

# ICC-ES Evaluation Report

**ESR-1277**
*Issued October 1, 2010*
*This report is subject to re-examination in one year.*
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*A Subsidiary of the International Code Council®*
**DIVISION: 08 00 00—OPENINGS**  
**Section: 08 62 00—Unit Skylights**
**REPORT HOLDER:**
**FAKRO GROUP**  
**144A WEGIERSKA STREET**  
**33-300 NOWY SACZ**  
**POLAND**  
**48-18-444-0444**  
[www.fakro.info](http://www.fakro.info)
**EVALUATION SUBJECT:**
**FAKRO FX, FV AND FVE SKYLIGHTS**
**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- 2006 *International Energy Conservation Code*® (IECC)

**Properties evaluated:**

- Structural
- Air infiltration
- Water penetration resistance
- Durability

**2.0 USES**

The Fakro FX, FV and FVE skylights described in this report are glass-glazed, unit skylights complying with IBC Section 2405.5 and IRC Section R308.6.

**3.0 DESCRIPTION**
**3.1 General:**

The skylights are factory-assembled units which consist of insulating glass glazing that is secured to wooden frames with brackets, fasteners, gasketing and aluminum cladding in accordance with the approved quality documentation.

**3.2 FX Skylights:**

The FX skylights are fixed, non-openable skylights and have either tempered-tempered or tempered-laminated insulating glass glazing, as described in Sections 3.5.1 and 3.5.2, respectively. The FX skylight is also provided as an FX-EL skylight, which is the FX skylight packaged together with an “EL” flashing accessory kit. See Table 1 for recognized skylight sizes.

**3.3 FV Skylights:**

The FV skylights have a manually operable, chain-type, roto-gear lift mechanism and hinges to allow for opening. The FV skylights have either tempered-tempered or tempered-laminated insulating glass glazing, as described in Sections 3.5.1 and 3.5.2, respectively; and an insect

screen. The FV skylight is also provided as an FV-ELA skylight, which is the FV skylight packaged together with an “ELA” flashing accessory kit. See Table 1 for recognized skylight sizes.

**3.4 FVE Skylights:**

The FVE skylights have an electronically actuated, chain-type, roto-gear lift mechanism and hinges to allow for opening. The FVE skylights have either tempered-tempered or tempered-laminated insulating glass glazing, as described in Sections 3.5.1 and 3.5.2, respectively. The FVE skylights also have an insect screen. The FVE skylight is also provided as an FVE-ELA skylight, which is the FVE skylight packaged together with an “ELA” flashing accessory kit. See Table 1 for recognized skylight sizes.

**3.5 Glazing:**

**3.5.1 Tempered-tempered Glazing:** The glazing unit consists of two panes of  $\frac{5}{32}$ -inch-thick (4 mm) tempered glass separated by a  $\frac{5}{8}$ -inch-thick (16 mm) argon gas-filled space.

**3.5.2 Tempered-laminated Glazing:** The glazing unit consists of insulating, flat-glass double-glazing, which is composed of a laminated glass inner pane, a  $\frac{5}{8}$ -inch-thick (16 mm) argon gas-filled space, and a tempered glass outer pane. The laminated glass inner pane consists of a 0.030-inch-thick (0.76 mm) polyvinyl butyral interlayer between two plies of 0.118-inch-thick (3 mm) annealed glass. The outer, tempered glass pane is  $\frac{5}{32}$  inch thick (4 mm).

**4.0 DESIGN AND INSTALLATION**
**4.1 Design:**

**4.1.1 General:** The allowable loads are expressed as performance grade rating values, PG. Under the IBC, the PG rating values must be equal to, or greater than, the maximum loads on the skylights as required by IBC Section 2405.5.2. Under the IRC, the PG rating values must be equal to, or greater than, the maximum loads on the skylights determined in accordance with IBC Section 2405.5.2, except the design wind forces must be as specified for skylights in IRC Section R301.2.1. See Table 1 for allowable positive and negative PG rating values.

**4.1.2 Air Infiltration:** The air leakage of the skylights, tested at an air pressure differential of 1.57 psf (75 Pa), complies with the maximum air leakage rate of 0.3 cfm/ft<sup>2</sup> (1.5 L/s-m<sup>2</sup>) as required in IECC Sections 402.4.2 and 502.4.1.

**4.2 Installation:**

The minimum roof slope is 3:12 (15 degrees) from the horizontal. Roof coverings must be removed at least 12 inches (305 mm) beyond openings and must be reset after the skylight is in place. The skylights must be installed over minimum 0.42 Specific Gravity wood-framed openings

designed in accordance with the applicable code. The jambs and sills of the skylight frame must be supported by roof framing members. The jambs must be fastened with six, No. 14 by 7<sup>7</sup>/<sub>8</sub>-inch-long (200 mm), flat head wood screws (three screws per jamb), placed through predrilled holes in the skylight jambs, that penetrate through the roof sheathing and into the roof framing. A self-adhering roof underlayment recognized in an ICC-ES evaluation report as complying with the ICC-ES Acceptance Criteria for Roof Underlayment for Use in Severe Climate Areas (AC48), must then be applied on the roof sheathing around the entire skylight frame, and must continue up to cover the sides of the skylight frame. The underlayment must be lapped at the corners of the skylight frame. Flashing must comply with, and be installed in accordance with, IBC Section 1507 or IRC Section 905, as applicable. Typical installation details are shown in Figure 1.

**5.0 CONDITIONS OF USE**

The Fakro FX, FV and FVE skylights 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 skylights are manufactured and installed in accordance with this report, the applicable code and the manufacturer’s published installation instructions. In the event of a conflict between this report and the manufacturer’s published installation instructions, this report governs.
- 5.2 The allowable loads (performance grades) for the skylights are as set forth in Table 1.
- 5.3 Installation of the FX, FV and FVE skylights are limited to areas permitted by IBC Section 2405 and IRC Section R308.6.

5.4 Flashing must comply with, and be installed in accordance with, IBC Section 1507 or IRC Section R905, as applicable. Compliance of the EL and ELA flashing accessory kits is outside the scope of this report.

5.5 When required by the code official, design calculations in accordance with IBC Chapter 24, as well as design calculations in accordance with the appropriate code-referenced standard for the fastener attachment of the skylight to the support framing, must be submitted for approval, demonstrating that the applied loads are less than the design values in this report. Calculations must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.6 The skylights are manufactured by Fakro, in Nowy Sacz, Poland, under a quality control program with inspections by Intertek Testing Services NA, Inc. (AA-691).

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Glass Glazed Unit Skylights and Sloped Glass Glazing (AC17), dated June 2007 (editorially revised April 2008).

**7.0 IDENTIFICATION**

The skylights are labeled with the Fakro name and address; the product code as noted in Table 1; the design pressure rating noted in Section 4.1.1 of this report; the ICC-ES evaluation report number (ESR-1277); a safety label complying with Class I, ANSI Z 35.1-1972 (warning of risk of falling); and the name of the inspection agency (Intertek Testing Services NA, Inc.). The insulating glass glazing is labeled in accordance with IBC Section 2403.1 or IRC Section R308.1, as applicable.

**TABLE 1—SKYLIGHT MODELS, OPENING DIMENSIONS AND PERFORMANCE GRADES**

PRODUCT CODE	MODEL	FRAME, inches (WF x HF) <sup>1</sup>	ROUGH OPENING, (WRO x HRO) <sup>2</sup> inches	PERFORMANCE GRADE, psf (PG Rating)	
				Positive	Negative
<b>FX and FX-EL Skylights (tempered-tempered)</b>					
68703	FX 16/46	16 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	14 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>	73	70
68706	FX 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>		
68707	FX 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>		
68708	FX 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68008	FX-EL 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68709	FX 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68009	FX-EL 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68710	FX 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>		
68010	FX-EL 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>		
68725	FX 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>		
68712	FX 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>		
68713	FX 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68714	FX 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68014	FX-EL 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68726	FX 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>	50	35
68716	FX 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>		
68718	FX 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>		
<b>FX and FX-EL Skylights (tempered-laminated)</b>					
68753	FX 16/46	16 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	14 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>	62	62
68756	FX 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>		
68757	FX 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>		
68758	FX 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68058	FX-EL 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68759	FX 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68059	FX-EL 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		

TABLE 1—SKYLIGHT MODELS, OPENING DIMENSIONS AND PERFORMANCE GRADES (Continued)

PRODUCT CODE	MODEL	FRAME, inches (WF x HF) <sup>1</sup>	ROUGH OPENING, (WRO x HRO) <sup>2</sup> inches	PERFORMANCE GRADE, psf (PG Rating)			
				Positive	Negative		
<b>FX and FX-EL Skylights (tempered-laminated) (Continued)</b>							
68760	FX 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>	62	62		
68060	FX-EL 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68775	FX 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>				
68762	FX 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68763	FX 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68764	FX 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68064	FX-EL 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68776	FX 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68766	FX 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>				
68768	FX 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				
<b>FV and FV-ELA Skylights (tempered-laminated)</b>							
68856	FV 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>	52	52		
68857	FV 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68858	FV 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68158	FV-ELA 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68859	FV 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68159	FV-ELA 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68860	FV 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68160	FV-ELA 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68875	FV 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>				
68864	FV 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68863	FV 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68864	FV 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68164	FV-ELA 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68876	FV 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68866	FV 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>				
68868	FV 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				
<b>FV and FV-ELA Skylights (tempered-tempered)</b>							
68806	FV 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>			60	50
68807	FV 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68808	FV 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68108	FV-ELA 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68809	FV 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68109	FV-ELA 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68810	FV 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68110	FV-ELA 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68825	FV 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>				
68812	FV 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68813	FV 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>	73	40		
68814	FV 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68114	FV-ELA 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68826	FV 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68816	FV 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>	56	25		
68818	FV 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				
<b>FVE and FVE-ELA Skylights (tempered-laminated)</b>							
68956	FVE 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>	50	25		
68957	FVE 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68958	FVE 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68158	FVE-ELA 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68959	FVE 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68159	FVE-ELA 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68960	FVE 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68160	FVE-ELA 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>				
68975	FVE 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>				
68962	FVE 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>				
68963	FVE 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>	70	25		
68964	FVE 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68264	FVE-ELA 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>				
68976	FVE 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>				
68966	FVE 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>	36	20		
68968	FVE 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>				

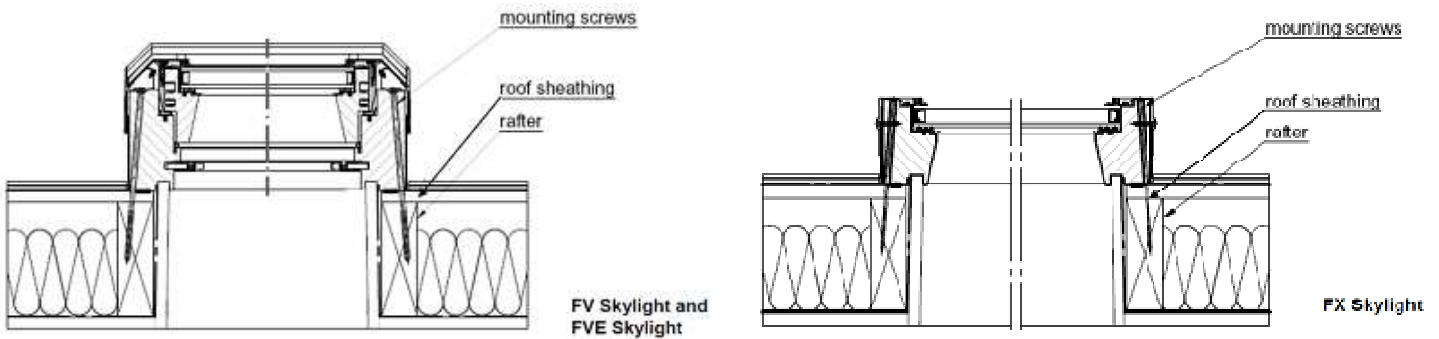
TABLE 1—SKYLIGHT MODELS, OPENING DIMENSIONS AND PERFORMANCE GRADES (Continued)

PRODUCT CODE	MODEL	FRAME, inches (WF x HF) <sup>1</sup>	ROUGH OPENING, (WRO x HRO) <sup>2</sup> inches	PERFORMANCE GRADE, psf (PG Rating)	
				Positive	Negative
<b>FVE and FVE-ELA Skylights (tempered-tempered)</b>					
68906	FVE 24/27	24 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 26 <sup>11</sup> / <sub>16</sub>	73	25
68907	FVE 24/38	24 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	22 <sup>3</sup> / <sub>8</sub> x 37 <sup>11</sup> / <sub>16</sub>		
68908	FVE 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68108	FVE-ELA 24/46	24 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>8</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68909	FVE 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68109	FVE-ELA 24/55	24 <sup>1</sup> / <sub>2</sub> x 55	22 <sup>3</sup> / <sub>8</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68910	FVE 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>		
68110	FVE-ELA 24/70	24 <sup>1</sup> / <sub>2</sub> x 70 <sup>3</sup> / <sub>4</sub>	22 <sup>3</sup> / <sub>8</sub> x 69 <sup>29</sup> / <sub>32</sub>	73	25
68925	FVE 32/31	32 <sup>1</sup> / <sub>2</sub> x 31	30 <sup>11</sup> / <sub>32</sub> x 30 <sup>3</sup> / <sub>16</sub>		
68912	FVE 32/38	32 <sup>1</sup> / <sub>2</sub> x 38 <sup>1</sup> / <sub>2</sub>	30 <sup>11</sup> / <sub>32</sub> x 37 <sup>11</sup> / <sub>16</sub>		
68913	FVE 32/46	32 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	30 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68914	FVE 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>		
68114	FVE-ELA 32/55	32 <sup>1</sup> / <sub>2</sub> x 55	30 <sup>11</sup> / <sub>32</sub> x 54 <sup>3</sup> / <sub>16</sub>	73	11
68926	FVE 47/46	47 <sup>3</sup> / <sub>8</sub> x 46 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>4</sub> x 45 <sup>9</sup> / <sub>16</sub>		
68916	FVE 48/27	48 <sup>1</sup> / <sub>2</sub> x 27 <sup>1</sup> / <sub>2</sub>	46 <sup>11</sup> / <sub>32</sub> x 26 <sup>11</sup> / <sub>16</sub>		
68918	FVE 48/46	48 <sup>1</sup> / <sub>2</sub> x 46 <sup>3</sup> / <sub>8</sub>	46 <sup>11</sup> / <sub>32</sub> x 45 <sup>9</sup> / <sub>16</sub>		

For SI: 1 inch = 25.4 mm; 1 psf = 47.88 Pa.

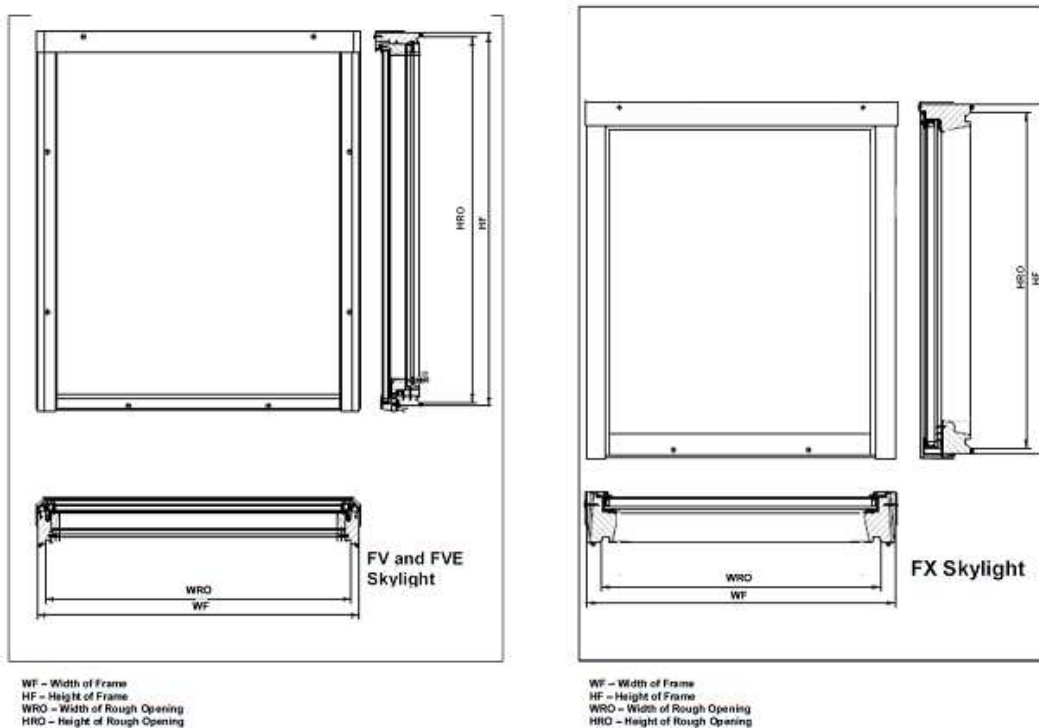
<sup>1</sup>WF x HF = Width of Frame x Height of Frame (see Figure 2).

<sup>2</sup>WRO x HRO = Width of Rough Opening x Height of Rough Opening (see Figure 2).



Note: The skylights must be installed over framed openings, i.e. the jambs and sills of the skylights must be supported by roof framing members.

FIGURE 1—TYPICAL INSTALLATION DETAILS



WF – Width of Frame  
 HF – Height of Frame  
 WRO – Width of Rough Opening  
 HRO – Height of Rough Opening

WF – Width of Frame  
 HF – Height of Frame  
 WRO – Width of Rough Opening  
 HRO – Height of Rough Opening

FIGURE 2—SKYLIGHT OPENING DIMENSIONS