ICC EVALUATION SERVICE
In Cooperation with Innovation RESEARCH LABS

Most Widely Accepted and Trusted

ICC-ES Evaluation Report

ESR-3439

ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org

Reissued 07/2017
This report is subject to renewal 07/2018.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 42 43—COMPOSITE WALL PANELS

REPORT HOLDER:

PRODEMA USA INC.

2332 GALIANO STREET, 2ND FLOOR
CORAL GABLES, FLORIDA 33134

EVALUATION SUBJECT:

PRODEX IGN WALL PANEL CLADDING SYSTEM

Look for the trusted marks of Conformity!

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

A Subsidiary of ICC INTERNATIONAL CODE COUNCIL

ICC-ES Evaluation Report

ESR-3439

Reissued July 2017

This report is subject to renewal July 2018.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 42 43—Composite Wall Panels

REPORT HOLDER:

PRODEMA USA INC.
2332 GALIANO STREET, 2ND FLOOR
CORAL GABLES, FLORIDA 33134
www.prodema.com

EVALUATION SUBJECT:

PRODEX IGN WALL PANEL CLADDING SYSTEM

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2015, 2012, 2009, and 2006 *International Building Code*® (IBC)
- 2015, 2012, 2009, and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Weather resistance
- Wind load resistance
- Interior finish (6, 8, 10 and 12 mm)
- Exterior walls of Type V construction (8, 10 and 12 mm)
- Exterior walls of Types I–IV construction (8 and 10 mm)

1.2 Evaluation to the following green code(s) and/or standards:

- 2013 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2012 and ICC 700-2008)

Attributes verified:

- See Section 2.0

2.0 USES

The ProdEX IGN Wall Panel Cladding System is used as a nonload-bearing exterior wall covering in accordance with Chapter 14 of the IBC and Chapter 7 of the IRC. The system may also be used for interior applications as part of a Class A interior wall finish. The ProdEX IGN Wall Panel Cladding System may be installed on buildings of all construction types under the IBC and on buildings constructed in accordance with the IRC. Use on buildings of Construction Types I–IV must be in accordance with Sections 4.5 and 4.6 of this report.

The attributes of the ProdEX IGN Wall Panel Cladding System have been verified as conforming to the provisions of (i) CALGreen Sections A4.405.1.3 (prefinished materials) and A5.406.1.2 (reduced maintenance); (ii) ICC 700-2012 Sections 601.7, 11.601.7, and 12.1(A).601.7 (site-applied finishing materials); and (iii) ICC 700-2008 Section 601.7 (site-applied finishing materials). Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. The code may provide supplemental information as guidance.

3.0 DESCRIPTION

3.1 General:

The ProdEX IGN Wall Panel Cladding System is an open-jointed wall covering system that allows air to circulate between the panels and the exterior face of the installed water-resistive barrier. The panels are mounted on a substructure of steel or extruded aluminum girts (exposed fastening system; refer to Section 4.3.3.1) or aluminum channels (concealed fastening system; refer to Section 4.3.3.2). See Figures 2 to 9 for system details.

3.2 Components:

3.2.1 Panels: ProdEX IGN wall panels are decorative high-pressure laminates (HPLs) consisting of a core material of kraft paper and resin, and exterior faces consisting of layers of acrylic/PVDF, melamine, wood and resin. ProdEX IGN wall panels are nominally 6 millimeters, 8 millimeters, 10 millimeters and 12 millimeters thick, are available in a standard sheet size of 4 feet by 8 feet (1219 mm by 2438 mm), and weigh a maximum of 3.5 psf (168 N/m^2). The panels have an integrated, decorative wood-grain surface and are available in a variety of wood-based colors.

The ProdEX IGN wall panels meet the requirements of IBC Section 803.1.1 as a Class A interior finish when tested in accordance with ASTM E84.

3.2.2 Substructure System: The substructure is a system of 20 gage galvanized steel with a minimum yield strength of 35 ksi (241 MPa) or ASTM B317, 6063-T5 aluminum Z-girts, or ASTM B317, 6063-T5 aluminum J-channels and hat channels extrusions, horizontal L-profile rails and ASTM B221, 6063-T6 aluminum wall brackets (for the exposed fastener system) or ASTM B317, 6063-T5 aluminum J-channel extrusions, hanging rails,

and hangers (for the concealed fastener system), which are fastened to the existing building and used to provide support for the panels.

The Z-girts mounted vertically on the wall attached to the horizontally mounted Z-girts are $1^1/_2$ inches by 1 inch by $2^1/_2$ inches (38.1 mm by 25.4 mm by 63.5 mm), providing a 1-inch space behind the panels and a $1^1/_2$-inch surface for panel attachment. The Z-girts mounted horizontally on the wall are $1^1/_2$ inches by 3½ inches by $2^1/_2$ inches (38.1 mm by 88.9 mm by 63.5 mm). The $^1/_8$-inch-thick (3.18 mm) J-channels and hat channels provide a 1 inch (25.4 mm) space behind the panels and must be attached to aluminum L-profile rails. The L-profile rails are $2^3/_8$ inches by $1^9/_{16}$ inches (60.3 mm by 40 mm) and must be attached to wall brackets measuring $3^9/_{16}$ inches by $5^5/_{16}$ inches (90.5 mm by 135 mm). The $^1/_8$-inch-thick (3.18 mm) J-channels provide a 1-inch (25.4 mm) space behind the concealed fastener panel hanging system. The substructure supports (Z-girts J-channels, and hat channels) are installed vertically at a maximum of 24 inches (610 mm) on center.

For the concealed fastener system, a horizontal hanging rail is installed at a maximum of 24 inches (610 mm) on center, and is fastened to the vertical channels. Concealed fastener panels are hung from the horizontal rail using aluminum hangers, which are fastened to the backs of the panels using TB-A2 TX30 fasteners. For the exposed fastener system, the panels are fastened directly to the vertical girts or aluminum channels using powder- coated, self-tapping screws provided by Prodema.

The components of the substructure system weigh a maximum of 1.0 pound per foot (15 N/m) of component length. The substructure components and fasteners are provided with the panels. See Figure 1 for substructure component details.

4.0 DESIGN AND INSTALLATION

4.1 General:

The ProdEX IGN Wall Panel Cladding System must be installed in accordance with project-specific structural calculations, details and instructions, and this report, by qualified installers recognized by Prodema, S.A. A copy of the design and installation documents must be available on the jobsite at all times during construction.

4.2 Design:

The cladding system is designed to accommodate various architectural appearances within the limitations described in this report. Attachment of the system to the wall must be designed by a qualified design professional and the details must be submitted to the code official for approval. The substructure system connections used to connect the ProdEX IGN Wall Panel Cladding System to the underlying wall or substrate must be included in the design documents. Allowable wind loads for the ProdEX IGN Wall Panel Cladding System are given in Table 1. The capacity of the attachment system connections to the substrate, and the wind-load capacity of the underlying wall or substrate, must equal or exceed the design uniform transverse wind loads for the structure and cladding determined in accordance with Chapter 16 of the IBC or Section R301.2.1 of the IRC, as applicable.

4.3 Installation:

4.3.1 General: The ProdEX IGN Wall Panel Cladding System (panels and substructure) must be installed over wall assemblies complying with IBC Section 1403.3, capable of supporting the imposed loads, including the weight of the cladding system and the transverse wind loads. The substructure must be securely connected to the supporting wall with corrosion-resistant fasteners that are compatible with the substructure materials and the wall substrate. A maximum free air cavity depth of 1 inch (25.4 mm) must be maintained behind the panels.

Exterior wall assemblies on which the system is to be installed must include flashing, a water-resistive barrier, a means of draining water, and protection against condensation in accordance with IBC Section 1403.2. A ventilation path must be maintained to allow air to flow into, out of, and within the cavity between the water-resistive barrier and the panels. The panels must be cut and trimmed in accordance with the limitations described in the design documents and this report. Panel-to-panel joints and panel-to-penetration joints (such as at windows, doors, and air conditioning outlets) require a minimum nominal gap of $^1/_4$ inch.

4.3.2 Substructure System Installation: Connection of the substructure components, Z-girts, J-channels or hat channels described in Section 3.2.2, to the supporting wall assembly must be designed in accordance with Section 4.2 and this section. The components must be installed vertically at a spacing not to exceed 24 inches (610 mm) on center, and fastened at a maximum of 24 inches (610 mm) on center along the vertical length, to the underlying substrate of the building to withstand the wind loads noted in Table 1.

4.3.3 Panel Fastening:

4.3.3.1 Exposed Fastening System: The exposed fastening system panels must be connected to the substructure vertical Z-girts, or J-channels and hat channels using SX3 No.14-11 irius Drive 304, stainless steel self-drilling screws at a maximum of 24 inches (610 mm) on center. Each wall panel, at the panel attachment points, must be predrilled and a minimum fastener edge distance of 0.80 inch (20 mm) must be maintained. Fastener length must provide for a minimum of three fully developed threads through the metal substructure extrusions. The middle fastener of each panel is a fixing fastener to hold the panel in place. The remaining fasteners in the panel must be fastened through pilot holes in the panel that are $^5/_{64}$ inch (2 mm) larger than the screw shank diameter, to allow for panel thermal expansion.

4.3.3.2 Concealed Fastening System: The aluminum hangers must be fastened to the backs of concealed fastening system panels at 24 inches (610 mm) on center, horizontally and vertically, using two TB-A2 TX30 fasteners per hanger. The aluminum hanging rails must be installed horizontally at 24 inches (610 mm) on center and fastened to the vertical aluminum J-channels using No.14 by $^3/_4$-inch-long (19.1 mm) self-drilling hex screws. The panels must then be hung from the horizontal hanging rails in accordance with the manufacturer's published installation instructions.

4.4 Interior Applications—Class A Interior Wall Finish, 6-millimeter-, 8-millimeter-, 10-millimeter, and 12-millimeter-thick Panels:

When installed on the interior of buildings, the ProdEX IGN panels are installed in accordance with Sections 4.2 and 4.3.3.

4.5 Exterior Walls of Types I through IV Construction—Exposed Fastening System with

8-millimeter-thick Panels Installed Using Aluminum J-channels and hat channels:

When installed as described in this (Section 4.5), the ProdEX IGN exposed fastening system panels may be used on the exterior face of exterior walls of buildings required to be of Type I, II, III or IV construction.

The supporting wall assembly must consist of minimum No. 18 gage, $3^5/_8$-inch (92 mm), galvanized steel studs spaced at a maximum of 16 inches (406 mm) on center. At each floor line, the stud cavities must be fire-stopped according to the code. The studs must be covered with $^5/_8$-inch-thick (15.9 mm) Type X gypsum wallboard complying with ASTM C36 on the interior side, and $^1/_2$-inch-thick (12.7 mm) gypsum sheathing complying with ASTM C1177 on the exterior side, installed with the long dimensions perpendicular to the studs. The gypsum board must be fastened to steel framing using No. 6 by $1^1/_4$-inch-long (31.8 mm), Type S, bugle head screws at 8 inches (203 mm) on center around the perimeter and 12 inches (305 mm) on in the field.

Under the 2015 and 2012 IBC, VaproShield Reveal Shield SA self-adhered water-resistive barrier must be installed over the exterior sheathing for buildings greater than 40 feet (12.2 m) in height above grade plane. Under the 2015 and 2012 IBC, for buildings 40 feet (12.2 m) in height or less, the exterior side of the sheathing must be covered with VaproShield Reveal Shield SA or a water-resistive barrier recognized in a current ICC-ES evaluation report, that has a flame-spread rating of 25 or less and a smoke developed rating of 450 or less in accordance with ASTM E84 or UL723. Under the 2009 and 2006 IBC the exterior side of the sheathing must be covered with VaproShield Reveal Shield SA or a water-resistive barrier recognized in a current ICC-ES evaluation report, that has a flame-spread rating of 25 or less and a smoke developed rating of 450 or less in accordance with ASTM E84 or UL 723. The water-resistive barrier must be installed in accordance with the manufacturer's installation instructions.

Aluminum L-profile rails must be installed horizontally to aluminum wall brackets at a maximum of 24 inches (610 mm) on center using No. 14 by $1^1/_2$-inch (38.1 mm) self-drilling hex-head screws fastened through the exterior sheathing. Rock wool insulation $2^1/_2$ inches (64 mm) thick and with a density of 4.5 pcf (72 kg/m^2), must be installed to fill the cavity between the Aluminum L-profile rail. The panels must be installed as described in Section 4.3.3.1. See Figures 6 and 7 for Type I-IV Construction details

4.6 Exterior Walls of Types I through IV Construction—Exposed Fastening System with 10-millimeter-thick Panels Installed Using 20 Gage Galvanized Z-Girts:

When installed as described in this section (Section 4.6), the ProdEX IGN exposed fastening system panels may be used on the exterior face of exterior walls of buildings required to be of Type I, II, III or IV construction.

The supporting wall assembly must consist of minimum No. 18 gage, $3^5/_8$-inch (92 mm), galvanized steel studs spaced at a maximum of 24 inches (610 mm) on center. At each floor line, the stud cavities must be fire-stopped according to code. The studs must be covered with $^5/_8$-inch-thick (15.9 mm) Type X gypsum wallboard complying with ASTM C36 on the interior side, and $^1/_2$-inch-thick (12.7 mm) Type X gypsum sheathing complying with ASTM C36 on the exterior side, installed with the long dimensions perpendicular to the studs. The gypsum board must be fastened to the steel framing using No. 6 by $1^1/_4$-inch-long (31.8 mm), Type S, bugle head screws at 8 inches (203 mm) on center around the perimeter and 12 inches (305 mm) on center in the field. The gypsum board must be brought to a Level 2 finish in accordance with GA-214. Fiberglass insulation batts must be installed to fill the stud cavities.

Under the 2015 and 2012 IBC, Self-adhesive WrapShield water-resistive barrier must be installed over the exterior sheathing for buildings greater than 40 feet (12.2 m) in height above grade plane. Under the 2015 and 2012 IBC for buildings 40 feet (12.2 m) in height or less, the exterior side of the sheathing must be covered with Self-adhesive WrapShield or a water-resistive barrier recognized in a current ICC-ES evaluation report, that has a flame-spread rating of 25 or less and a smoke developed rating of 450 or less in accordance with ASTM E84 or UL723. Under the 2006 and 2009 IBC, the exterior side of the sheathing must be covered with Self-adhesive WrapShield or a water-resistive barrier recognized in a current ICC-ES evaluation report, that has a flame-spread rating of 25 or less and a smoke developed rating of 450 or less in accordance with ASTM E84 or UL 723. The water-resistive barrier must be installed in accordance with the manufacturer's installation instructions.

Horizontal 20 gage, galvanized steel Z-girts, measuring $2^1/_2$ inches by $3^1/_2$ inches by $1^1/_2$ inches (63.5 mm by 88.9 mm by 38.1 mm), must be installed horizontally at a maximum of 24 inches (610 mm) on center using No.14 by $1^1/_2$-inch (38.1 mm) self-drilling hex-head screws fastened through the $2^1/_2$-inch (63.5 mm) leg to the steel studs. Rock wool insulation, $3^1/_2$ inches (88.9 mm) thick and with a density of 4.5 pcf (72 kg/m^2), must be installed to fill the cavities between the Z-girts. The vertical Z-girts described in Section 3.2.2 must be installed at 24 inches (610 mm) on center and fastened to the horizontal Z-girts using No.14 by $1^1/_2$-inch-long (38.1 mm) self-drilling hex-head screws. Additionally, horizontal firestops using the $2^1/_2$-inch-by-$3^1/_2$-inch–by-$1^1/_2$- inch (63.5 mm by 88.9 mm by 38.1 mm), 20 gage, galvanized steel Z-girts must be provided at a maximum of 27 inches (686 mm) above all openings. The firestops must be fastened to the $2^1/_2$-inch-by-$3^1/_2$-inch-by- $1^1/_2$-inch (63.5 mm by 88.9 mm by 38.1 mm) Z-girts that hold the rockwool in place, using No.14 by $^3/_4$-inch-long (19.1 mm) self-drilling hex screws. The panels must be installed as described in Section 4.3.3.1. Note: the firestops protrude past the exterior plane of the ProdEX IGN wall panels approximately 2 inches. See Figures 8 and 9for Type I–IV Construction details.

4.7 Exterior Walls of Type V Construction—8-millimeter-, 10 millimeter- and 12-millimeter-thick Panels:

When installed as described in Section 4.3, the ProdEX IGN panels may be used on the exterior face of exterior walls of buildings required to be of Type V construction, with the exception that the Exposed Fastening System must only use a combination of aluminum J-channels and hat channels.

4.8 Exterior Walls of Type V Construction—10-millimeter- and 12-millimeter-thick Panels:

When installed as described in Section 4.3, the ProdEX IGN panels may be used on the exterior face of exterior walls of buildings required to be of Type V construction, with the exception that the Exposed Fastening System must only use 20 gage galvanized Z-Girts both horizontal and vertical.

5.0 CONDITIONS OF USE

The ProdEX IGN Wall Panel Cladding 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 Installation must comply with this report, the project-specific structural calculations, details, and instructions, and the applicable code. If there is a conflict between the installation instructions and this report, this report governs.

5.2 The maximum allowable wind pressure for the ProdEX IGN Wall Panel Cladding System is shown in Table 1. The capacity of the supporting wall, and the capacity of the connections used to attach the cladding system to the wall, must equal or exceed these wind pressures.

5.3 Drawings, design details and calculations verifying compliance with this report and adequacy of the connections and supporting framing must be submitted to the code official for approval. The drawings and calculations must be prepared by a registered design professional when required by the statutes of the jurisdiction in which the project is to be constructed.

5.4 When installed with spaces between adjacent panels on interior walls, the ProdEX IGN Wall Panel Cladding System must be installed over a substrate having a Class A finish.

5.5 The ProdEX IGN Wall Panel Cladding System must be installed by qualified installers recognized by Prodema. The panels are manufactured in Guipuzcoa, Spain, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Polymer-based, Polymer-modified and High-pressure Laminate Exterior and Interior Wall Cladding (AC92), dated December 2013, (editorially revised March 2016).

6.2 Reports of testing in accordance with NFPA 285 and NFPA 268.

7.0 IDENTIFICATION

The ProdEX IGN wall panels are labeled with the manufacturer's name (Prodema USA) and address; the product name, thickness, color, finish, and batch number; and the evaluation report number (ESR-3439).

TABLE 1—MAXIMUM SPACING AND ALLOWABLE TRANSVERSE LOAD

FASTENING SYSTEM TYPE	PANEL THICKNESS	FASTENER/SUPPORT/SPAN MAXIMUM SPACING[2]	ALLOWABLE TRANSVERSE LOAD[1] (psf)	
			POSITIVE	NEGATIVE
Concealed	10 mm (0.39 inch)	24 inches (609 mm) [3]	27	17
	12 mm (0.47 inch)			
Exposed (Aluminum J-Channels and Hat Channels)	8 mm (0.31 inch)		30	19
	10 mm (0.39 inch)			
	12 mm (0.47 inch)			
Exposed (20 GA, Galvanized Z-Girts)	10 mm (0.39 inch)		30	25
	12 mm (0.47 inch)			

For **SI:** 1 inch = 25.4 mm; 1 psf = 47.9 N/m^2.

[1]Maximum allowable positive and negative transverse wind load capacity determined from ASTM E330 testing.
[2]Testing was carried out in a multi-span support configuration.
[3]Maximum spacing for girts, channels, fasteners, and panel span is 24 inches.

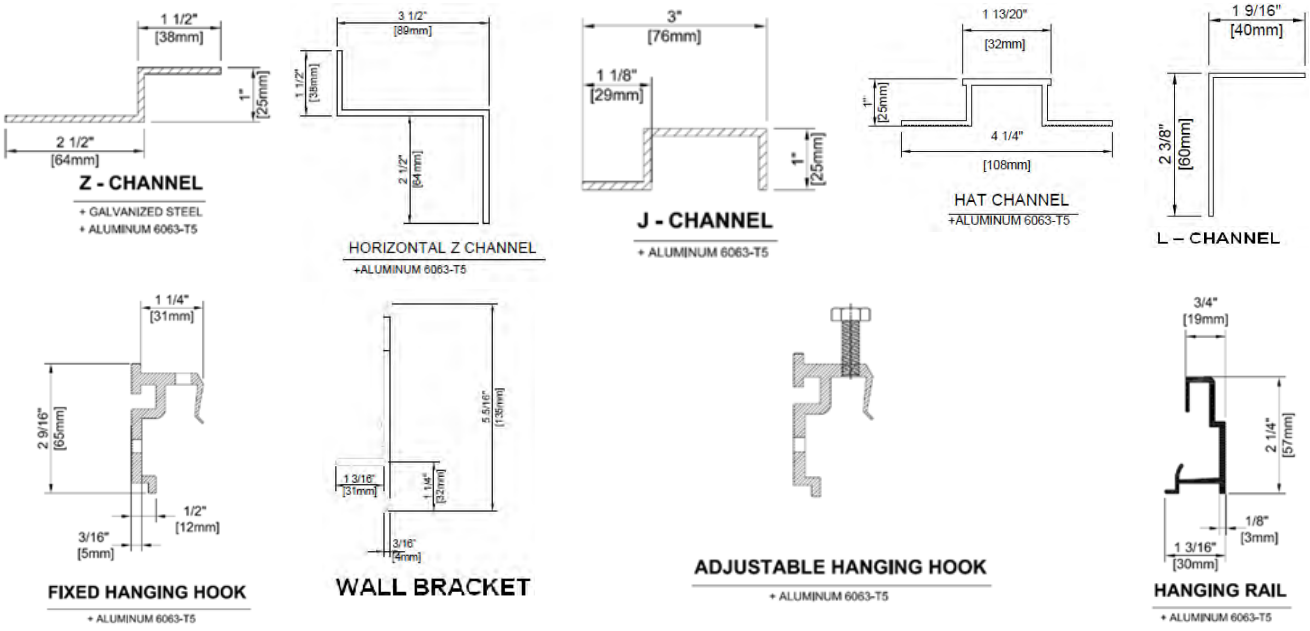

FIGURE 1—PRODEX IGN WALL PANEL CLADDING SYSTEM COMPONENTS

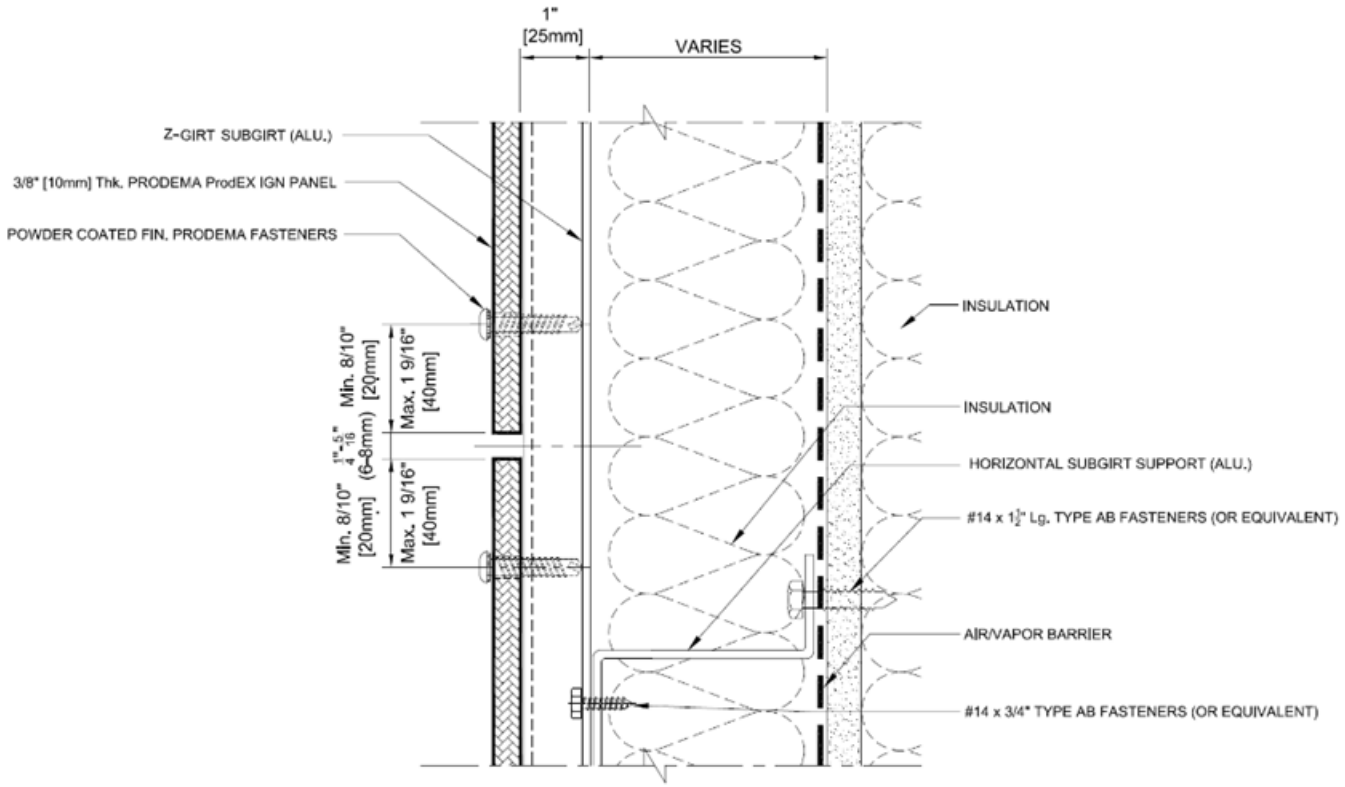

FIGURE 2—PRODEX IGN WALL PANEL CLADDING EXPOSED FASTENER SYSTEM DETAILS
HORIZONTAL PANEL JOINT—EXPOSED FASTENERS

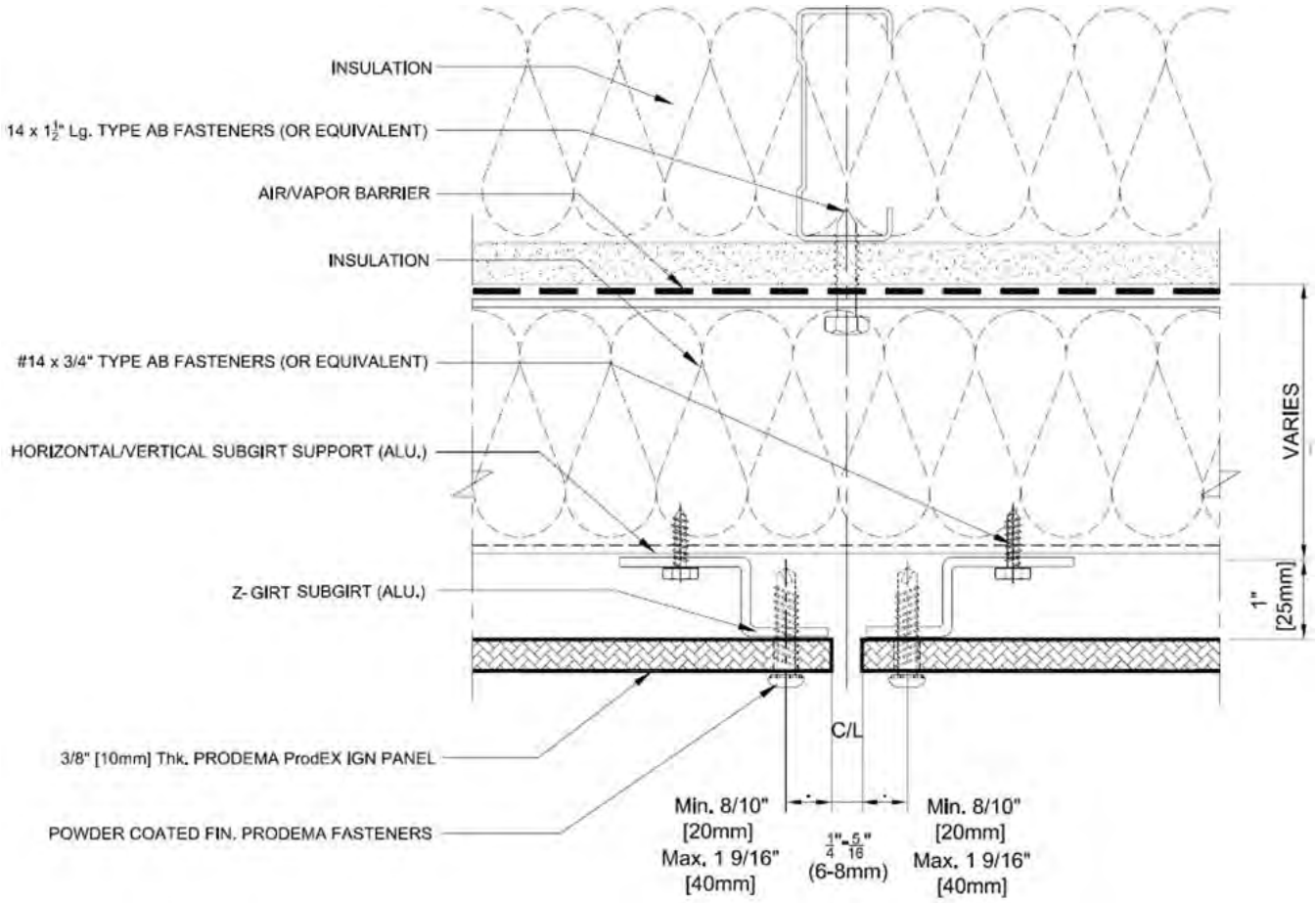

FIGURE 3—PRODEX IGN WALL PANEL CLADDING EXPOSED FASTENER SYSTEM DETAILS
VERTICAL PANEL JOINT WITH Z-CHANNEL—EXPOSED FASTENERS

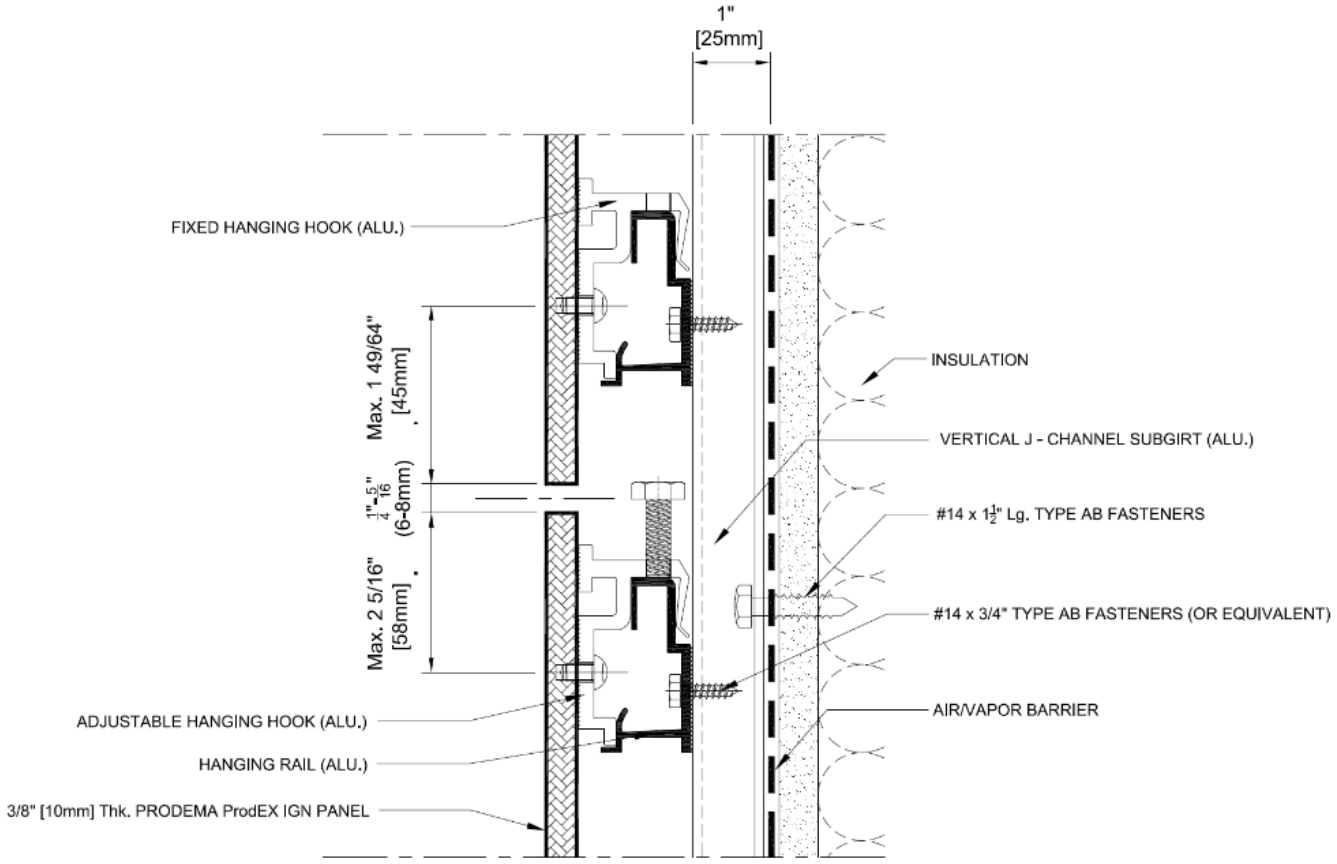

FIGURE 4—PRODEX IGN WALL PANEL CLADDING CONCEALED FASTENER SYSTEM DETAILS HORIZONTAL PANEL JOINT WITH HANGING HOOKS—CONCEALED SYSTEM

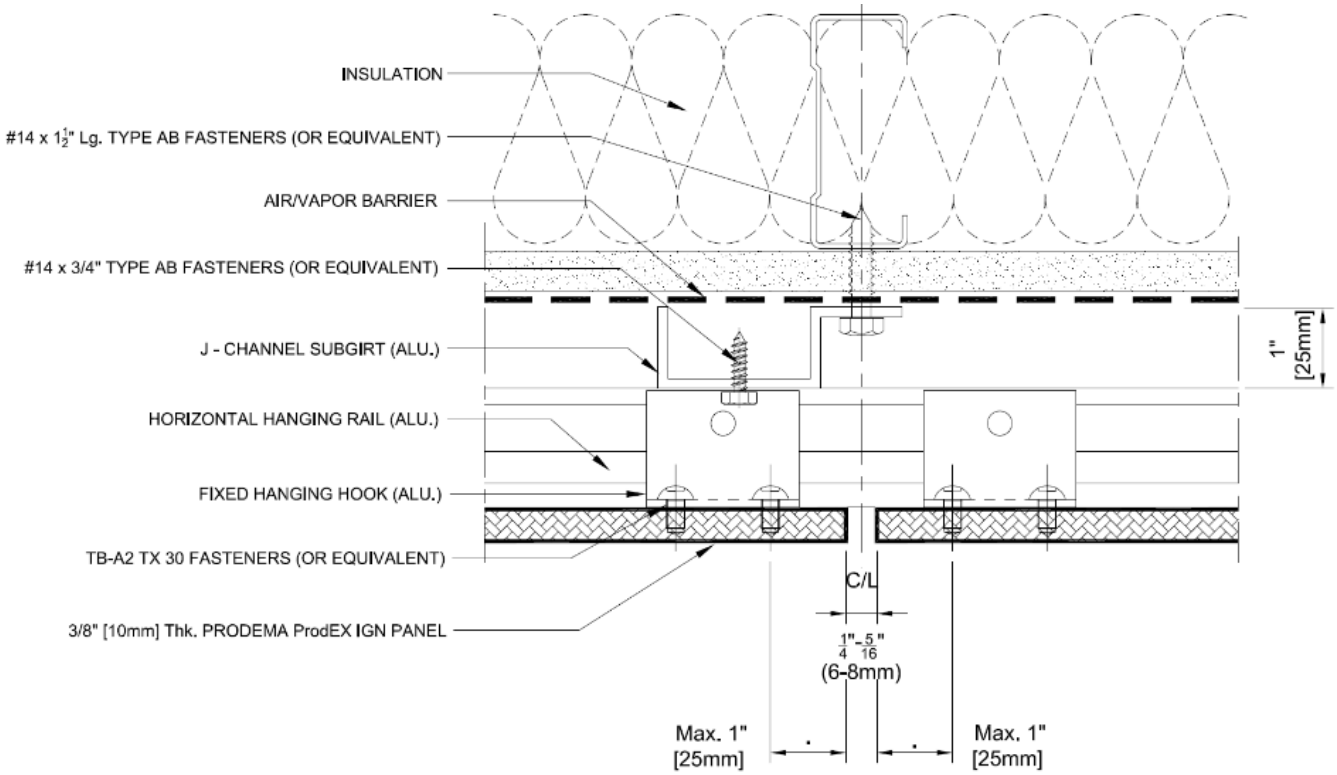

FIGURE 5—PRODEX IGN WALL PANEL CLADDING CONCEALED FASTENER SYSTEM DETAILS VERTICAL PANEL JOINTS WITH HANGING HOOKS—CONCEALED SYSTEM

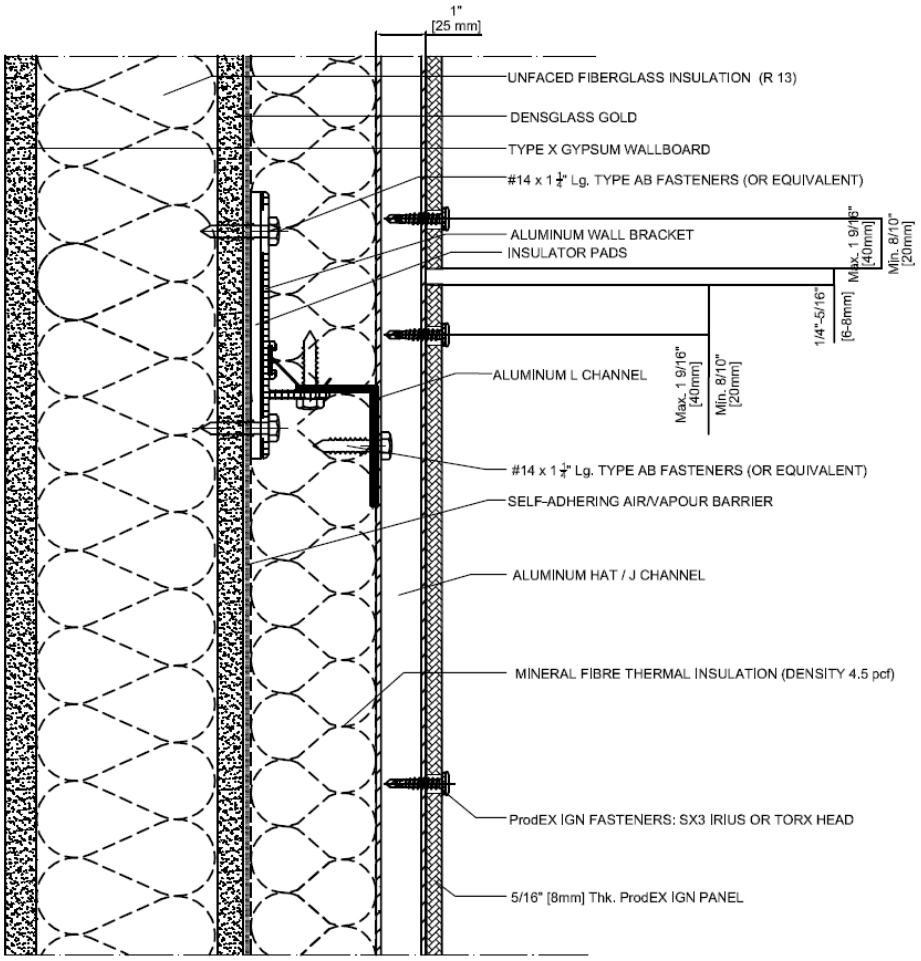

FIGURE 6—PRODEX IGN DETAILS FOR CONSTUCTION TYPES I - IV
HORIZONTAL JOINT TYPE I-IV CONSTRUCTION—EXPOSED FASTENING SYSTEM WITH J-CHANNELS AND HAT CHANNELS

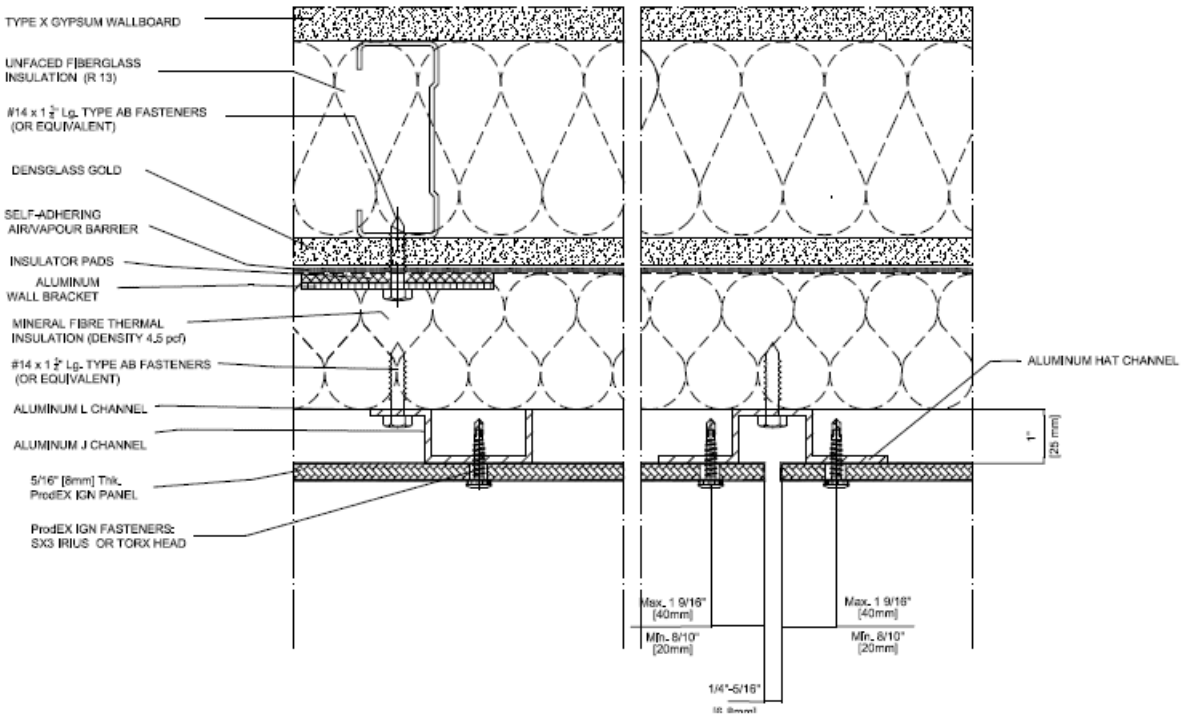

FIGURE 7 —PRODEX IGN DETAILS FOR CONSTUCTION TYPES I - IV
VERTICAL PANEL JOINT TYPE I-IV CONSTRUCTION—EXPOSED FASTENING SYSTEM WITH Z-CHANNELS

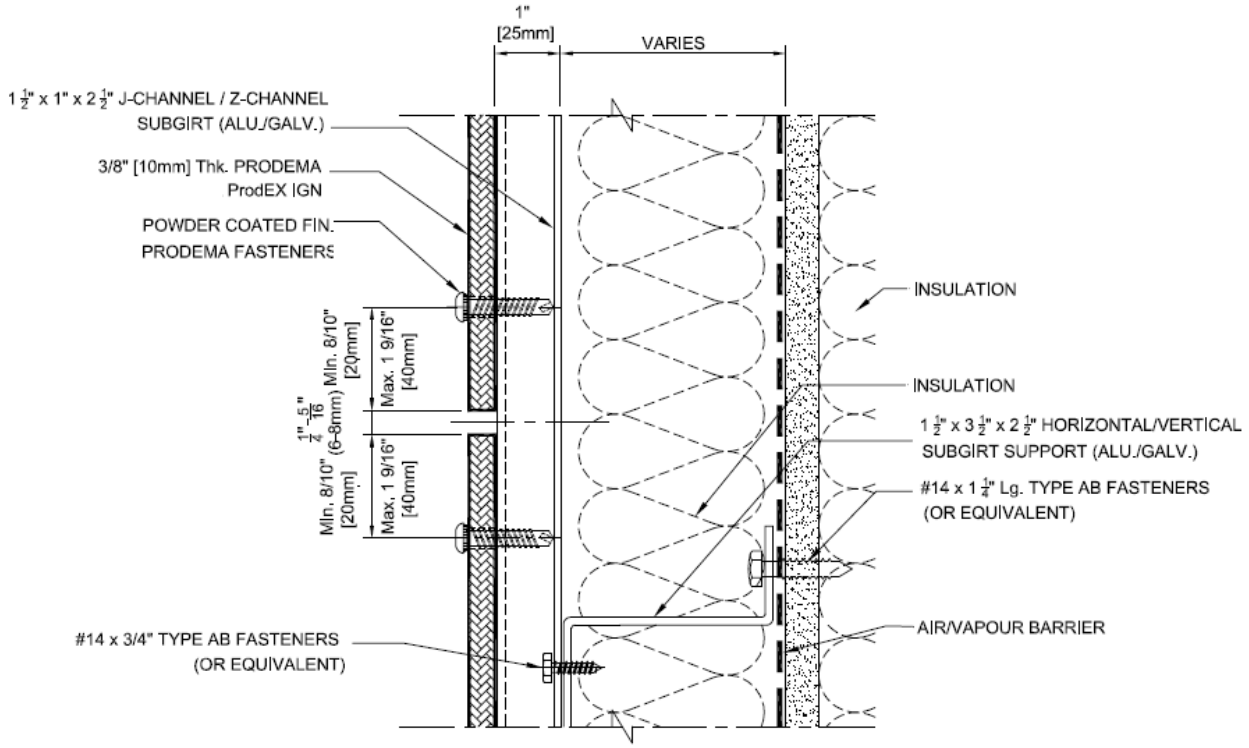

FIGURE 8—PRODEX IGN DETAILS FOR CONSTUCTION TYPES I - IV
HORIZONTAL JOINT TYPE I-IV CONSTRUCTION—EXPOSED FASTENING SYSTEM WITH Z-CHANNELS

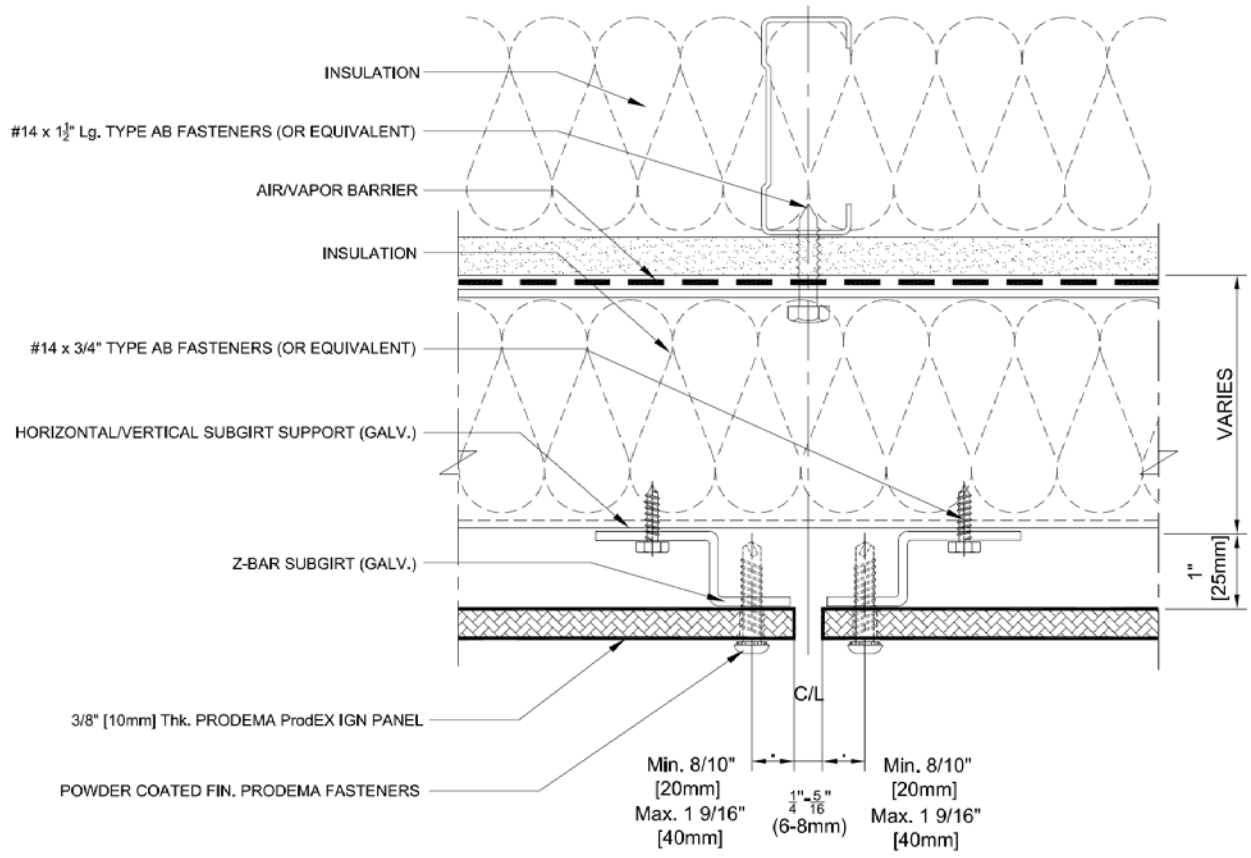

FIGURE 9—PRODEX IGN DETAILS FOR CONSTUCTION TYPES I -IV
VERTICAL PANEL JOINT TYPE I-IV CONSTRUCTION—EXPOSED FASTENING SYSTEM WITH Z-CHANNELS