Code Compliance Research Report
CCRR-0367

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DIVISION: 09 00 00 – FINISHES
Section: 09 24 00 – Portland Cement Plastering

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REPORT SUBJECT:
EZ Wall Premix Stucco System,
Permacoat Stucco System, and
UniCoat Stucco System

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2021, 2018, 2015 *International Building Code®* (IBC)
- 2021, 2018, 2015 *International Residential Code®* (IRC)

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

1.2 The EZ Wall Premix, Permacoat and UniCoat stucco system have been evaluated for the following properties (see Table 1):

- Structural (wind resistance)
- Durability
- Weather protection

1.3 The 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.

2.0 STATEMENT OF COMPLIANCE

EZ Wall Premix Stucco System, Permacoat Stucco System and UniCoat Stucco System 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 EZ Wall Premix, Permacoat and UniCoat stucco systems are proprietary coatings that are reinforced with wire fabric, metal lath, plastic lath, or glass fiber lath and applied to substrates of expanded polystyrene (EPS) 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.

3.2 EZ Wall Premix Stucco System: EZ Concentrate is a factory-prepared mixture of Portland cement complying with ASTM C 150 or blended cement complying with ASTM C595, chopped fibers and proprietary additives. The mixture is packaged in 80-pound bags. Five to 6 gallons of

water and 200 to 240 pounds of sand are added to each bag in the field and mixed in accordance with the manufacturer's recommendations.

The stucco mix is also supplied in a "sanded" version in 80-pound bags or in bulk-bags. Water is added at 1-1.5 gallons of water per 80 pounds of mix.

3.3 Permacoat and Unicoat Stucco Systems: Permacoat and UniCoat Stucco Concentrate are factory prepared mixtures of Type I or II Portland cement complying with ASTM C150 or Type 1L blended cement complying with ASTM C595, chopped glass fibers, sand and proprietary additives. The concentrate is packaged in 80-pound bags. Five to 6 gallons of water and 200 to240 pounds of sand are added to each bag and mixed per manufacturer's instructions.

The stucco mix is also supplied in a "sanded" version in 80-pound bags or in bulk-bags. Water is added at 1-1.5 gallons of water per 80 pounds of mix.

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 C 144 or C 897. Sand must be graded in accordance with ASTM C 144 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

3.5 Insulation Board: Expanded polystyrene (EPS) and extruded polystyrene (XPS) insulation board must have a nominal density of 1.5 pcf or greater, a flame spread index of 25 or less, and a smoke-developed index of 450 or less and must comply with ASTM C 578 as Type II. All boards must be recognized in a current Research Report acceptable to the code official. See Section 8.0 for board identification.

When insulation boards are unbacked, they must be 1 to 1-1/2 inches thick and have 3/8-inch-high tongues with compatible grooves for horizontal joints, as shown in Figure 1.

Over solid sheathing, insulation boards must either have 1/4-inch-wide-by-1/8-inch-deep vertical grooves spaced at 12 inches on the back face, or flat insulation boards must be installed over Tyvek® Stucco Wrap® or Tyvek® Drain Wrap as the water-resistive barrier.

When an approved fluid applied weather resistive barrier is used, flat tongue-and-groove EPS foam insulation boards may be used when applied with vertical ribbons of adhesive, to create a drainage space, in accordance with the evaluation report for the weather-resistive barrier.

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 inch), 1-inch galvanized steel, woven-wire fabric. Furring must comply with the following requirements:

- When maximum total coating thickness is 1/2 inch 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 inch, No. 17 gage (0.058 inch) by 1-1/2-inch woven-wire fabric lath must be used. The body of the lath must be furred a minimum of 1/4 inch 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-inch-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 be minimum 5/16-inch-thick plywood or OSB, for studs spaced 16 inches on center, and must be minimum 3/8-inch-thick plywood or 7/16-inch-thick OSB for studs spaced 24 inches on center. 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.

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 (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.

Tyvek® Stucco Wrap® or Tyvek® Drain Wrap (ICC-ES ESR-2375) may be used over open framing and may be used where required over solid substrates as described in Section 3.5.

When application is over wood-based sheathing, the barrier must also be installed in accordance with IBC Section 2510.6 or IRC Section R703.7.3.

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: The allowable wind load on the system with wood studs spaced at 24 inches on center is 22 psf positive and 13 psf negative. Roofing nails attaching lath must have 1-inch penetration into framing and be spaced a maximum of 7 inches on center.

The allowable wind load on the system with steel studs spaced at 24 inches on center is 22 psf positive and 13 psf negative. Fasteners must be designed for the applicable loads and be spaced no greater than 7 inches on center.

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 EZ Wall Premix Stucco System, and Permacoat and Unicoat Stucco System must be installed in accordance with the National One Coat Stucco Association (NOCSA) Standard for Installation and Furring of Plaster Base (Lath) for Vertical Construction, 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 stucco system must be applied in accordance with Ezmar, LLC published installation instructions. The coating must be applied to a minimum 3/8-inch nominal thickness. The lath, when required, must be embedded in the minimum coating thickness and must not be exposed.

The coating must be applied by applicators approved by EZMAR, LLC. The water-resistive barrier may be omitted when the stucco is installed directly over concrete or unit masonry substrates.

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.

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 unless more restrictive requirements are specified in Section 5.2.4 or 5.2.5. Wall framing must be designed in accordance with the applicable code. Metal lath or alternative lath must be installed as described in the NOCSA installation guideline.

5.2.3 Application Over Concrete and Masonry:

5.2.3.1 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.

5.2.3.2 Application with Lath: Lathing and furring used to receive stucco must be installed and conform with the NOCSA 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 2.

5.2.5 Exterior Walls of Type I, II, III, or IV Construction: See Table 3.

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 one of the following:

- EPS insulation with grooves, as described in Section 3.5 together with a water-resistive barrier described in Section 3.9.1;
- Tyvek® Stucco Wrap® or Tyvek® Drain Wrap, installed between the flat EPS boards and the sheathing;
- Flat tongue-and-groove EPS foam insulation boards applied with vertical ribbons of adhesive, as described in Section 3.5.

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, builder, or exterior coating manufacturer, in that order.

5.2.7.3 Curing: Moist curing must be required for a minimum of 48 hours after coating application.

5.2.7.4 Soffits: The system may be applied to soffits, provided the coating is applied over metal lath complying with Section 3.6.2 of this report in lieu of wire fabric lath. 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: The system may be applied to sills at locations such as windows 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 in accordance with the appropriate sections of this report. Sills with depths exceeding 6 inches must have substrates of solid wood or plywood. The substrate must be fastened in accordance with IBC Table 2304.10.1 or IRC Table R602.3 (1), and then a double layer of an approved water-resistive barrier must be applied. 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 EZMAR, LLC.

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

6.7 The EZ Wall Premix Stucco System and Permacoat and UniCoat stucco systems 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.

8.0 IDENTIFICATION

The EZ Wall Premix Stucco System and Permacoat and UniCoat stucco systems are identified with the manufacturer's name (EZ Wall Concentrate, Inc, or Somar Industries LLC), address and telephone number, 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 (EZ Concentrate, Permacoat, or UniCoat), the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-0367).

CODE COMPLIANCE
ETL US
Intertek

9.0 FLORIDA BUILDING CODE

This section is not applicable.

10.0CODE 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 – CODE REFERENCES

Properties	2021 International Building Code (IBC)	2021 International Residential Code (IRC)
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 – ONE-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES

Interior Finish	Framing	Exterior Finish			
		Sheathing	Insulation	Coating	Axial Loads
5/8-in. Type X gypsum board, vertical or horizontal, attached with 1-7/8-in.-long, 6d coated nails having 1/4-in. heads, spaced at 7 in. oc; joints and nail heads must be treated[3]	Min. 2 x 4 wood framing a maximum of 24 in. oc; no insulation in stud cavity; studs braced at mid-height	5/8-in. Type X gypsum sheathing, vertical, attached with 1-3/4 in. long, No. 11 gage roofing nails having 7/16-in. heads, spaced at 4 in. oc on perimeter and 7 in. oc on intermediate framing; water-resistive barrier applied over sheathing	None	Min. 3/8-in.-thick EZ Wall Premix Stucco System, or Permacoat or UniCoat with metal lath attached per 5.2	See Note 1
5/8-inch Type X gypsum board, horizontal or vertical, attached with 6d coated wallboard nails, 1-5/8-inch, 19/64-in. heads spaced 8 in. oc; joints and nail heads must be treated[3]	Min. 2 x 4 wood framing a maximum of 16 in. oc; studs braced at mid-height; R-11 fiberglass or mineral wool insulation in stud cavities	7/16-in. OSB, horizontal, 6d nails, 1-7/8 in. long, 19/64-in. dia. heads, spaced at 8 in. oc; water-resistive barrier applied over sheathing	None	Min. 3/8-in.-thick EZ Wall Premix Stucco System, or Permacoat, or UniCoat with metal lath attached per 5.2	See Note 2
5/8-in. Type X gypsum board, 1-5/8 in. galvanized steel nails (0.010-in. shaft, 0.030-in. head) spaced 8-in. oc; joints and nail heads must be treated[3]	Min. 2 x 4 wood framing a max. of 16-in. oc; studs braced at mid-height; R-11 fiberglass insulation in stud cavities	1/2-in.gypsum sheathing, 1-5/8 in. galvanized steel nails (0.10-in. shaft, 0.30-in head), spaced at 12-in. oc	None	Min. 3/8-in. thick EZ Wall Premix Stucco System, or Permacoat, or UniCoat; with metal lath attached per 5.2	See Note 2

Note 1: The wood stud axial design stress for the wall assembly, as calculated in accordance with Section 2306 of the IBC or FBC, or Section R602.3, must be limited to 0.78 F'c, and the maximum stress must not exceed 0.78 F' c at a maximum slenderness ratio (le/d) of 33.

Note 2: Axial loads applied to the wall assembly must be limited by the lesser of the following:
• 1,100 pounds per stud.
• 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.

Note 3: 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.

TABLE 3 – NFPA 285-COMPLYING ASSEMBLIES – EZ WALL PREMIX STUCCO SYSTEM, PERMACOAT OR UNICOAT WITH METAL LATH

Interior Finish	Framing	Exterior Finish		
		Sheathing	Insulation	Coating
5/8-in. Type X gypsum board attached per code, joints and nails must be treated[1]	No. 20 gage, 3-5/8 in. steel framing spaced 16 in. oc; openings must be framed with No. 20 gage steel framing	1/2-in. regular gypsum sheathing attached to framing with 1-1/2 in. self-tapping screws at 12. oc vertically, water-resistive barrier applied over sheathing	Type II (nominal 1.5 pcf) EPS, 1-1/2 in. thick, vertical joints placed horizontally over framing and staggered one stud cavity, attached with 2 1/2-in. flathead, self-tapping screws	Min. No. 20 gage, 1-in. wire fabric lath, min. 2 in. overlap, attached using No. 8 by 2-1/2 in. washer-head screws spaced at 8-in. oc. EZ Wall Premix Stucco System, Permacoat, or UniCoat applied a min. 3/8 in. thickness[2]

[1]Gypsum board joints must be taped and treated with joint compound, and fastener heads must be treated with joint compound, in accordance with ASTM C840.

[2]Windows and openings must be framed with min. No. 20 gage steel framing and must be flashed with 0.04-in.-thick aluminum flashing extended to the exterior surface of the wall and 2 in. onto the face of the interior of the wall. See Figures 4 and 5.

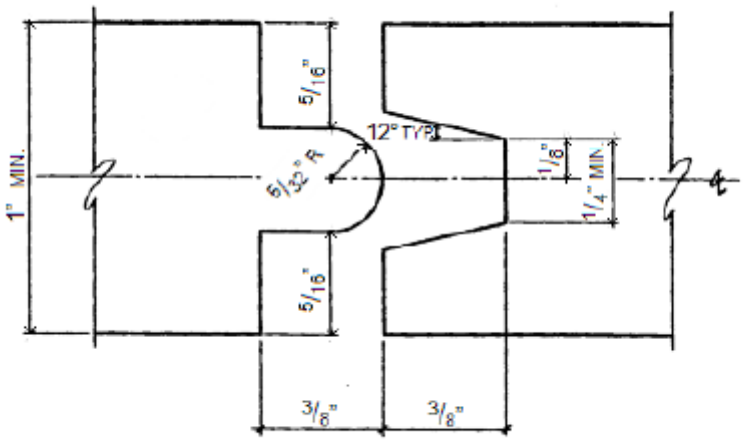

Figure 1 – Tongue and Groove Detail for Insulation Boards

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

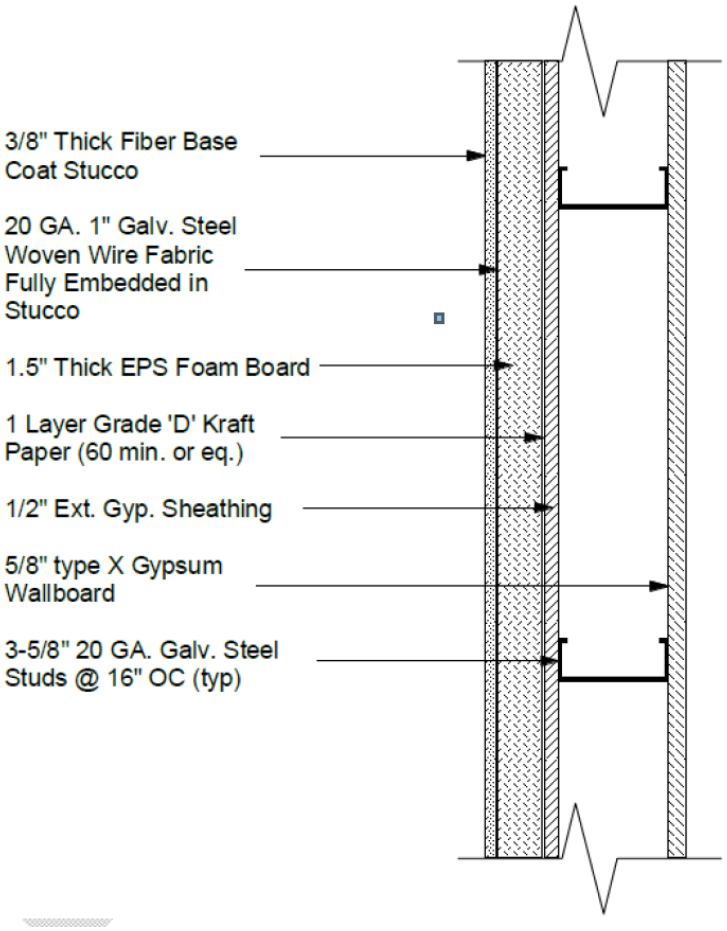

Figure 4 – Typical Construction for NFPA 285 Complying Wall (See Table 3 for details)

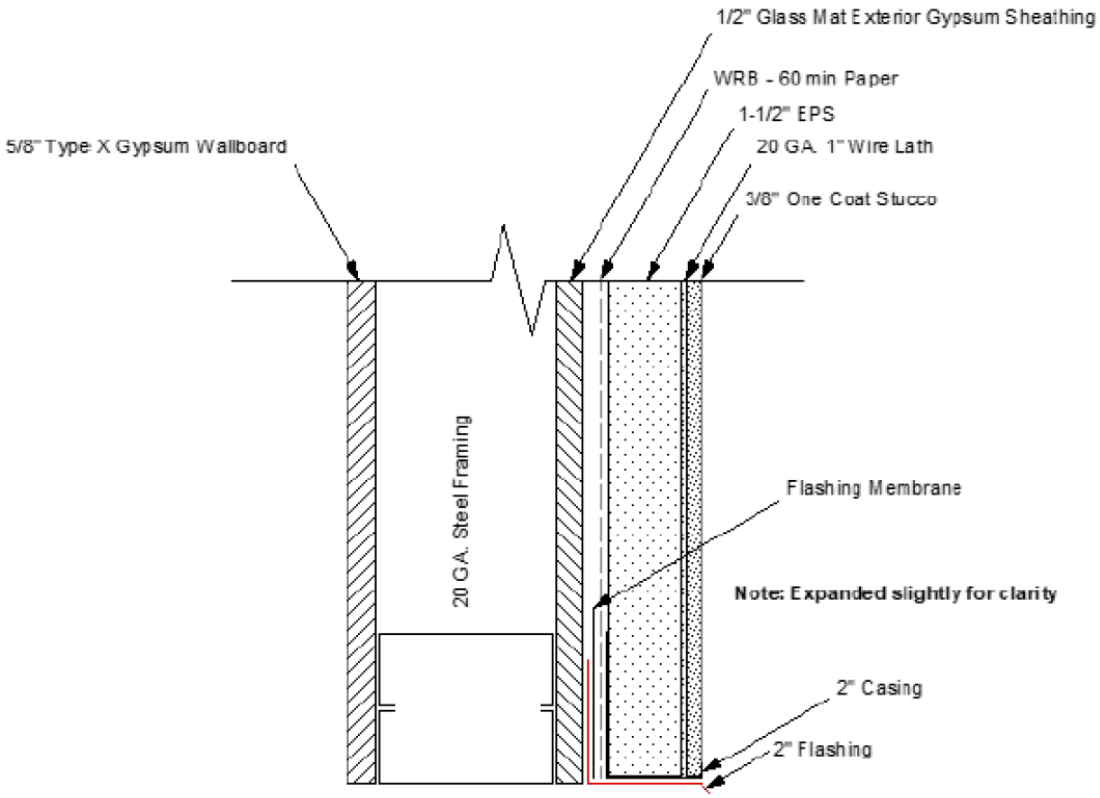

Figure 5 – Typcial Head of Window Opening Construction for NFPA 285 Complying Wall (See Table 3 for details)