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DIVISION: 08—DOORS AND WINDOWS
Section: 08620—Unit Skylights

REPORT HOLDER:

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EVALUATION SUBJECT:

SOLATUBE TUBULAR SKYLIGHTS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2000 *International Building Code*® (IBC)
- 2000 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)

Properties evaluated:

- Durability
- Structural
- Weather resistance

2.0 USES

The Solatube skylights described in this report are plastic-glazed tubular skylights complying with Chapters 24 and 26 of the IBC and UBC and Section R308.6 of the IRC.

3.0 DESCRIPTION

Solatube skylights are tubular skylights consisting of a clear acrylic light-transmitting dome with an internal curved reflector; a roof-mounted support base (flashing); an upper-tube-supporting element (dome-ring); reflective light-conducting tubing of either adjustable 0-to-30-degree elbows, 0-to-90 degree elbows, and/or straight extension tubes; a lower-tube-supporting element (either ceiling ring or round-to-square-transition); and a ceiling-mounted light-diffusing assembly (diffuser). The Solatube skylights are available in 10-, 14- or 21-inch-diameter (254, 256 or 533 mm) models. See Figure 1 and Table 1 of this report for additional details.

4.0 INSTALLATION

4.1 General:

The Solatube skylights are prepackaged for field installation, with all components, attachments, and instructions in the shipping carton. A 10.5-, 14.5- or 22-inch-diameter (267, 368 or 559 mm) round hole, for the 10-, 14- and 21-inch-diameter

(254, 256 or 533 mm) skylights, respectively, shall be cut in the roof sheathing and ceiling below the attic space. The skylight support base shall be attached to the roof sheathing using eight No. 10 by 2-inch-long (51 mm) stainless steel or dactrotized-finish steel sheet metal screws for the 10- and 14-inch (254 and 256 mm) units, and sixteen screws for the 21-inch (533 mm) unit. A felt or foam weather seal shall be adhered to the top edge of the skylight support base. The reflective top tube with attached dome ring shall then be inserted into the skylight support base opening. A curved reflector shall be mounted inside the dome. The dome shall be secured to the support base using four No. 8 by ³/₄-inch-long (19 mm) stainless steel or dactrotized-finish steel pan or truss head sheet metal screws for the 10- and 14-inch (254 and 256 mm) units, and six No. 8 by ³/₄-inch-long (19 mm) screws for the 21-inch (533 mm) unit. The 10- and 14-inch (254 and 256 mm) units terminate at the ceiling into the ceiling ring installed, using four No. 6 by 1⁵/₈-inch-long (41 mm) corrosion resistant, bugle head, drywall screws and four plastic self-locking anchors or four plastic anchors only. See Figure 2 of this report for additional details. The 21-inch (533 mm) unit terminates at the ceiling into a square-to-round plastic transition box set into the framework on a suspended T-bar ceiling system, or is installed into a gypsum ceiling using four No. 6 by 1⁵/₈-inch-long (41 mm) corrosion resistant, bugle head drywall screws. See Figure 6 of this report for additional details. The 10- and 14-inch-diameter (254 and 256 mm) light diffusers shall be secured onto the ABS ceiling ring by means of a one-eighth clockwise turn or by means of four plastic diffuser clips. The 21-inch (533 mm) light diffuser shall be secured onto the square-to-round transition box by means of four diffuser latches or, for the 21-inch (533 mm) open ceiling light diffuser, by means of four plastic diffuser clips.

The lowest edge of the support base turret opening shall be at least 4 inches (102 mm) above the plane of the roof covering. This may be accomplished with installation of the optional Solatube 2-inch-high (51 mm) galvanized or aluminized-steel turret extension. See Figure 3 of this report for additional details. The 4-inch (102 mm) clearance requirement and the turret extension are not required on roofs of Group R, Division 3 (UBC) or Group R-3 (IBC), occupancy with a minimum slope of 3:12 (25%).

Where a Class A, B or C roof covering is required, skylight dome edges shall be protected with the application of galvanized or aluminized steel, dome-edge protective rings, as shown in Figure 4 of this report, with the exception of the 21-inch (533 mm) unit with 8-inch- (203 mm) or 11-inch-high (279 mm) flashing, or any model with curb-mount flashing on curbs a minimum of 8 inches (203 mm) high.

4.2 Tile Roofs:

For installation on a tile roof, a “dead-soft” 0.020-inch-thick (0.51 mm) plated aluminum sheet shall be used as malleable counter-flashing. After the appropriately sized hole for the 10- or 14-inch (254 and 256 mm) Solatube skylight is

cut in the roof sheathing, a metal base flashing shall be placed over the hole and secured in place using eight No. 10 by 2-inch-long (51 mm) stainless steel or dactroized-finish steel panhead sheet metal screws. See Figure 5 of this report for additional details. Tiles surrounding the flashing are cut according to the profile of the flashing, with a maximum clearance of 1/2 inch (12.7 mm) from the flashing. The pleated aluminum sheet, with a circular hole cut in the center to match the flashing, shall be placed over the flashing. A galvanized or aluminized steel turret extension ring shall be placed over the opening of the base flashing, sandwiching the aluminum sheet between the flashing and turret extension ring. The aluminum sheet shall then be secured to the top of the tiles in the course below using non-alkaline and non-acidic tile mastic. The remaining sheet shall be tucked under the tiles in the upper course.

When installing the system with high-profile tiles, the upper and side edges of the pleated aluminum shall be bent up to form a "bird stop" and water seal under the upper course tiles and surrounding field tiles.

4.3 Allowable Loads:

The allowable positive and negative loads for the 10- and 14-inch-diameter (254 and 356 mm) skylights is 100 psf (4.79 kPa), and 35 psf (1.67 kPa) for the 21-inch-diameter (533 mm) skylight.

5.0 CONDITIONS OF USE

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

5.1 Installation shall be in accordance with this report, Section 2405 of the IBC, Section R308.6 of the IRC and Sections 2409 and 2603.7 of the UBC, as applicable, 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 shall govern.

5.2 The maximum positive and negative loads shall be as described in Section 4.3 of this report.

5.3 The use of the skylights as a component of fire-resistance-rated assemblies is outside the scope of this report.

6.0 EVIDENCE SUBMITTED

6.1 Manufacturer's published installation instructions.

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Plastic Skylights (AC16), dated October 2003.

6.3 A quality control manual.

7.0 IDENTIFICATION

Solatube skylight components shall be packaged in boxes bearing the Solatube name and address and the evaluation report number (ESR-1334). Additionally, each skylight shall have a permanent label, conspicuously located, that bears the Solatube name and address, the evaluation report number, the plastic classification (CC-2) and the thickness of the plastic glazing material prior to forming. The 21-inch-diameter (533 mm) skylight shall also have a safety label applied to each unit, warning of the risk of fall.

TABLE 1—SOLATUBE SKYLIGHT MATERIAL COMPONENTS

COMPONENTS	SKYLIGHT DIAMETER		
	10-INCH	14-INCH	21-INCH
Dome—Atofina, Plexiglas DR 101 acrylic, 0.125 inch thick, CC-2. See ICC-ES evaluation report ER-1084	X	X	
Dome—Atofina, Plexiglas DR 101 acrylic, 0.143 inch thick, CC-2. See ICC-ES evaluation report ER-1084			X
Support base—Galvanized or aluminized steel, 0.030 inch thick	X	X	X
Turret extension—Galvanized or aluminized steel (0.032 inch thick)	X		
Turret extension ring—Galvanized or aluminized steel (0.030 inch thick)	X	X	
Square-to-round transition lower tube supporting element—Polypropylene, PVC or ABS plastic (0.060 inch thick)			X
Dome edge protective ring—Galvanized or aluminized steel (0.040 inch thick)	X	X	X
Tile roof kit (0.020-inch-thick, dead soft, pleated aluminum sheet)	X	X	
Aluminum reflective tube, 0.020 inch thick (polished)	X	X	X
Light diffuser—Acrylic, 0.100 inch thick, CC2	X	X	X

For SI: 1 inch = 25.4 mm.

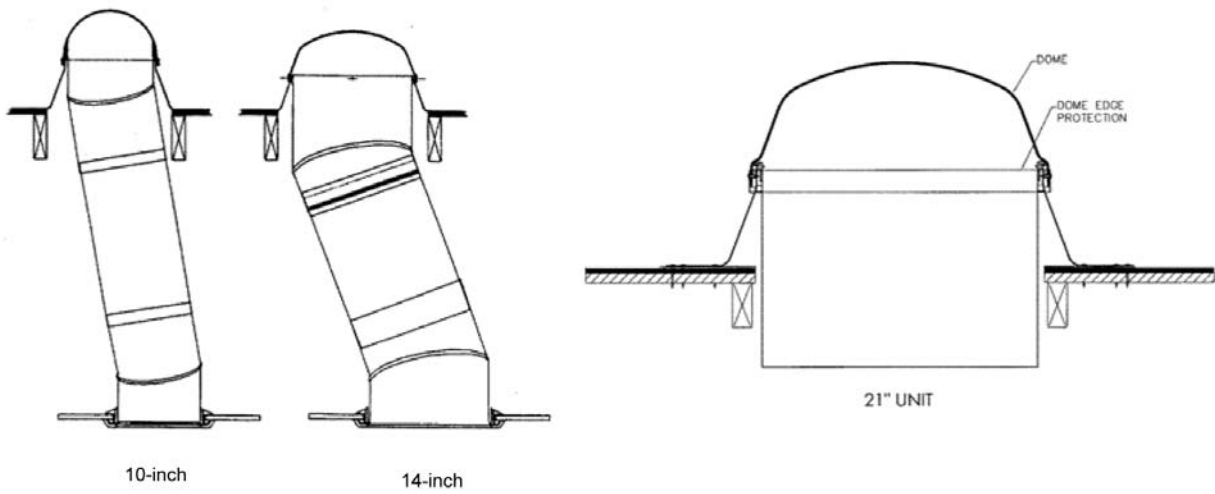


FIGURE 1—SOLATUBE 10-, 14- AND 21-INCH UNITS

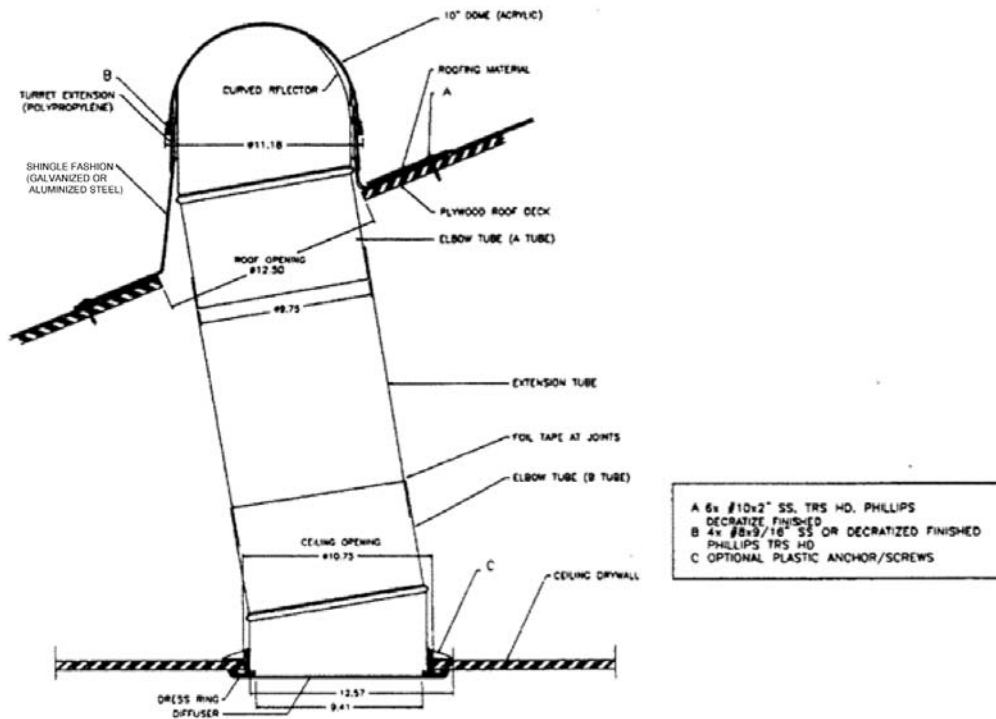


FIGURE 2—DETAILED DESCRIPTION OF 10-INCH SOLATUBE

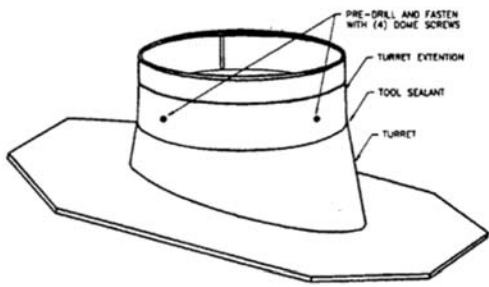
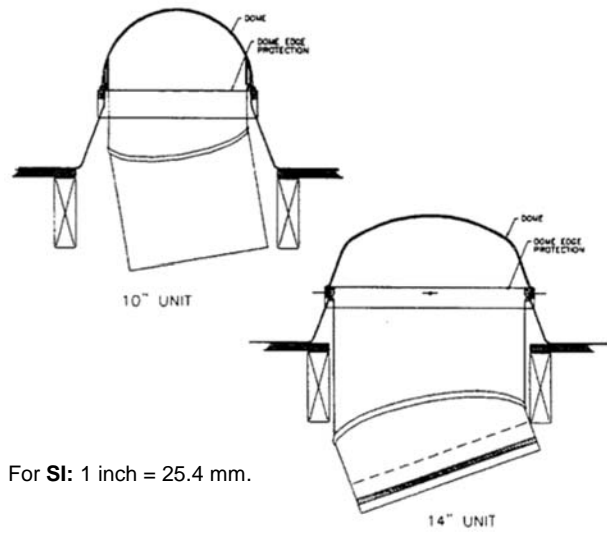
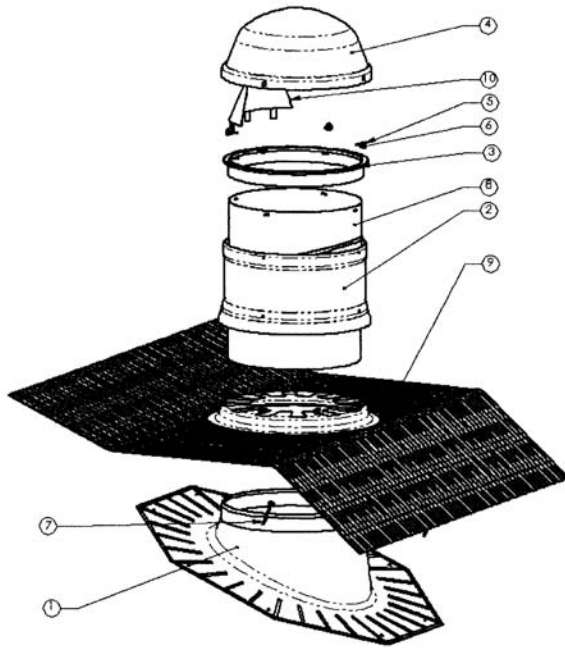


FIGURE 3—TURRET EXTENSION



For SI: 1 inch = 25.4 mm.

FIGURE 4—10- AND 14-INCH SOLATUBE DOME RING



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	BASE FLASHING	STEEL, PITCHED
2	1	TURRET EXTENSION	STEEL, FOR TILE
3	1	DOME RING	PLASTIC
4	1	DOME	PLASTIC
5	4	SPACER	PLASTIC
6	12	#8 SELF PIERCE SCREW	STEEL, DACROTIZED
7	6	#10 SM SCREW	STEEL, DACROTIZED
8	1	TUBE, TOP ANGLE ADAPTER	ALUMINUM
9	1	FLASHING, MALABLE	ALUMINUM, PLEATED SHEET
10	1	L.I.T.D. (REFLECTOR)	ALUMINUM

FIGURE 5—TILE ROOF INSTALLATION PROCEDURE

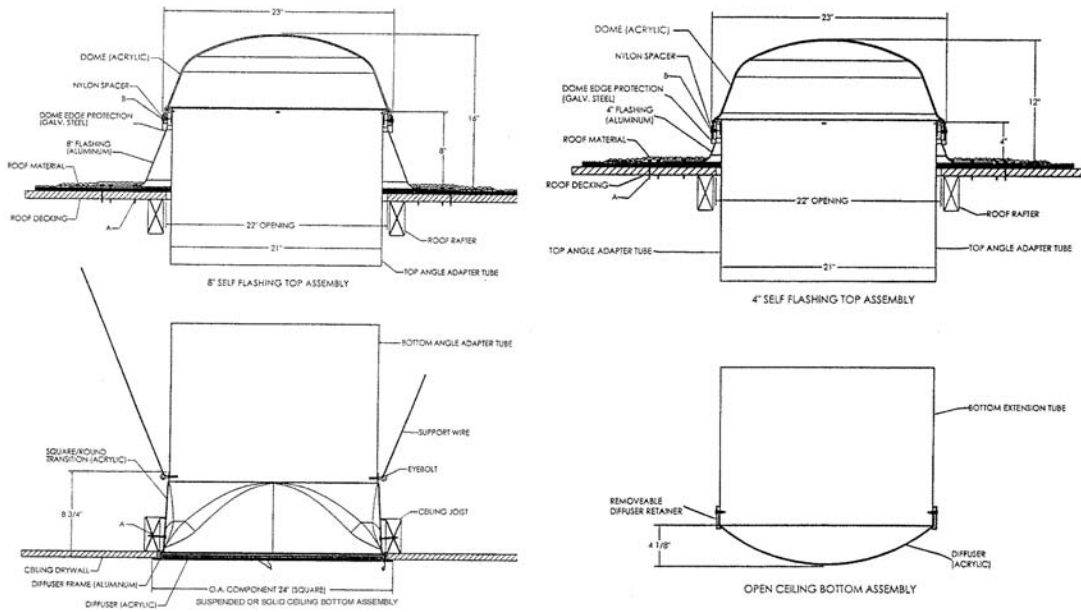


FIGURE 6—TYPICAL INSTALLATION OF 21-INCH UNIT (INCLUDING DOME RING)