal and vertical board joints must be supported by framing or blocking and be limited to nonfire-resistance-rated construction.

Over solid substrates, boards having a minimum thickness of 1/2 in. may be used, except when used as part of the water-resistive barrier over wood-based sheathing as described in Section 3.9.1.

3.6 Lath:

3.6.1 Wire Fabric Lath: Wire fabric lath must comply with ICC-ES AC191 and must be minimum No. 20 gage (0.035 in.), 1-in. galvanized steel, woven-wire fabric lath. Furring must comply with the following requirements:

- When maximum total coating thickness is 1/2 in. or less, the body of the lath must be furred a minimum of 1/8 inch from the substrate after installation.
- When total coating thickness is greater than 1/2 in., No. 17 gage (0.058 in.) by 1-1/2-in. woven-wire fabric lath must be used. The body of the lath must be furred a minimum of 1/4 in. from the substrate after installation.

3.6.2 Metal Lath: Metal lath must comply with ICC-ES AC191. Furring requirements are as set forth in Section 3.6.1.

3.7 Sheathing:

3.7.1 Gypsum Board: Gypsum board and water-resistant core gypsum sheathing must comply with ASTM C 1396 or glass-mat gypsum sheathing per C1177.

3.7.2 Fiberboard: Minimum 1/2-in.-thick fiberboard must comply as ASTM C 208, Type IV, wall sheathing in accordance with IBC Section 2303.1.6.

3.7.3 Wood Structural Panels: Wood structural panels must comply with IBC Sections 2303.1.5, 2304.6.1 or IRC Section R602.3. Plywood must be exterior grade or

Exposure 1 and comply with DOC PS-1, and OSB must be Exposure 1 and comply with DOC PS-2.

3.8 Caulking: Acrylic latex caulking materials must comply with ASTM C 834, or polyurethane, polyurethane modified, polysulfide, or silyl-terminated polyether elastomeric sealant complying with ASTM C920.

3.9 Weather Protection:

3.9.1 Water-resistive Barrier: Application of the water-resistive barrier must comply with IBC Section 1403.2 or IRC Section R703.2. The water-resistive barrier must be a minimum of one layer of either (1) No. 15 asphalt felt, complying with ASTM D 226, Type I, or (2) a water-resistive barrier recognized in a current Research Report as equivalent to ASTM D 226, Type I or better.

When applied over any wood-based sheathing, the water-resistive barrier must comply with IBC Section 2510.6 or IRC Section R703.7.3 or be one layer of insulation board, having horizontal tongue-and-groove edges as described in Section 3.5, over one layer of Grade D kraft building paper having a minimum water-resistance rating of 60 minutes, or an equivalent barrier recognized in a current research report.

3.9.2 Vapor Retarder: A vapor retarder complying with IBC Section 1404.3 or IRC Section R702.7 must be provided, unless its omission is permitted under the exceptions noted in IBC Section 1402.2 or IRC Section R703.1.

3.9.3 Flashing, Trim and Accessories: All flashing, trim, weep screeds and corner reinforcement shall comply with IBC Section 1404.4 and IRC Section R703.4. Rigid flashing must comply with Section 1404.4 of the IBC and must be sloped towards the exterior, with an upturned leg on the interior side and at the ends. Flashing must extend beyond the surface of the exterior wall.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Wind Resistance:

Allowable wind load for installation over open framing for wood studs (minimum specific gravity of 0.50, such as Douglas fir-larch) or min. No. 25 gage steel studs spaced a maximum of 24 inches on center is 35 psf positive or negative.

Allowable wind load for installation over open framing for wood studs (minimum specific gravity of 0.42, such as spruce-pine-fir) spaced a maximum of 24 inches on center, is 29 psf positive or negative.

Allowable wind load for installation over wood structural panel sheathing using alternate fastener spacing and various wood species shown in Tables 2 and 3, the allowable wind load is 35 psf positive or negative.

Lath must be attached to wood framing with 1-1/2 in. end and side laps using No. 11 gage galvanized roofing nails or No. 16 gage corrosion-resistant staples spaced maximum 6 in. on center, with minimum 1-in. penetration into framing except when following Tables 2 or 3.

Lath must be applied to steel framing with 1-1/2 in. end and side laps using minimum No. 8 Type S corrosion-resistant drywall screws with 1-in. diameter washers, or with No. 8 corrosion-resistant screws having 3/8-in. diameter pan heads spaced at 7 in. on center, with minimum 1/2-in. penetration of studs.

Support framing must be adequate to resist the required wind load, with a maximum allowable deflection of 1/240 of the span.

Allowable wind loads are applicable to wind design pressure derived from allowable stress design wind speed (V_{asd}) per Section 1609.3.1 of the IBC.

5.0 INSTALLATION

5.1 General: The Diamond Wall one-coat stucco systems must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the installation instructions must be available on the jobsite during installation.

5.2 Application:

5.2.1 General:

The exterior cementitious coating may be applied by hand-troweling or machine-spraying, in one coat or two coats, to a minimum thickness of 3/8 in., unless noted otherwise. The coating must be backed by framing around penetrations. The lath must be embedded in the

minimum coating thickness and may be exposed. The finish coat must be applied in accordance with Omega Products International instructions. Flashing, corner reinforcement, metal trim and weep screeds must be installed as per manufacturer's instructions. The coating must be applied at ambient air temperatures between 40°F and 120°F.

The coating must be applied by applicators approved by Omega Products International.

An installation card, as shown in Figures 2 and 3 of this report, must 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.

For installation details, see the Omega Products International website at www.omega-products.com.

5.2.2 Application on Framed Walls: Insulated systems may be installed over open framing and over solid sheathing. Uninsulated systems must be installed over solid sheathing. Sheathing must be installed in accordance with the code except where more restrictive requirements are specified in Section 5.2.5 or 5.2.6 of this report. Wall framing must be designed in accordance with the applicable code.

5.2.3 Application Over Concrete and Masonry:

5.2.3.1 General: The water-resistive barrier may be omitted when the stucco is installed directly over concrete or unit masonry substrates.

5.2.3.2 Application without Lath: Surface preparation of concrete and masonry must be in accordance with IBC Section 2510.7. The coating must be applied directly to the prepared surface at a minimum nominal thickness of 3/8 inch in accordance with Section 5.2 of this report.

5.2.3.3 Application with Lath: Lathing and furring used to receive stucco must be installed and conform with the Omega Products International installation guide. Fasteners used to install the lath must be approved. The lath must be fastened in vertical rows, a maximum of 24 inches on center. Fastener spacing in each row must be a maximum of 7 inches. The coating must be applied in accordance with Section 5.2 of this report.

5.2.4 Fire-Resistance-Rated Wall Assemblies: See Table 4.

5.2.5 Exterior Walls of Type I, II, III, or IV Construction: See Table 5.

5.2.6 Drainage:

5.2.6.1 Unbacked EPS: A water-resistive barrier described in Section 3.9.1 is required and must be applied between the EPS and framing.

5.2.6.2 Solid Sheathing: Drainage is provided either by either of the following methods:

- EPS insulation having vertical grooves, 1/4-in.-wide by 1/8-in.-deep, spaced at a maximum of 12 in. on the back face of the boards as shown in Figure 1, together with a water-resistive barrier described in Section 3.9.1.
- Tyvek® Stucco Wrap® or Tyvek® Drain Wrap (ICC-ES ESR-2375), installed between the flat EPS boards and the sheathing.

5.2.7 Miscellaneous:

5.2.7.1 Inspections: Lath inspections shall be made in accordance with IBC Section 110.3.5 and IRC Section R109.1.5.1.

5.2.7.2 Control Joints: Control joints must be installed as specified by the registered design professional, designer, or builder, in that order.

5.2.7.3 Curing: Curing must be in accordance with Omega Products International application instructions.

5.2.7.4 Soffits: For application of the system to soffits, the coating must be applied over metal lath complying with Section 3.6.2. Metal lath fastening must comply with ASTM C1063 or IRC Section R703.7, except the fastener length must be increased by the thickness of any substrate. Lath selection must be based on ASTM C1063, Table 1.

5.2.7.5 Sills: For application of the system to window sills and other similar areas, sills with depths of 6 inches 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 as required in this report. Sills with depths exceeding 6 inches must have substrates of solid wood or plywood. The substrate must be fastened in accordance with the code and must be covered with two layers of an approved water-resistive

barrier. The coating, lath, and optional EPS board must be applied in accordance with Section 5.2.2 of this report.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 Installation must be by qualified contractors acceptable to Omega Products International.

6.3 For walls with foam plastic insulation, the interior of the building must be separated from the EPS board with a thermal barrier complying with IBC Section 2603.4 or IRC Section R316.4, such as 1/2-in.-thick regular gypsum wallboard applied in accordance with the applicable code.

6.4 An installation card, as shown in Figure 2, must be left at the jobsite for the owner, and a copy must be filed with the building department.

6.5 Foam plastic must not be placed on exterior walls of wood construction located within 6 inches of the ground in areas where hazard of termite damage is very heavy in accordance with IBC Section 2603.8 or IRC Section R318.4 of the IRC.

6.6 The Diamond Wall one-coat stucco system components are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with the ICC-ES Acceptance Criteria for Cementitious Exterior Wall Coatings (AC11), January 2013 (editorially revised May 2018).

7.2 Reports of tests in accordance with ASTM E119, ASTM E136 and NFPA 285.

7.3 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

8.0 IDENTIFICATION

The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems are identified with the manufacturer's name (Omega Products International) and address, weight of packaged mix, storage instructions maximum amount of water and other components that may be added and conditions that must be considered in determining actual amount, curing instructions, the product name, the Intertek Mark as shown below, the Intertek Control Number and the Code Compliance Research Report number (CCRR-0467).

Insulation boards must be labeled in accordance with their respective Research Report.

9.0 CALIFORNIA BUILDING CODE

The Omega Diamond Wall and Diamond Wall Pro one-coat stucco systems described in Sections 2 through 7 of this report comply with the 2022 and 2019 editions of the *California Building Code* and *California Residential Code*. Section numbers in the CBC and CRC correspond with the referenced section numbers in the IBC and IRC, respectively.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – PROPERTIES EVALUATED

Properties	2021 International Building Code	2021 International Residential Code
Wind resistance	1609	R301.2.1
Installation	2512	R703.7
Fire-resistance-rated construction	703.2	R302
Weather protection	1402.2 2512	R703.2 R703.7.3
Exterior walls of Types I, II, III and IV construction	2603.5	Not Applicable

Section numbers in earlier codes may differ

TABLE 2 - LATH ATTACHMENT - WOOD STRUCTURAL PANEL SHEATHING OVER WOOD FRMAING WITH HALF-INCH FOAM PLASTIC INSULATION

Wood Species	Specific Gravity	Fastener Spacing (inches)				
		Staple Gage				
		16	15	14	13	12
Douglas fir-larch	0.50	6	6	6	6	6
Douglas fir-South	0.46	6	6	6	6	6
Western hemlock or Western hemlock-South	0.47	6	6	6	6	6
Hem-fir-South	0.46	6	6	6	6	6
Hem-fir	0.43	5	6	6	6	6
Spruce-pine-fir	0.42	4	5	6	6	6
Western woods	0.36	4	4	4	5	5

[1]Wood structural panel sheathing must be fastened to framing with fasteners at 6 inches on center.
[2]Fasteners must penetrate 1 inch into sheathing and framing.
[3]No. 11 gage roofing nails may be used as an alternative to No. 16 gage staples.

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TABLE 3 - LATH ATTACHMENT - WOOD STRUCTURAL PANEL SHEATHING OVER WOOD FRAMING WITH ONE-INCH FOAM PLASTIC INSULATION

Wood Species	Specific Gravity	Fastener Spacing (inches)				
		Staple Gage				
		16	15	14	13	12
Western hemlock	0.47	4	4	4	5	6
Western hemlock-South	0.47	4	4	5	6	6
Hem-fir-South	0.46	4	4	4	5	6
Hem-fir	0.43	4	4	4	5	6
Spruce-pine-fir	0.42	4	4	5	5	6
Western woods	0.36	3	3	3	3	4

[1]Wood structural panel sheathing must be fastened to framing with fasteners at 6 inches on center.
[2]Fasteners must penetrate 1 inch into sheathing and framing.
[3]No. 11 gage roofing nails may be used as an alternative to No. 16 gage staples.

TABLE 4 – ONE-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES

System No.	Interior Finish	Framing	Exterior Finish			
			Sheathing	Insulation	Coating	Axial Loads
1	5/8-in. Type X gypsum board, vertical or horizontal, all joints must be backed; attached with 1-7/8-in.-long, galvanized steel nails (ASTM C514) having a 1/4-in. head, spaced at 7-in. o.c.; joints and nail heads must be treated[1]	Min. 2 x 4 wood framing, max. 24 in. oc	5/8-in. Type X gypsum sheathing, vertical; attached to framing No. 11 gage galvanized roofing nails with min. 7/16-in. heads, spaced 4-in. o.c. on the perimeter and 7-in. o.c. at intermediate framing	None	Min. 3/8-in.-thick Diamond Wall one-coat stucco with metal lath attached per 5.2	See Note 2
2	5/8-in. Type X gypsum board, horizontal, all joints must be backed; attached with 5d gypsum wallboard nails, spaced at 6-in. o.c.; joints and nail heads must be treated[1]	Min. 2 x 4 wood framing 16 in. oc; R-13 mineral wool insulation in stud cavities. Framing covered with water-resistive barrier.	None	Min. 1-in. EPS	Min. 3/8-in.-thick Diamond Wall one-coat stucco with min. 1 x 20 ga. wire fabric mesh attached per 5.2 with fasteners max. 6 in. oc. Lath must have min. 2-in. overlap.	See Note 3
3	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-in.-long, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated[1]	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water-resistive barrier.	None	Min. 1-in., 1.5 pcf EPS or Dow Stuccomate XPS (see ICC-ES ESR-2142), vertical over studs	Min. 3/8-in.-thick Diamond Wall one-coat stucco with min. 1 x 20 ga. wire fabric lath attached with 2-in. No. 16 gage staple having 15/16-in. crowns, or 2-1/4-in. nails having 0.125-in. shanks and 0.355-in. heads, spaced at 6 in. oc.	See Note 4

4	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-in.-long, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated[1]	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water-resistive barrier.	Min. 7/16-in. OSB, 15/32-in. plywood or 1/2-in. water-resistant-core gypsum sheathing installed vertically with 2-3/8-in. sinker nails (0.113-in shaft, 0.266-in. head) spaced at 8-in. oc. Vertical joints must be backed. Water-resistive barrier over sheathing.	None	Min. 3/8-in.-thick Diamond Wall one-coat stucco with min. 1 x 20 ga. wire fabric lath attached to studs with 2-in. No. 16 gage staples having 15/16-in. crowns, or 1-1/4-in. nails having 0.125-in. shanks and 0.355-in. heads, spaced at 6 in. oc.	See Note 4
5	5/8-in. Type X gypsum board, vertical or horizontal, vertical joints must be backed; attached with 1-5/8-in.-long, 0.100-in. steel-cup-head nails or No. 6 bugle-head screws (0.300-in. head), spaced at 8-in. o.c.; joints and nail heads must be treated[1]	2 x 4 or 2 x 6 wood framing, max. 24 in. oc; R-11 fiberglass (2 x 4 walls) or R-19 fiberglass (2 x 6 walls) insulation in stud cavities; framing covered with water-resistive barrier	Min. 3/8-in. OSB, 13/32-in. plywood or 1/2-in. water-resistant-core gypsum sheathing installed vertically with 2-3/8-in. sinker nails (0.113-in shaft, 0.266-in. head) spaced at 8-in. oc. Vertical joints must be backed. Water-resistive barrier over sheathing.	Min. 1-in. EPS or Dow Stuccomate XPS (see ICC-ES ESR-2142), vertical over studs	Min. 3/8-in.-thick Diamond Wall one-coat stucco with min. 1 x 20 ga. wire fabric lath attached to studs with 2-in. No. 16 gage staples having 15/16-in. crowns, or nails of sufficient length to penetrate framing a min. of 1 in., having 0.125-in. shanks and 0.355-in. heads, spaced at 6 in. oc.	See note 4

Note 1: All gypsum board joints must be taped and treated with joint compound in accordance with ASTM C 840. Fastener heads must be treated with joint compound in accordance with ASTM C 840.

Note 2: Axial loads applied to the wall assembly must be limited by the lesser of the following:
- Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS
- Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7 of the NDS

Note 3: Axial loads applied to the wall assembly must be limited by the lesser of the following:

• 1,100 pounds per stud
• Maximum 58 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS
• Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS
• Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7 of the NDS

Note 4: Axial loads applied to the wall assembly must be limited by the lesser of the following:
• 1,100 pounds per 2 x 4 stud; 3,000 pounds per 2 x 6 stud
• For 2 x 4 construction, a maximum of 51.3 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS
• For 2 x 6 construction, a maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS
• Design stress of 0. 78 F'c calculated in accordance with Sections 3.6 and 3. 7 of the NDS
• Design stress of 0.78 F'c at a maximum slenderness ratio (le/d) of 33 calculated in accordance with Sections 3.6 and 3.7 of the NDS

TABLE 5 – NFPA 285-COMPLYING ASSEMBLIES

Wall Component	Material Options
Interior Sheathing	5/8-inch Type X gypsum wallboard.
Base Wall System (Select One)	1. Fire Retardant-Treated (FRT) wood studs: min. 2x4, max. 24 in. on center spacing. 2. Steel Stud Framing: min. 3-5⁄8-in. depth, min. 20 ga., max. 24 in. on center spacing, with lateral bracing every 4 ft. vertically. 3. Concrete: cast-in-place or pre-cast, min. 2 in. thick. 4. Concrete Masonry Units: min. 4 in. thick.
Floor Line Firestopping (Select One)	1. If a fire-resistant-rated floor or floor/ceiling assembly is required, install an ASTM E2307 rated fire stop joint assembly. 2. Install 4 in., 4 pcf density mineral wool fire stop friction fit or installed with Z-clips or equivalent, continuously at each floor line and/or in each stud cavity if the stud framing is continuous past the floor line.
Cavity Insulation (Select One)	1. None 2. Use any noncombustible cavity insulation (faced or unfaced) complying with the applicable code, including mineral fiber or fiberglass batt insulation.
Exterior Sheathing (Select One)	1. Minimum 1/2-in. exterior grade gypsum sheathing complying with the applicable code. 2. 5/8-in. Type X exterior grade gypsum sheathing complying with the applicable code. 3. Min. 1/2-in. Fire Retardant-Treated (FRT) plywood sheathing complying with the applicable code. Note: A layer of Fire-retardant-treated (FRT) wood sheathing may be used between the gypsum sheathing and studs.
Water-Resistive Barrier (Select One)	1. Omega AkroGuard Air and Water-Resistive Barrier System. See CCRR-0465. 2. Any water-resistive barrier complying with IBC Section 1403.2 or IRC Section 703.2 and shown to have both of the following: • a peak heat release rate of less than 150 W/m2, a total heat release of less than 20 MJ/m2 and an effective heat of combustion of less than 18 MJ/kg when tested on specimens at the thickness intended for use, in accordance with ASTM E1354, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2 • a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 of UL 723, with test specimen preparation in accordance with ASTM E2404
Rigid Foam Board (Select One)	1. None 2. EPS board with a nominal density of 1.5 pcf, a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723; and must comply with ASTM C578 as Type II. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in.

	3. XPS board with a nominal density of 1.5 pcf, a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723; and must comply with ASTM C578 as Type IV, V, or X. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in. 4. Polyisocyanurate foam plastic board must comply with ASTM C1289 as Type II, have a nominal density of 2 pcf, a maximum flame-spread index of 25 or less, and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL7 23. All boards must be recognized in a current third-party evaluation report. Board thickness shall be 1/2- to 2-in.
Lath (Select One)	Lath Specifications: 1. Woven Wire (20-gauge): Nominal No. 20 gauge [0.035 inch], 1-in. opening, galvanized steel per ASTM C1032. 2. Woven Wire (17-gauge): Nominal No. 17 gauge [0.058 inch], 1-1/2-in. opening, galvanized steel per ASTM C1032. 3. Welded Wire: Nominal No. 16 gauge [0.065 inch], 2-in.-by-2-in. opening, galvanized steel per ASTM C933. 4. Metal Lath: Per ASTM C847 (IBC or IRC) or with Table 25-B of the UBC as applicable. Lath fastener for wood framing: 1. No. 10 woodscrews with a minimum 0.43-in. diameter head or washer. 2. No. 11 gauge galvanized roofing nails. 3. No. 16 gauge corrosion-resistant staples with a minimum crown width of 7/16 in. Fasteners shall be spaced a maximum of 6 in. on center with min. 1-in. penetration into the studs. Lath fastener for steel studs: 1. No. 10 self-tapping screws with a minimum 0.43-in. diameter head or washer. Screw length shall be sufficient to penetrate the framing member a minimum of 1/2-in.
Stucco	Min. 3/8-in. Diamond Wall stucco system
Finish	Any acrylic or cement-based finish
Openings	The rigid foam board must be terminated with a minimum 25-gauge steel casing bead to encapsulate the foam board. The perimeter of the opening must be covered with min. 25-gauge steel flashing, or equivalent, covering the entire width of the opening with a 2-in. leg on the interior side of the assembly.

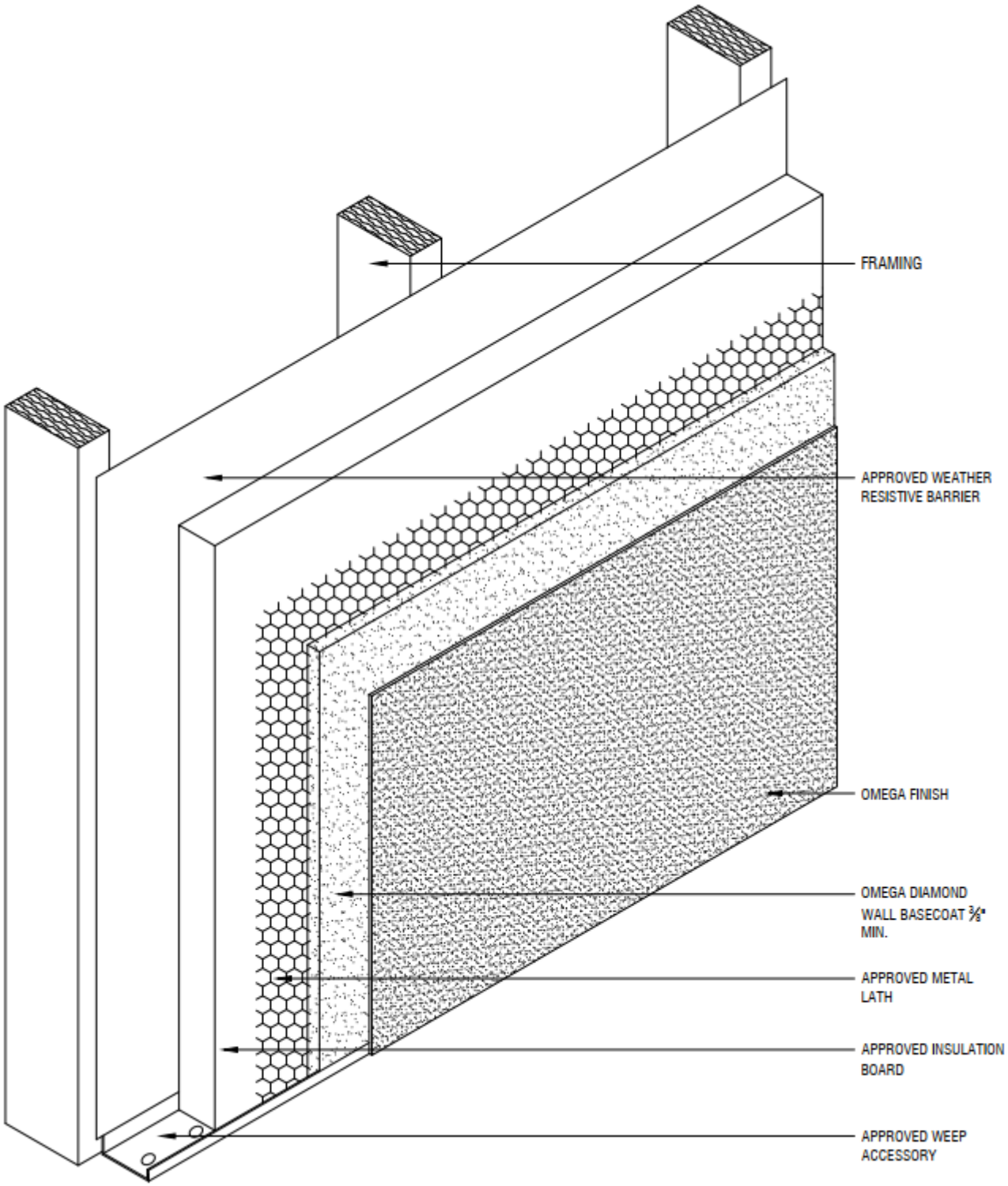

Figure 1A - Typical wall construction

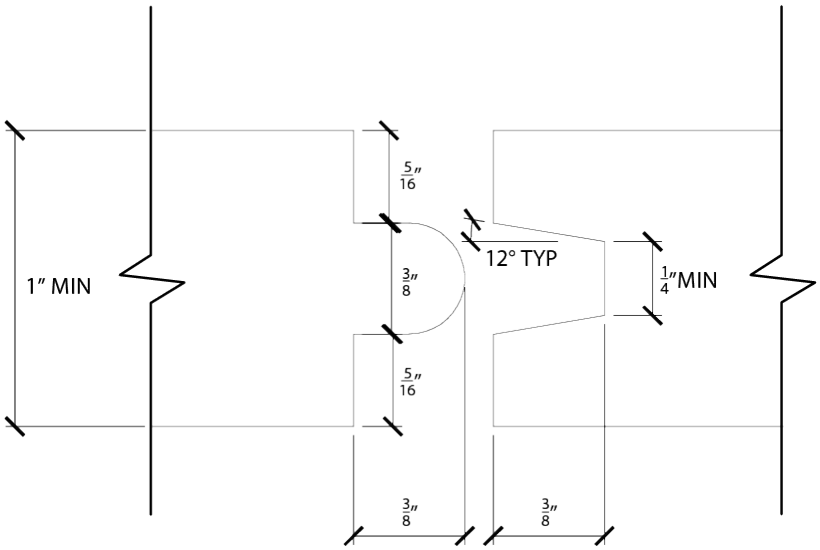

Figure 1B – Tongue and Groove Detail for Insulation Boards

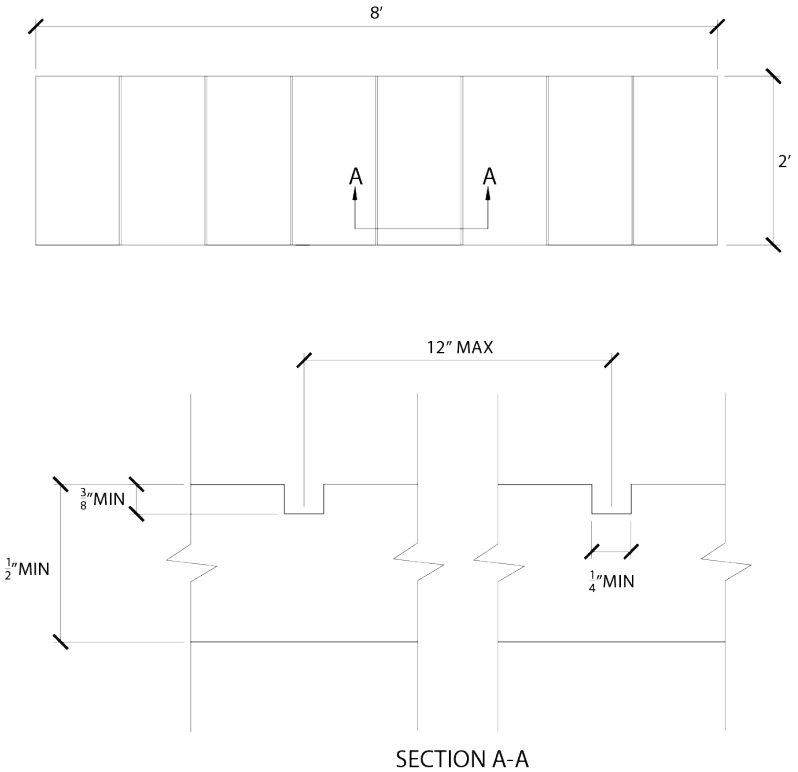

Figure 1C - Grooved insulation boards

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

Job Address

_____

_____

_____

Intertek CCRR Report Number_____

Date of Job Completion _____

Plastering Contractor

Name: _____

Address: _____

Telephone No.: (_____)_____

Approved contractor number 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

(Company name of report holder)
(Address and telephone number)

DECLARATION

Project Address: _____ **Date:**_____

The field batching and mixing of all components of the exterior wall coating at the address noted above have been continuously inspected. The field batching and mixing have been found to comply with current evaluation report _____ and approved plans.

Authorized Inspector's signature _____

Authorized inspector's name (print) _____

Employer's name _____

Employer's address _____

_____

_____

Telephone No. _____

*This is to certify that the above noted inspector, approved by (Company name of evaluation report holder), was authorized to inspect the project so noted and was trained to properly discharge his duties.

_____

Signature of employee or officer of report holder

Signer's name (print):_____

Date:_____

*Signature required only if inspector is not an employee of evaluation report holder.

FIGURE 3

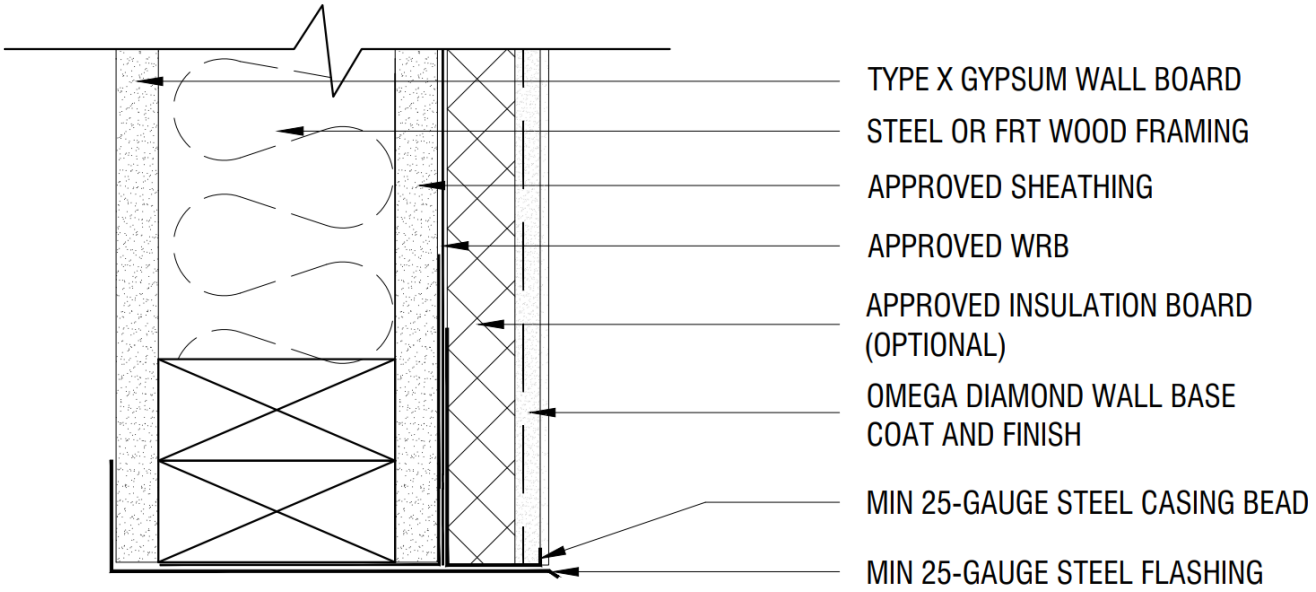

Figure 4 – Typical Head of Window Opening Construction for NFPA 285 Complying Wall (See Table 4 for details)