

ICC-ES Evaluation Report

ESR-5448

Issued June 2024

This report also contains:


Revised January 2025

- [FL Supplement](#)

Subject to renewal June 2025

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<p>DIVISION: 07 00 00— THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 42 43— Composite Wall Panels</p>	<p>REPORT HOLDER: ARCHITECTURAL METAL SOLUTIONS LLC DBA: LUMABUILT</p> <p>ADDITIONAL LISTEE: SHANGHAI ALUBANG DECORATIVE MATERIAL CO., LTD</p>	<p>EVALUATION SUBJECT: VISAGE PE AND FR ALUMINUM COMPOSITE MATERIAL (ACM) PANELS</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, and 2012 [International Building Code® \(IBC\)](#)

Property evaluated:

- Fire performance
- Structural
- Interior Finish Classification

2.0 USES

Visage PE and FR Aluminum Composite Material (ACM) Panels are used in Metal Composite Material (MCM) systems complying with 2018 IBC Section 1406 [2015 and 2012 IBC Section 1407] for metal composite materials (MCMs), and are used as nonload-bearing, exterior wall and soffit panels in accordance with Chapter 14 of the IBC; interior wall finish in accordance with Chapter 8 of the IBC.

3.0 DESCRIPTION

3.1 Panel:

Visage PE MCM panels are aluminum composite wall panels consisting of two nominally 0.020-inch thick (0.5 mm) aluminum skins, bonded to both surfaces of a polymeric core. The core material has a nominal density of 75 lb/ft³ (1200 kg/m³).

Visage FR MCM panels are aluminum composite wall panels consisting of two nominally 0.020-inch thick (0.5 mm) aluminum skins, bonded to both surfaces of a polymeric mixed core with proprietary additives. The core material has a nominal density of 100 lb/ft³ (1600 kg/m³).

Visage PE and FR panels are manufactured in two nominal thicknesses of 0.16 inch (4 mm) and 0.24 inch (6 mm) and are available in widths up to 62 inches (1575 mm). Lengths are available up to 16 feet (4877 mm). The aluminum skins are available in fluorocarbon paint and polyester paint finish.

Visage PE and FR panels have a flame-spread index of less than 25 and a smoke-developed index of less than 450 when tested in accordance with ASTM E84 and have a Class A interior finish classification.

3.2 Framing: Installation of the Visage PE and FR MCM panels requires the following materials that are supplied by the MCM system fabricator for the Rout and Return panel installation method:

- Continuous I-shaped extruded aluminum stiffeners #12324PS (see [Figure 2](#))
- Extruded aluminum clips #12322RS (See [Figure 2](#))
- Extruded aluminum frame #12323RS (See [Figure 2](#))
- #10 x 1-1/2 inch self-drilling screws with hex washer head (see [Figure 3](#))
- #8 self-drilling screws, hex washer head, 300 series stainless steel, inorganic coating (see [Figure 1](#))
- 3/16 inch x 3/8 inch CSK aluminum rivet (see [Figure 1](#))

4.0 DESIGN AND INSTALLATION

4.1 General:

If there are any conflicts between this report and the manufacturer's installation instructions, this report shall govern. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the manufacturer's instructions must be available at all times on the jobsite during installation.

The panels are attached to the exterior building walls and soffits by use of attachment accessories installed on the panels by the MCM systems fabricator at the time of panel fabrication. There is one basic type of attachment accessory used with the Visage panels: it is the "rout-and-return" method of attachment, as described in Sections 4.3.

4.2 Design:

The maximum allowable transverse loads for the panels installed in accordance with this report are as follows:

Size	Product Name	Positive Design Pressure	Negative Design Pressure
4 mm	Visage PE	30 psf (0.0014 MPa)	17.5 psf (0.0008 MPa)
6 mm	Visage PE	33 psf (0.0016 MPa)	19.2 psf (0.0008 MPa)
4 mm	Visage FR	32 psf (0.0015 Mpa)	21.7 psf (0.0008 MPa)
6 mm	Visage FR	35 psf (0.0017 Mpa)	17.5 psf (0.0008 MPa)

Support framing, such as wall studs must be designed in accordance with the applicable code to be adequate for these loadings.

4.3 Installation:

The MCM system must be fabricated in a shop by an MCM systems fabricator. Such fabrication involves cutting and forming the panels as well as installing panel stiffeners and other attachment accessories as needed to attach the panels to the exterior of the building in the field.

4.3.1 Rout and Return Installation: The rout-and-return assembly consists of flat panels formed into shallow "pans" by means of routing a groove in the back face of the panel, along each panel edge, and mechanically folding all four edges. Additionally, the system's fabricator must install I-shaped extruded aluminum stiffeners (#12324PS) on the back of the panels, running the full panel width, parallel to the panel span at a maximum spacing of 24 inches (609.6 mm) on center. The stiffeners are also attached at each end to the frame extrusion. The stiffeners must be adhered to the panels using an approved structural silicone seal and adhesive complying with ASTM C1184. The panel length measured in the direction parallel to the stiffeners shall not exceed 5 feet (1.52 m). See [Figure 1](#).

The assembly system A1000 Rainscreen System is the method of attachment. See [Figures 1](#) and [3](#).

4.3.2 Exterior Walls of Buildings of up to 40 feet in Height of Type I, II, III or IV Construction: The MCM system assembly recognized in this report under 2018 IBC Section 1406.11.1 (2015 and 2012 IBC Section 1407.11.1) the Visage panels must be installed with an approved thermal barrier in accordance with 2018 IBC Section 1406.10.2 (2015 and 2012 IBC Section 1407.10.2), and the panels must not be installed more than 40 feet in height above grade where installed as follows:

- Where the fire separation distance is 5 feet (1.52 m) or less, the area of MCM must not exceed 10 percent of the exterior wall surface.
- Where the fire separation distance is greater than 5 feet (1.52 m), there is no limit on the area of exterior wall surface using MCM

4.3.3 Exterior Walls of Buildings of Type I, II, III or IV (Noncombustible) Construction Based on NFPA 285 Testing — 6 mm Visage FR Panels: Where exterior walls are required to be noncombustible construction, the walls must be built in accordance with the following Rout and Return fastening system:

The wall must be framed with minimum No. 20 gage steel studs at 24 inches (610 mm) on center. The gypsum wallboard must be oriented vertically and attached to the steel studs with No. 10 by 1¼-inch-long (32 mm), long flat head self-drilling screws with a nominal spacing of 8 inches (203 mm) around the perimeter and 12 inches on center (305 mm) in the field of the wallboard. The interior of the wall must be faced with one layer of 5/8-inch-thick (15.9 mm), Type X gypsum wallboard, complying with ASTM C1396, finished and taped in accordance with ASTM C840 or GA216. The exterior face of the wall must be sheathed with 5/8-inch-thick (15.9 mm) National Gypsum EXP exterior gypsum sheathing.

VaproShield WrapShield IT membrane must be applied directly over the National Gypsum EXP exterior gypsum sheathing.

No. 16 Gauge x 1½-inch (38.1 mm) wide, CRC steel bracing, must be installed horizontally every 4 feet (1.2 m). and attached to the steel studs using 3 5/8-inch (92 mm) wide Clark Dietrick BridgeClips. The clips must be attached to the studs with two No. 8 x 1-inch (25.4 mm) long wafer head self-drilling screws and to the CRC bracing with one No. 8 x 1-inch (25.4 mm) long wafer head self-drilling screw. The 6 mm Visage FR panels must be installed over the exterior gypsum sheathing in accordance with Section 4.3.1 of this report. The vertical and horizontal panel joints must be covered with 4 mm Visage FR reveal strips.

Opening headers, sills and jambs must be framed with minimum No. 20 gage galvanized steel track with minimum 0.080 inch-thick (2 mm) aluminum flashing. The aluminum flashing must be applied flush with the interior sheathing and extending 2-inches (50.8 mm) beyond the exterior sheathing.

5.0 CONDITIONS OF USE:

The Visage PE and FR Panels described in this report comply with, or are suitable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published instructions, the applicable code and the approved plans. In the event of a conflict between the manufacturer's instructions and this report, this report governs.
- 5.2 The design of the structural support system (building framing, attachment accessories, silicone sealants/adhesives and panel connections provided by the MCM systems fabricator) and fasteners used to attach the panels to the supports must be submitted to and approved by the code official for each project.
- 5.3 Where exterior walls are required to be of Types I, II, III or IV construction, Visage PE and Visage FR wall panels must be installed as specified in Section 4.3.2 or 4.3.3, as applicable.
- 5.4 The MCM system fabricator must provide a certificate of compliance to the code official attesting that the MCM system fabrication includes the use of adhesives approved for use, that the adhesive application complies with the adhesive manufacturer's installation guidelines, and that the MCM system fabrication complies with approved construction documents. Additionally, when the attachment methods employ adhesives other than to adhere stiffeners to the back of the panel, special inspections are required in accordance with 2018, and 2015 IBC Section 1704.2.5, or the fabricator must be approved by the code official in accordance with 2018 and 2015 IBC Section 1704.2.5.1, as such operations are outside the scope of this report.
- 5.5 For each project, engineering calculations prepared by a registered design professional confirming the allowable transverse load capacity for the MCM panels and the attachment accessories to the supporting wall or substrate must be submitted to the authority having jurisdiction for review. The allowable transverse load capacity must be equal to or exceed the design loads determined in accordance with Chapter 16 of the IBC. Allowable transverse load capacities are set forth in Section 4.2 of this report.
- 5.6 Evidence must be submitted to the code official of weather tightness of the wall cladding system in accordance with Section 1406.6 of the 2018 IBC [Section 1407.6 of the 2015 IBC].
- 5.7 The Visage PE and FR soffit panels must be installed under the limitation of Section 705 of the 2018, 2015 and 2012 IBC and must comply with installation as wall cladding. The Visage PE and FR Aluminum Composite Material (ACM) Panels are produced in China, 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 Metal Composite Material \(MCM\) \(AC25\)](#), dated October 2010 (editorially revised November 2015).
- 6.2 Data in accordance with NFPA 285.

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5448) along with the name, registered trademark, or registered logo of the report holder and/or listee must be included in the product label.

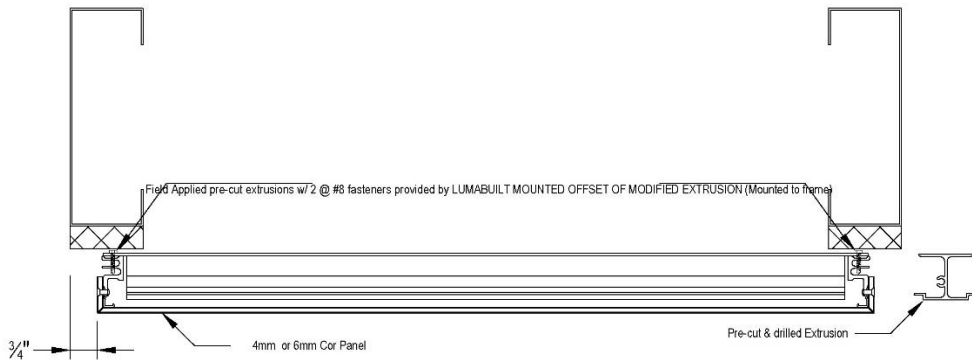
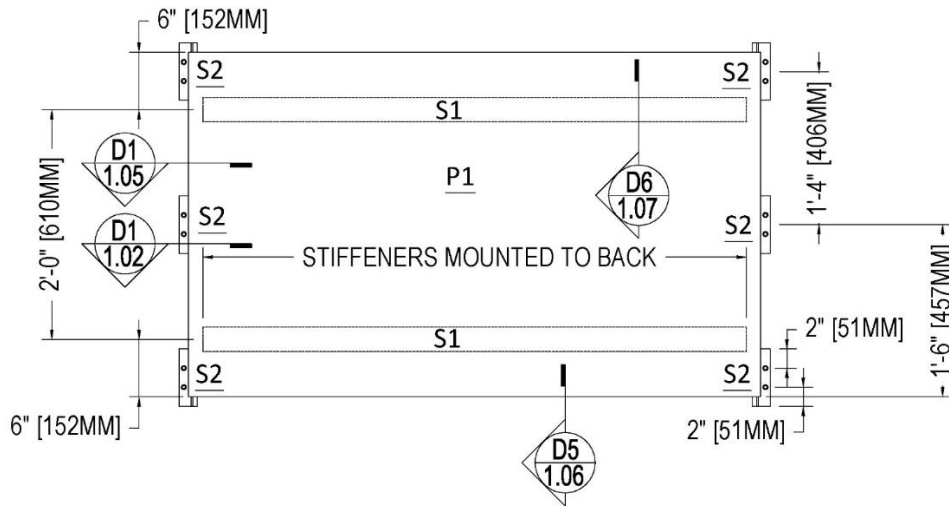
7.2 In addition, the panels are identified by a label noting the name and address of Lumabuilt, the product name, the thickness, the flame-spread index and the evaluation report number (ESR-5448).

7.3 The report holder's contact information is the following:

ARCHITECTURAL METAL SOLUTIONS LLC DBA: LUMABUILT
2529 W JACKSON STREET
PHOENIX, ARIZONA 85009
(602) 275-1676
www.lumabuilt.com

7.4 The additional listee's contact information is the following:

SHANGHAI ALUBANG DECORATIVE MATERIAL CO., LTD.
NO. 2355 XINDA ROAD NANHU DISTRICT
JIAXING CITY, SHEJIANG PROVINCE
CHINA
+86 0573-83131051
www.alubang.net



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1.05

JAMB DETAIL

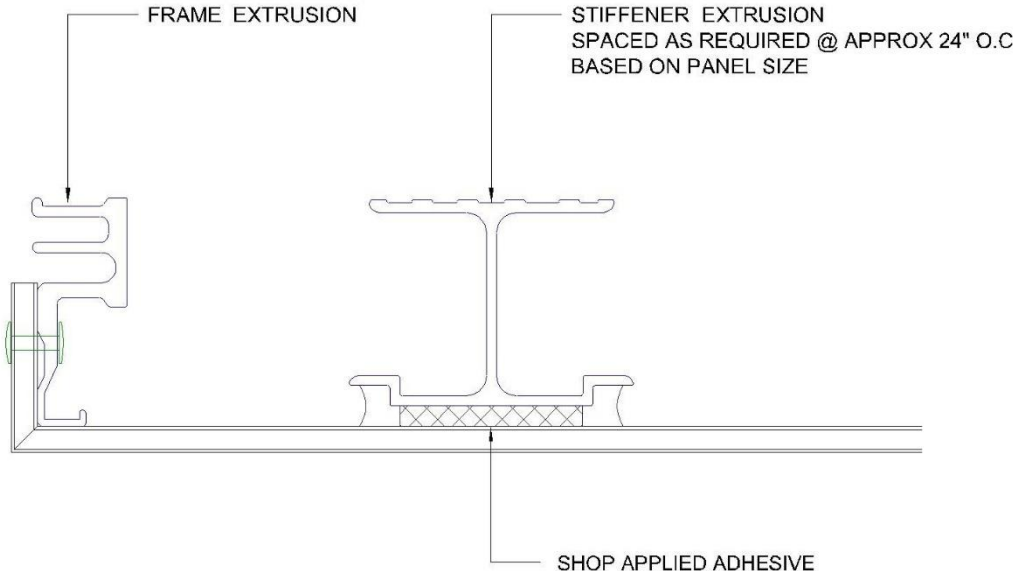


FIGURE 1—ASSEMBLY

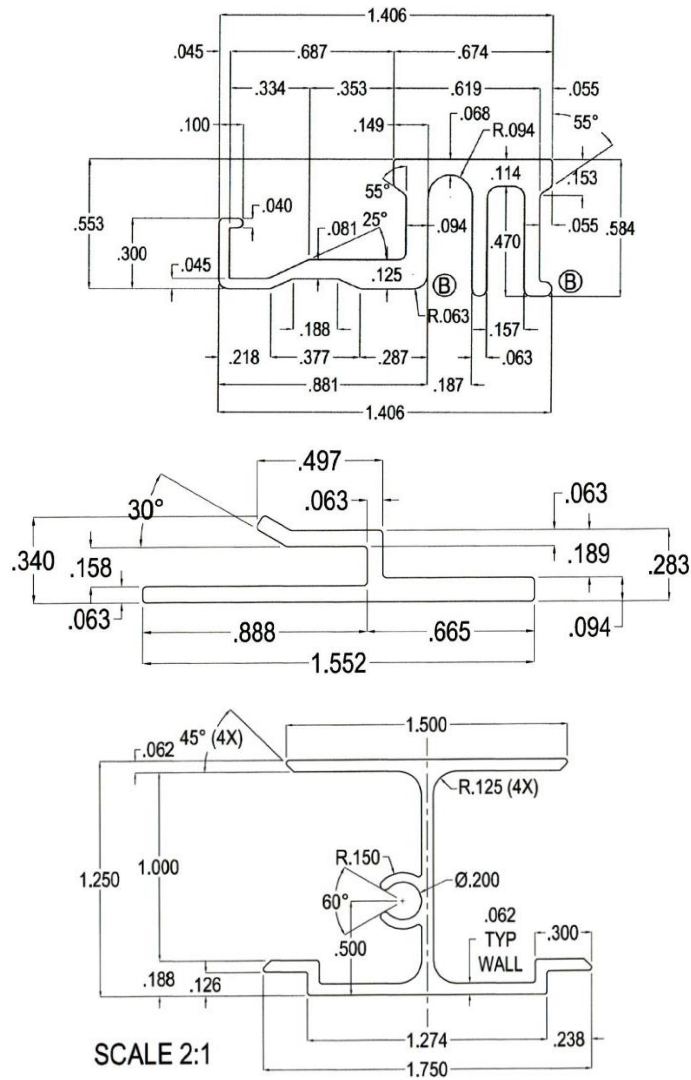


FIGURE 2—STIFFENERS AND ATTACHMENT ACCESSORIES

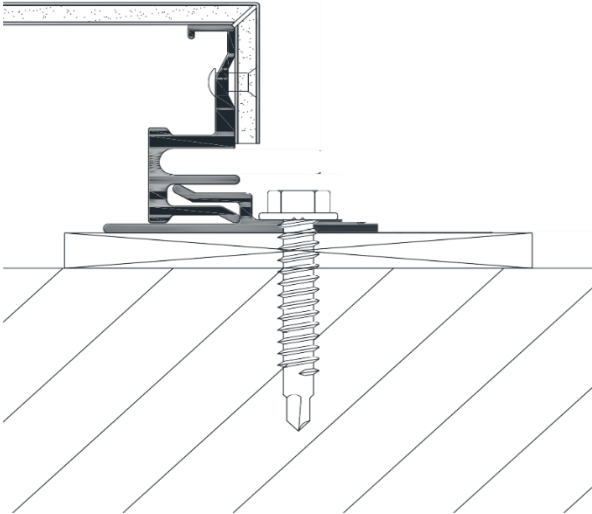


FIGURE 3—ATTACHMENT METHOD

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

REPORT HOLDER:

ARCHITECTURAL METAL SOLUTIONS LLC DBA: LUMABUILT

EVALUATION SUBJECT:

VISAGE PE AND FR ALUMINUM COMPOSITE MATERIAL (ACM) PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Visage PE and FR Aluminum Composite Material (ACM) Panels, described in ICC-ES evaluation report ESR-5448, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 Florida Building Code—Building

2.0 CONCLUSIONS

The Visage PE and FR Aluminum Composite Material (ACM) Panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-5448, comply with the 2020 Florida Building Code—Building. The design requirements must be determined in accordance with the Florida Building Code—Building, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-5448 for the 2018 International Building Code® meet the requirements of the Florida Building Code—Building, as applicable, with the following conditions:

- Clearance between exterior wall coverings and final earth grade must meet the requirements of Section 1403.8 of the Florida Building Code—Building, as applicable.

Use of the Visage PE and FR Aluminum Composite Material (ACM) Panels for compliance with the High-Velocity Hurricane Zone provisions of the Florida Building Code—Building has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued June 2024 and revised January 2025.