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ICC-ES Evaluation Report
ESR-2464

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DIVISION: 08 00 00—OPENINGS
Section: 08 45 00—Translucent Wall and Roof Assemblies
Section: 08 84 00—Plastic Glazing

REPORT HOLDER:

KALWALL CORPORATION

EVALUATION SUBJECT:

KALWALL TRANSLUCENT PANELS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 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:

- Structural
- Surface burning
- Fire classification
- Durability
- Air infiltration
- Water penetration
- Physical properties

2.0 USES

Kalwall translucent panels with fiberglass reinforced plastic (FRP) facings and aluminum I-beam grid-core framing members are used as exterior non-load-bearing wall panels, roof panels, exterior wall glazing and skylight glazing. Kalwall translucent panels with FRP facings and heavy thermally broken I-beam (TBI-H) grid-core framing members are used as exterior non-load-bearing wall panels and exterior wall glazing.

3.0 DESCRIPTION

3.1 General:

The Kalwall translucent panels (Figure 1) described in this evaluation report are factory-constructed and consist of either aluminum I-beam (Figure 1a) or TBI-H (Figure 1b) grid-core framing members sandwiched between two flat FRP facings bonded to the I-beam grid-core using adhesive described in Section 3.2.6 of this evaluation report. Kalwall translucent wall panels having TBI-H grid-core are factory-constructed and consist of Type SW FRP exterior facing and Type S-171 FRP interior facing described in Table 1. The panels are installed at the jobsite with T-battens (Figure 1c), integral stiffeners (Figure 1d), and other framing members supplied with the panels by Kalwall.

The panels are available in 8-inch-by-20-inch (203 mm by 508 mm) and 12-inch-by-24-inch (305 mm by 610 mm) aluminum I-beam or TBI-H grid-core module configurations as shown in Figure 1e, with the continuous I-beams spaced at either 8 inches (203 mm) or 12 inches (305 mm) on center, and running in the direction of the panel length for, respectively, 8-by-20 or 12-by-24 grid-core modules. The cross intermittent I-beams are spaced at either 20 inches (508 mm) or 24 inches (610 mm) on center and are in the direction of the panel width for, respectively, 8-by-20 or 12-by-24 grid-core modules. Four additional grid variations for aluminum I-beam module are available: 8-inch or 12-inch Vertikal, 8-inch or 12-inch Tuckerman, 8-inch or 12-inch Staggered and 8-inch or 12-inch Plank. These grids have the continuous members spaced at either 8 inches or 12 inches on center. These grids are used in wall applications only. The grid patterns are shown in Figure 5.

The panels with the aluminum I-beam grid-core are also available in 12-by-24 (305 mm by 610 mm) and 24-by-12 (310 mm by 305 mm) grid-core module configurations as shown in Figure 1f, with the continuous aluminum I-beams, spaced at either 12 inches (305 mm) or 24 inches (610 mm) on center, running in the direction of the panel width and the cross intermittent aluminum I-beams, spaced at either 24 inches (610 mm) or 12 inches (305 mm), running in the direction of the panel length.

The panels having aluminum grid-core framing members have a nominal thickness of $2^3/_4$ inches (70 mm) and the panels having TBI-H grid-core framing members have nominal thicknesses of $2^3/_4$ inches (70 mm) or 4 inches (108 mm). The panels are available in various widths up to 5 feet (1524 mm) and in lengths up to 20 feet (8096 mm).

3.2 Material:

3.2.1 Aluminum I-beams: The aluminum I-beams are extruded from 6005-T5 aluminum alloy. The aluminum I-beams are 2.6 inches (66 mm) high and have a

0.05-inch-thick (1.3 mm) web and flange, and a 0.43-inch-wide (11 mm) top and bottom flange. Figure 1a shows a typical aluminum I-beam.

3.2.2 Heavy Thermally Broken I-beams (TBI-H): The TBI-H is either $2^5/_8$ inches (66.7 mm) or $3^7/_8$ inches (98.4 mm) high. The TBI-H has a 0.07-inch-thick (1.78 mm) fiberglass reinforced plastic web and 0.5-inch-wide (12.7 mm) extruded aluminum top and bottom flange. The web is factory-adhered to the extruded aluminum flanges, and the flanges are also crimped onto the web. Figure 1b shows a typical TBI-H.

3.2.3 Aluminum T-Battens: The aluminum T-battens are extruded from 6063-T5 aluminum alloy and have a nominally 2-inch-wide flange. Figure 1c shows a typical T-batten.

3.2.4 Aluminum Integral Stiffeners (Iss): The aluminum integral stiffeners are extruded from 6005-T5 aluminum alloy. Figure 1d shows a typical integral stiffener.

3.2.5 Fiberglass Reinforced Plastic (FRP) Facings: The FRP facings have a smoke-developed index of 450 or less. The plastic classification and flame-spread classification each of the interior and exterior facing types are shown in Table 1.

3.2.6 Adhesive: The adhesive used to factory-adhere the FRP facings to the aluminum I-beam flanges of grid-cores is described in the approved quality control manual and is a Type I, Class 2, adhesive conforming to the ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05). The adhesive used to factory-adhere the web to the aluminum top and bottom flanges of the TBI-H is described in the approved quality control manual and is a Type I, Class 2, adhesive conforming to AC05.

3.2.7 Sealant and Caulk: Kalwall shall recommend an elastic adhesive sealant for use at panel joints to adhere flashing and a non-hardening bed caulk used between the panel perimeter and the rough opening. The recommended product shall be approved by the code official.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The design of the Kalwall translucent panels with aluminum I-beam grid-core used as roof and non-load-bearing wall panels must be in accordance with the allowable loads based on Allowable Stress Design (ASD), allowable panel spans, and panel grid-core module configurations noted in Tables 2 through 5 and Figures 1 through 4 of this evaluation report, as applicable. The design of the panels with aluminum grid-core used as skylight glazing must be in accordance with the allowable loads based on ASD, allowable panel spans, and panel grid-core configurations noted in Tables 7 and 8. The design of the Kalwall translucent panels with the TBI-H grid-core used as non-load-bearing wall panels and exterior wall glazing must be in accordance with the allowable loads based on ASD, allowable spans and panel grid core configurations noted in Table 6 and Figures 1 and 3.

The air leakage of a test assembly of three adjacent panels, each approximately 94 inches by 43 inches (2388 mm by 1092 mm), tested in accordance with ASTM E283 at an air pressure differential of 1.57 psf (75 Pa), complied with the code limit of 0.3 cfm/ft^2 (1.5 L/s/m^2). The air leakage value may vary for each jobsite installation.

The same type and size assembly, when tested for water penetration in accordance with ASTM E547 at an air pressure differential of 7.5 psf (359 Pa), had no water leakage on the interior side of the panels. The tested water penetration performance may not be representative for each jobsite installation.

4.2 Installation:

Installations of Kalwall translucent panels as exterior non-load-bearing wall panels, roof panels, exterior wall glazing, and skylight glazing must be in accordance with this report, the manufacturer's published installation instructions, and the IBC. For panels installed as exterior non-load-bearing wall panels, roof panels, and exterior wall glazing, the panels must be interconnected with either T-battens or integral stiffeners, as described in Section 3.2.3 or Section 3.2.4, respectively, with the panels set in flanges of the T-battens or integral stiffeners that are attached to aluminum extrusions installed on structural elements of the building through the panel frame at the panel ends. Aluminum extrusions used to connect panels to the structural elements of the building are provided by Kalwall. Design and details for these aluminum extrusions must be submitted to the code official for approval. Figures 2, 3 and 4 illustrate typical Kalwall translucent panel installations in roof panels, wall panels, and skylights.

4.3 Roof Classification:

The panels designated as Type A and Type SW-C comply with IBC Section 1505.2 as Class A roof coverings. Type A panels consist of the aluminum grid-core modules described in Section 3.1, sandwiched between Type A FRP exterior facing and Type 25, Type A, Type S-171, or Type B-3A FRP interior facing described in Section 3.2.5. Type SW-C panels consist of the same aluminum grid-core modules, sandwiched between Type SW-C FRP exterior facing and Type 25, Type A, Type S-171, or Type B-3A FRP interior facing described in Section 3.2.5. Fiberglass insulation described in the approved quality control manual is factory-installed in the grid-core cavities, and adhesive described in Section 3.2.6 is used to bond facings to the aluminum grid-core.

The panels used as roof panels must be installed with a minimum roof slope of 2:12. The Type A Class A roof panels must be installed without a maximum roof slope limit. The Type SW-C Class A roof panels must be installed with a maximum roof slope of 2:12. When panels are used as glazing in a single-panel skylight, the minimum slope is $^3/_8$:12.

5.0 CONDITIONS OF USE

The Kalwall translucent panels described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The panels must be fabricated, identified and installed in accordance with this report, the manufacturer's published installation instructions, and the IBC. A copy of the manufacturer's published installation instructions must be available at the jobsite at all times during installation. In the event of a conflict between the manufacturer's published installation instructions and this evaluation report, this report governs.

5.2 Maximum unsupported spans for the panels used as wall and roof panels must comply with the allowable spans given in Tables 2 through 6.

5.3 Calculations justifying spans and supports must be submitted to the code official for approval.

5.4 Where required by the code official, calculations must be prepared and sealed by a registered design professional in accordance with requirements of the jurisdiction where the project is located.

5.5 No diaphragm values are assigned to the panels. A bracing system must be provided in the plane of the roof or wall for resistance to wind and seismic loads.

5.6 The use of panels having TBI-H grid-core framing members as roof panels and skylight glazing is outside the scope of this evaluation report.

5.7 For roof panels, water accumulation or water ponding must be addressed in accordance with Footnote e of IBC Table 1604.3 to the satisfaction of the code official.

5.8 Air leakage and water penetration of panels installed in roof panels, wall panels, and skylights must be to the satisfaction of the code official.

5.9 The panels are manufactured in Manchester, New Hampshire, under a quality-control program with inspections by ICC Evaluation Service, LLC.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems (AC177), dated June 2014 (editorially revised May 2023).

6.2 Data in accordance with ASTM E108 for Class A roof covering.

7.0 IDENTIFICATION

7.1 The Kalwall translucent panels must be identified by a permanent label on the perimeter framing members bearing the panel manufacturer's name (Kalwall Corporation) and address, the plastic facing designation (interior and exterior), the plastic facing classification (CC1 or CC2), the panel grid-core type, the thickness of each plastic facing and the ICC-ES evaluation report number (ESR-2464). Type A and Type SW-C Class A roof covering panels must also include the UL listing mark on the interior and exterior facings.

7.2 Containers of framing members must be identified by labels bearing the company name (Kalwall Corporation) and address, the part name or number, and the ICC-ES evaluation report number (ESR-2464).

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

KALWALL CORPORATION
1111 CANDIA ROAD
POST OFFICE BOX 237
MANCHESTER, NEW HAMPSHIRE 03105
(603) 627-3861
www.kalwall.com

TABLE 1—PLASTIC AND FLAME-SPREAD CLASSIFICATIONS OF INTERIOR AND EXTERIOR FACING TYPES

TYPE	FACING DESIGNATION	THICKNESS (inch)	PLASTIC CLASSIFICATION	FLAME-SPREAD CLASSIFICATION
Type 25	Interior	0.045	CC1	Class A
Type A	Interior	0.045	CC1	Class A
Type B-3A	Interior	0.045	CC1	Class A
Type S-171	Interior	0.045	CC1	Class B
Type A	Exterior	0.070	CC1	Class A
Type SW-C	Exterior	0.070	CC1	Class B
Type SW	Exterior	0.070	CC2	Class C

For **SI:** 1 inch = 25.4 mm.

TABLE 2—ALLOWABLE SPANS FOR 4-FOOT-WIDE ROOF PANELS HAVING AN ALUMINUM I-BEAM GRID-CORE[1,2]

GRID AND STIFFENER	DESIGN LIVE LOAD (PSF, L/60)						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-2″	7′-8″	6′-8″	6′-0″	5′-6″	5′-1″	4′-10″
8″ x 20″ Grid	10′-6″	9′-3″	8′-3″	7′-5″	6′-9″	6′-3″	5′-11″
Continuous Grid Members Running Parallel to the Panel Width							
12″ x 24″ Grid with a $3^1/_4$″ IS	19′-9″	16′-5″	14′-4″	12′-10″	---	---	---
24″ x 12″ Grid with a $3^1/_4$″ IS	19′-9″	16′-5″	14′-4″	12′-10″	11′-9″	10′-11″	10′-3″

GRID AND STIFFENER	DESIGN WIND UPLIFT LOAD (PSF, L/60)[3,4]						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-7″	7′-10″	6′-9″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid	11′-9″	9′-7″	8′-4″	7′-5″	6′-9″	6′-3″	5′-10″
Continuous Grid Members Running Parallel to the Panel Width							
12″ x 24″ Grid with a $3^1/_4$″ IS	20′-6″	16′-9″	14′-6″	13′-0″	---	---	---
24″ x 12″ Grid with a $3^1/_4$″ IS	20′-6″	16′-9″	14′-6″	13′-0″	11′-10″	10′-11″	10′-3″

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]Refer to Section 4.3 for the minimum roof slope.

(Continued)

[2]The tabulated allowable spans are the lower of the spans based on the L/60 deflection limit and strength of panels.
[3]The tabulated wind uplift loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[4]The tabulated design wind uplift loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.

TABLE 3—ALLOWABLE SPANS FOR 4-FOOT-WIDE WALL PANELS HAVING AN ALUMINUM I-BEAM GRID-CORE[1]

GRID AND STIFFENER	DESIGN WIND LOAD (PSF, L/120)[2,3]						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid[4]	8′-4″	7′-4″	6′-8″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid[5]	9′-7″	8′-4″	7′-7″	7′-1″	6′-8″	6′-3″	5′-10″
Continuous Grid Members Running Parallel to the Panel Width							
12″ x 24″ Grid with a $3^1/_4$″ IS	18′-4″	16′-0″	14′-6″	13′-0″	---	---	---
24″x 12″ Grid with a $3^1/_4$″ IS	18′-4″	16′-0″	14′-6″	13′-0″	11′-10″	10′-11″	10′-3″

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]The tabulated allowable spans are the lower of the spans based on the L/120 deflection limit and strength of panels. The wind loads used to determine deflection-based spans are in accordance with footnote f of IBC Table 1604.3.
[2]The tabulated wind loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[3]The tabulated design wind loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.
[4]Also available in these following grid patterns (See Figure 5): 12” Vertikal, 12” x 12” Tuckerman, 12” x 24” Staggered, 12” Plank.
[5]Also available in these following grid patterns (See Figure 5): 8” Vertikal, 8” x 8” Tuckerman, 8” x 20” Staggered, 8” Plank.

TABLE 4—ALLOWABLE SPANS FOR 5-FOOT-WIDE ROOF PANELS HAVING AN ALUMINUM I-BEAM GRID-CORE[1,2]

GRID AND STIFFENER	DESIGN LIVE LOAD (PSF, L/60)						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-2″	7′-8″	6′-8″	6′-0″	5′-6″	5′-1″	4′-10″
8″ x 20″ Grid	10′-6″	9′-3″	8′-3″	7′-5″	6′-9″	6′-3″	5′-11″
Continuous Grid Members Running Parallel to the Panel Width							
12″x 24″Grid with a $3^1/_4$″ IS	17′-8″	14′-8″	---	---	---	---	---
24″ x 12″ Grid with a $3^1/_4$″ IS	17′-8″	14′-8″	12′-9″	11′-6″	10′-6″	9′-9″	---
GRID AND STIFFENER	**DESIGN WIND UPLIFT LOAD (PSF, L/60)[3,4]**						
	20	**30**	**40**	**50**	**60**	**70**	**80**
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-7″	7′-10″	6′-9″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid	11′-9″	9′-7″	8′-4″	7′-5″	6′-9″	6′-3″	5′-10″
Continuous Grid Members Running Parallel to the Panel Width							
12″ x 24″ Grid with a $3^1/_4$″ IS	18′-4″	14′-11″	---	---	---	---	---
24″ x 12″ Grid with a $3^1/_4$″ IS	18′-4″	14′-11″	12′-11″	11′-7″	10′-6″	9′-9″	---

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]Refer to Section 4.3 for the minimum roof slope.
[2]The tabulated allowable spans are the lower of the spans based on the L/60 deflection limit and strength of panels. The wind loads used to determine deflection-based spans are in accordance with footnote f of IBC Table 1604.3.
[3]The tabulated wind uplift loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3
[4]The tabulated design wind uplift loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.

TABLE 5—ALLOWABLE SPANS FOR 5-FOOT-WIDE WALL PANELS HAVING AN ALUMINUM I-BEAM CORE[1]

GRID AND STIFFENER	DESIGN WIND LOAD (PSF, L/120)[2,3]						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid[4]	8′-4″	7′-4″	6′-8″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid[5]	9′-7″	8′-4″	7′-7″	7′-1″	6′-8″	6′-3″	5′-10″
Continuous Grid Members Running Parallel to the Panel Width							
12″ x 24″ Grid with a $3^1/_4$″ IS	17′-0″	14′-10″	---	---	---	---	---
24″ x 12″ Grid with a $3^1/_4$″ IS	17′-0″	14′-10″	12′-11″	11′-7″	10′-6″	9′-9″	---

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]The tabulated allowable spans are the lower of the spans based on the L/120 deflection limit and strength of panels. The wind loads used to determine deflection-based spans are in accordance with footnote f of IBC Table 1604.3.

(Continued)

[2]The tabulated wind loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[3]The tabulated design wind loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.
[4]Also available in these following grid patterns (See Figure 5): 12" Vertikal, 12" x 12" Tuckerman, 12" x 24" Staggered, 12" Plank.
[5]Also available in these following grid patterns (See Figure 5): 8" Vertikal, 8" x 8" Tuckerman, 8" x 20" Staggered, 8" Plank.

TABLE 6—ALLOWABLE SPANS FOR 5-FOOT-WIDE WALL PANELS HAVING A TBI-H GRID-CORE[1]

GRID	DESIGN WIND LOAD (PSF, L/120)[2,3]								
	20	30	40	50	60	70	80	90	100
Continuous Grid Members Running Parallel to the Panel Length									
$2^3/_4$-inch-thick with 12″ x 24″ TBI-H Grid	9′-4″	9′-4″	8′-1″	7′-3″	6′-7″	6′-1″	5′-9″	5′-5″	5′-1″
$2^3/_4$-inch-thick with 8″ x 20″ TBI-H Grid	10′-10″	10′-9″	9′-9″	9′-1″	8′-3″	7′-8″	7′-2″	6′-9″	-
4-inch-thick with 12″ x 24″ TBI-H Grid	12′-10″	11′-0″	9′-6″	8′-6″	7′-9″	7′-2″	-	-	-
4-inch-thick with 8″ x 20″ TBI-H Grid	14′-8″	14′-6″	12′-11″	11′-7″	10′-7″	9′-9″	9′-2″	-	-

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]The tabulated allowable spans are the lower of the spans based on the L/120 deflection limit and strength of panels. The wind loads used to determine deflection-based spans are in accordance with footnote f of IBC Table 1604.3.
[2]The tabulated wind loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[3]The tabulated design wind loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.

TABLE 7—ALLOWABLE SPANS FOR 4-FOOT-WIDE PANELS HAVING AN ALUMINUM I-BEAM GRID-CORE USED AS GLAZING IN SKYLIGHTS[1,2]

GRID	DESIGN LIVE LOAD (PSF, L/60)						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-2″	7′-8″	6′-8″	6′-0″	5′-6″	5′-1″	4′-10″
8" x 20" Grid	10′-6″	9′-3″	8′-3″	7′-5″	6′-9″	6′-3″	5′-11″
GRID	**DESIGN WIND UPLIFT LOAD (PSF, L/60)[3,4]**						
	20	**30**	**40**	**50**	**60**	**70**	**80**
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-7″	7′-10″	6′-9″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid	11′-9″	9′-7″	8′-4″	7′-5″	6′-9″	6′-3″	5′-10″

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]Refer to Section 4.3 for the minimum roof slope.
[2]The tabulated allowable spans are the lower of the spans based on the L/60 deflection limit and strength of panels.
[3]The tabulated wind uplift loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[4]The tabulated design wind uplift loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.

TABLE 8—ALLOWABLE SPANS FOR 5-FOOT-WIDE PANELS HAVING AN ALUMINUM I-BEAM GRID-CORE USED AS GLAZING IN SKYLIGHTS

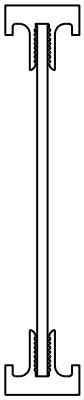
GRID	DESIGN LIVE LOAD (PSF, L/60)						
	20	30	40	50	60	70	80
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-2″	7′-8″	6′-8″	6′-0″	5′-6″	5′-1″	4′-10″
8″ x 20″ Grid	10′-6″	9′-3″	8′-3″	7′-5″	6′-9″	6′-3″	5′-11″
GRID	**DESIGN WIND UPLIFT LOAD (PSF, L/60)[3,4]**						
	20	**30**	**40**	**50**	**60**	**70**	**80**
Continuous Grid Members Running Parallel to the Panel Length							
12″ x 24″ Grid	9′-7″	7′-10″	6′-9″	6′-1″	5′-6″	5′-1″	4′-9″
8″ x 20″ Grid	11′-9″	9′-7″	8′-4″	7′-5″	6′-9″	6′-3″	5′-10″

For **SI:** 1 inch = 25. 4 mm, 1 foot = 304.8 mm, 1 psf = 47.88 Pa.
[1]Refer to Section 4.3 for the minimum roof slope.
[2]The tabulated allowable spans are the lower of the spans based on the L/60 deflection limit and strength of panels.

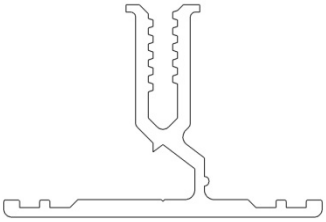
(Continued)

[3]The tabulated wind uplift loads are allowable stress design (ASD) loads and are used to determine deflection-based spans in accordance with footnote f of the 2009 and 2006 IBC Table 1604.3.
[4]The tabulated design wind uplift loads are multiplied by 1.6 when used to determine deflection-based spans in accordance with footnote f of the 2021, 2018, 2015 and 2012 IBC Table 1604.3.

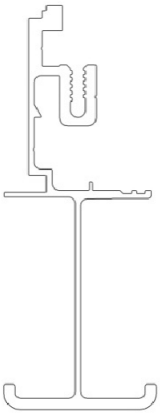
a. Aluminum I-beam



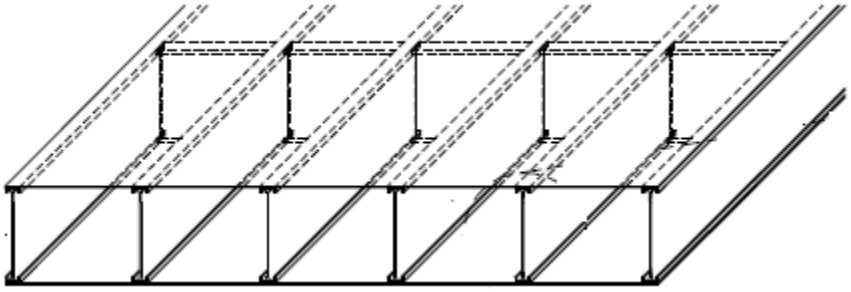
b. Heavy TB I-beam



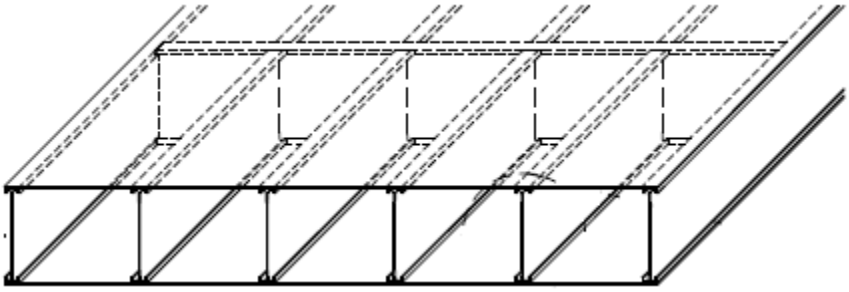
c. Aluminum T-Batten



d. Aluminum Integral Stiffener

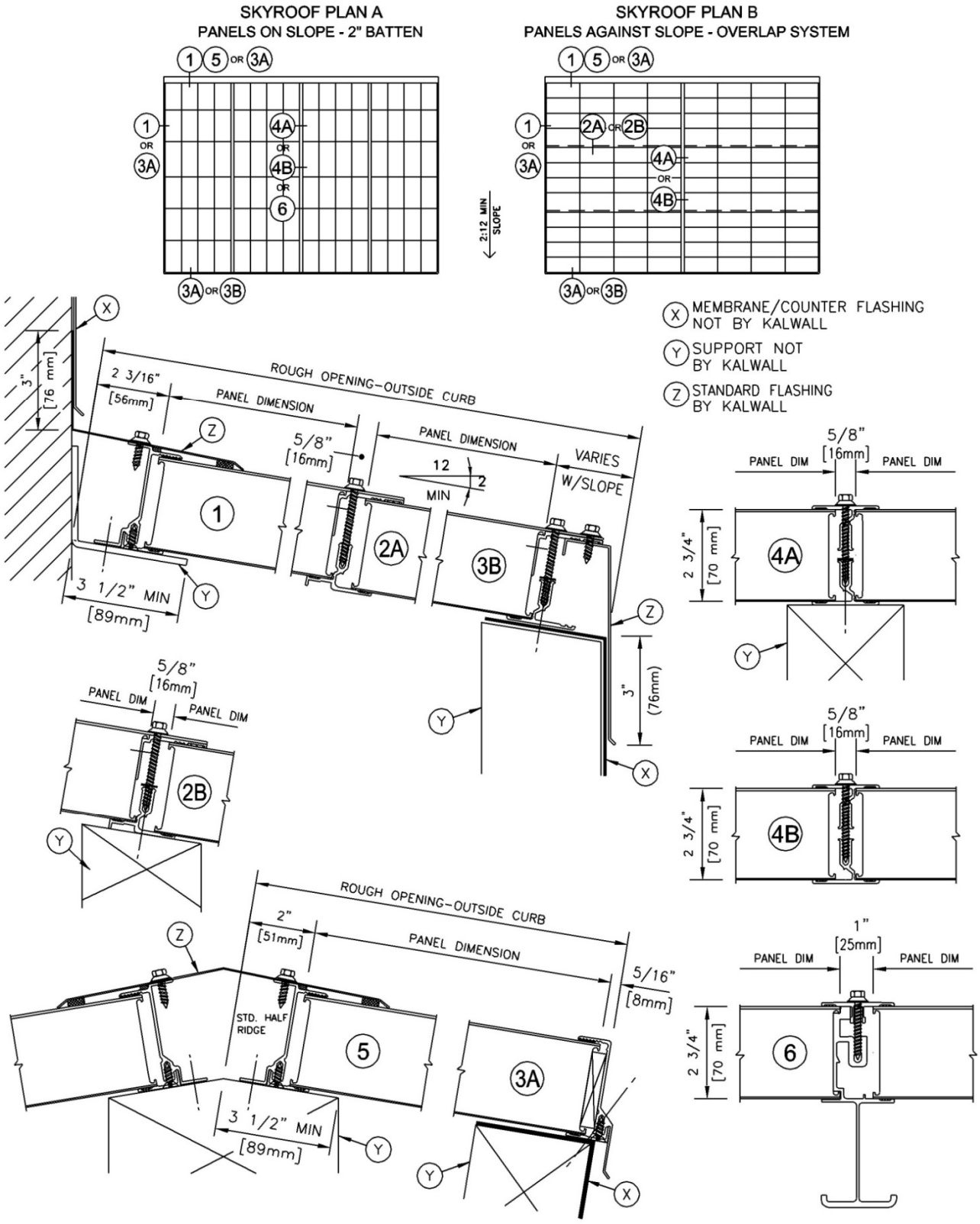


e. Panel with Continuous Aluminum I-beams Running along the Panel Length



f. Panel with Continuous Aluminum I-beams Running along the Panel Width

FIGURE 1—ALUMINUM I-BEAM, T-BATTEN, INTEGRAL STIFFENER AND TYPICAL KALWALL TRANSLUCENT PANEL CONSTRUCTION



Note:

[1]The continuous grid members in Detail 4A in Plan A and Detail 2B in Plan B must be perpendicular to the supporting beam length.
[2]Details 4A, 4B, and 6 in Plan A are typical installation of panels in roof panels.

FIGURE 2—TYPICAL PANEL INSTALLATION—ROOF PANEL

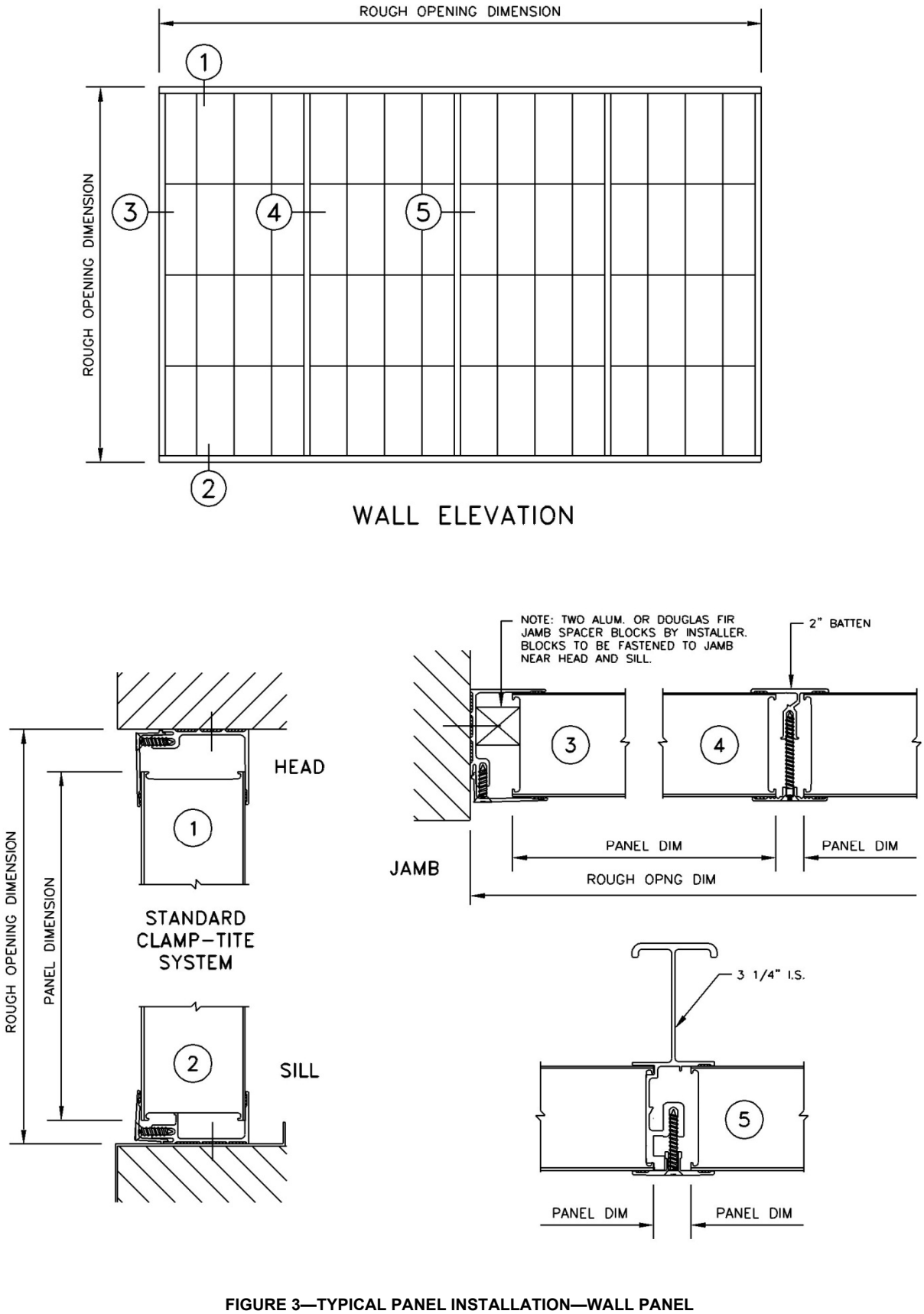
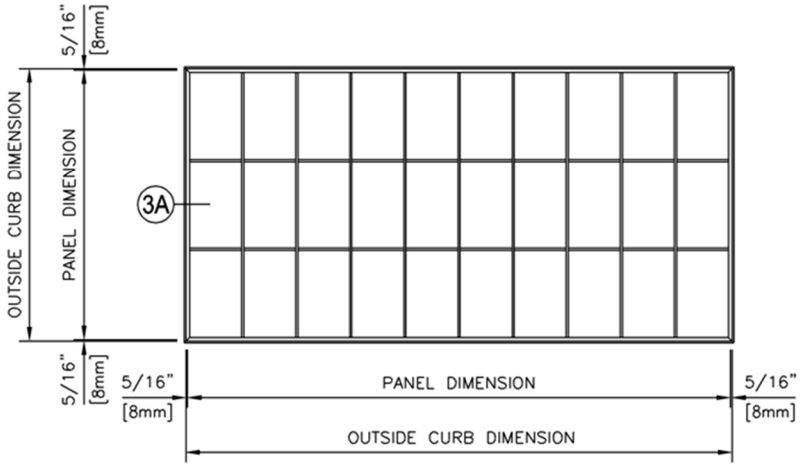


FIGURE 3—TYPICAL PANEL INSTALLATION—WALL PANEL



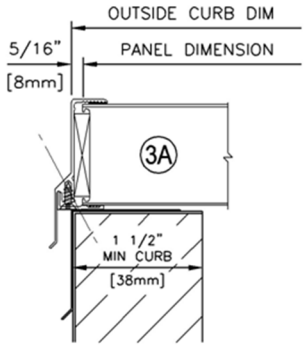


FIGURE 4—TYPICAL PANEL INSTALLATION—SKYLIGHT

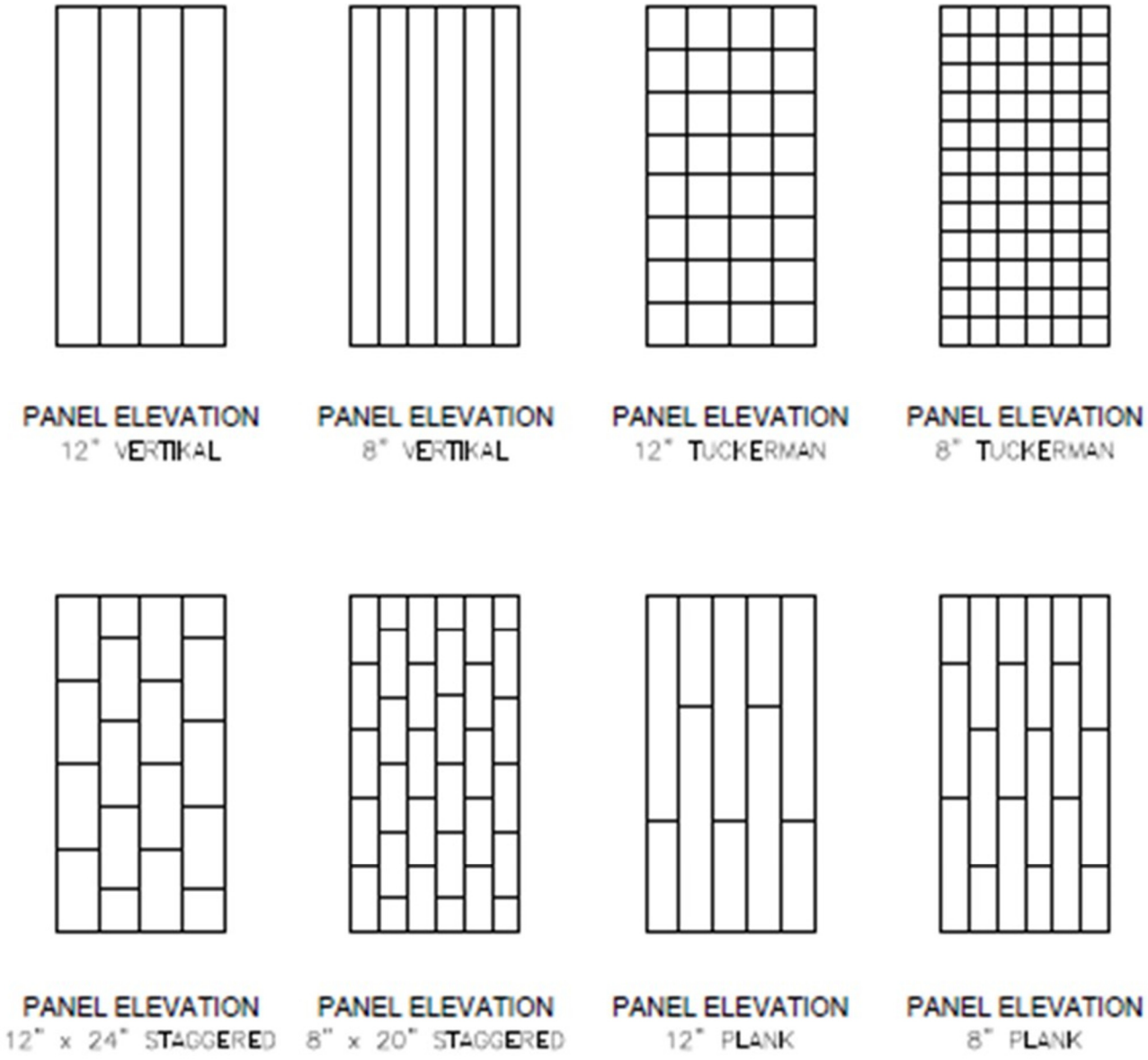


FIGURE 5—ADDITIONAL ALUMINUM I-BEAM GRID PATTERNS FOR WALL PANELS