Skylight Options and Accessories

by John D. Wagner

Otherwise "standard" skylights now feature more versatile flashing kits, motorized controls, and custom shapes and sizes

Over the past 25 years, makers of skylights and roof windows have standardized their products so that most offer the same basic sizes and configurations. Glazing options have also become standardized — most skylights these days are glazed with argon-filled, low-e glass — so R-value is less of a distinguishing feature than it used to be.

As the differences among brands have diminished, skylight manufacturers eager for more market share have expanded into specialty coatings and flashings, increasingly sophisticated remote-control devices, and accessories like hidden motors and high-efficiency hand cranks. The once time-consuming process of getting custom skylight sizes has given way to responsive companies offering one- or two-week turnaround for any size skylight. Let's take a closer look at what's new.

Flashing

Flashing kits haven't changed much recently, but existing configurations have improved and the number of standard offerings has grown. Stock flashing treatments from Andersen Windows and Roto Frank of America, two leading manufacturers, are typical. Both offer aluminum flashing units for low-profile wood or asphalt shingles, along with flashing for roofing tile or wood shakes up to 2 inches high. Both companies also offer curb flashing, which may be required for skylight or roof window installation in roof slopes between 2/12 and 4/12 to raise the angle for better drainage (see Figure 1).

In addition, Roto Frank and Andersen both offer special field-applied channel flashing for roof windows that are mounted side by side or stacked one above the other (Figure 2). Both companies also make an auxiliary water deflector, which they claim prevents water and ice infiltration at the top of the skylight or roof window in roof pitches steeper than 20/12.

Velux has concentrated its development efforts on flashings for metal and tile roofs. In January 1996, the company introduced Type EDM flashing, designed for metal roofs of any profile, and by June of this year it will add a "combi-installation flashing"

ROTO FRANK

Figure 1. *For better drainage on low-slope roofs, you may need to raise the angle of the skylight with a curb flashing.*

ANDERSEN

Figure 2. *Skylights mounted side by side or one above the other need special "mullion" flashings between units.*

for side-by-side skylight installation on metal roofs. Another recent addition, Type EDW tile flashing, features a pleated lead apron and additional lead links that can be pressed around any tile profile (Figure 3).

Copper flashing. Velux is also the only skylight manufacturer to stock copper flashing as a high-end alternative. The copper flashing is 30% more expensive and adds a week to turnaround time (currently three days, according to Velux).

VELUX-AMERICA

Figure 3. *Velux recently introduced a pleated lead flashing that works with tile roofs of any profile.*

Roto Frank plans to bring out a stock copper flashing in 1996. "It really doesn't offer higher performance," says Dana Fargnoli, Roto Frank's engineering manager. "It's strictly for looks."

Andersen doesn't supply copper flashing, but the company will recommend a copper fabricator who is familiar with Andersen products. However, Andersen will not coordinate any part of the work, and the copper will cost 30% more than standard flashing.

Shades and Screens

The main objective of shades and screens (Figure 4) is to keep the heat, light, and UV rays out of interior spaces in the summer and to retain heat in the winter. Kenergy Skylight, for example, uses a pleated shade in conjunction with its high-performance SunPlus4 glazing; the company claims the system cuts down ultraviolet light by 96%. In addition to pleated shades and traditional roller shades, Velux also offers Venetian blind-type shades, while Roto Frank uses a tightly woven fabric "sun screen."

Pella's skylight blind system is unique. "Raise and Lower Slimshade Blinds" are pleated or aluminum-slat blinds that are sealed *between* the panes of glass, where they are protected from dirt and damage. The blinds can be controlled by a built-in hand crank, a motor, or a draw cord. Pella claims the blinds cut winter heat loss by up to 52% and summer heat gain by up to 42%.

Hand Cranks and Accessories

Using hand- or pole-cranks to operate skylights is an old technology, so manufacturers have turned their attention first to making the cranks less visible, then to making them easier to use. Both Roto Frank and Andersen have hidden the gear box out of sight behind the frame; only the handle protrudes. Andersen also claims its hand cranks reduce the number of revolutions required to open or close a window from as many as 28 revolutions for some competitors to just 13.

For hard-to-reach locations, Andersen offers a hex-socket adaptor kit that fits on the end of an extension pole. The adaptor replaces the operator handle and comes off when not in use. For windows installed in steep-pitched roofs, the head of the extension pole is flexible. Many manufacturers also offer telescoping poles, or control rods, up to 10 feet long. Velux also offers a motorized control rod, to reduce fatigue opening or closing multiple windows (Figure 5). The battery-powered rod sits in its charger when not in use.

Motorized skylights. All major skylight manufacturers offer motorized shade and skylight controls for automatic or

remote operation (Figure 6). Typically, each control module can control three or four skylights, though each skylight must have its own motor. Control modules cost between $285 and $400; low-volt DC motors (the most common type) cost from $80 to $100 each. Most motorized systems are exposed, though Roto Frank makes a motor that can be concealed behind a pine veneer, and other manufacturers offer decorative covers to hide the exposed metal motor housing.

Control modules can be programmed to open skylights to preset positions or for opening and closing shades. Tap the module button once and it will open the skylight to the first setting; tap it twice and the window moves to the second setting. Or you can override the program to select any window position.

The control modules fit within a standard single-gang electrical box and accept standard switch plates. Color-matching buttons are available for the modules so you can match them to the switch plates. The distance from the window to the module can be as much as 150 feet, and many models come with hand-held remote controls, like those used on a VCR.

The Truth Sentry 2000 motorized skylight controller offers two innovative safety features: The motor will not operate when the skylight screen has been removed, which prevents anyone reaching through the skylight opening from being accidentally pinched. Also, if the skylight hits your hand, a tree limb, or other obstruction while closing, the motor reverses direction. The Sentry 2000 is available on skylights from American, Crestline, Kenergy, Thermo-Vu, and others.

A number of other control options have become standard. Skylights equipped with a rain sensor will close automatically at the first sign of rain, an errant lawn sprinkler, or other excessive moisture. Rain sensors cost an additional $100, though you only need one sensor per control module. Control modules can also be wired to smoke alarms or thermostats, so the skylights will close in case of fire or sudden temperature drops.

All of the remote motorized open-and-close systems that work on skylights also work with shades. All the leading manufacturers have systems that automatically open and close shades and

Figure 4. *To reduce heat loss at night and fading from ultraviolet light, skylight manufacturers offer pleated shades (left) or Venetian blinds (middle) as options. Pella's unique Slimshade Blinds (right) are sealed between the skylight glazing to protect them from dirt and damage.*

Venetian blinds. Rollers are still controlled manually by a draw cord.

Custom Sizing and Colors

Though many skylight manufacturers have large offerings of stock sizes — Pella stocks 21 fixed units and 7 venting units — you may need custom sizes now and then. This is one area where it makes a big difference in cost and lead time, depending on which company you buy from. American Skylites, for example, has stock modular sizing for 12-, 16, and 24-inch on-center framing, but if you need custom, they're tooled up for it. The company supplies a size chart to help with the design and claims a two-week turnaround for custom sizes. Crestline Windows also claims two-week lead time for a custom order. In both cases, the cost for a custom skylight is very reasonable. Crestline's pricing policy for skylights is similar to its policy for regular windows: You pay for the basic window, plus an upcharge for a change in the height or width (Crestline charges separately for each change in dimension, usually between $75 and $100).

Velux will custom-size, too, but the cost is much higher. For example, a

Figure 5. *This battery-powered control rod from Velux works like an oversized cordless screwdriver to open and close skylights. When not in use, it stores in its charger.*

Figure 6. *Motorized openers for remote operation are available from most manufacturers, though they may add $400 to $500 to the cost of the skylight.*

standard 21 1/2x46 3/8 skylight costs about $176; but if you custom-order a skylight just one inch larger in either dimension, the skylight would cost almost $1,100.

Crestline Windows and American Skylites have also joined a growing number of manufacturers that offer custom cladding colors. Whereas Velux offers a single brownish gray cladding, Crestline and American can work from a paint chip or a pantone number to deliver cladding to your color specs. American Skylites uses Kynar 500 (the industry's paint of choice); Crestline uses a proprietary baked-on epoxy-based enamel.

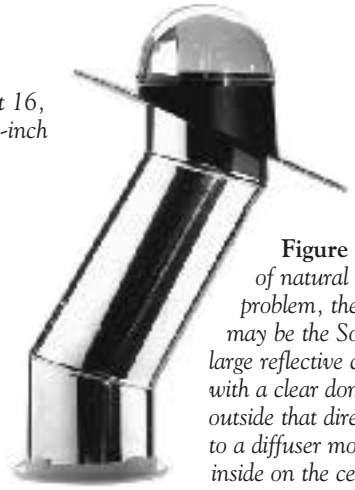
New Concepts

A number of companies have introduced new skylight shapes and even entirely new concepts. In the odd-size-window department, Roto Frank has a stock horizontal roof window — the Hilight H-19 — measuring 44x27 inches (see *For What It's Worth*, 9/92). Roto Frank also makes a new Sweet 16 skylight that's designed to drop between 16-inch on-center rafters (Figure 7). Though this size is available from other companies, such as Crestline, as a custom offering, Roto Frank offers it as stock, ready for shipping.

Wisconsin Solar Design is a custom skylight shop that offers residential builders commercial-quality skylights made entirely of aluminum. The company says it can produce any shape or size, from pyramid and barrel vault to odd-shaped frames. The skylights come with whatever glazing you spec. The framework is entirely extruded aluminum, featuring concealed stainless-steel fasteners and friction-fit exterior covers. The units are shipped ready to install in standard built-up curbs.

ROTO FRANK

Figure 7. *Very narrow skylights are usually a custom order, but Roto Frank stocks the Sweet 16, which fits between 16-inch on-center rafters.*



SOLATUBE

Figure 8. *If lack of natural light is the problem, the answer may be the Solatube, a large reflective conduit with a clear dome on the outside that directs sunlight to a diffuser mounted inside on the ceiling.*

Alpine Windows' new Series 980 skylight is all vinyl — no wood, no stiffening rods, no aluminum. The vinyl is heat-fusion welded at the corners. It's bronze-colored on the outside, white on the inside. The windows are installed in a standard built-up curb (no flashing is supplied). The 980 skylight has predrilled installation holes and features tempered low-e argon-filled glass as standard glazing. The result, according to the manufacturer, is a maintenance-free, condensation-resistant product.

Finally, one entirely new concept in roof windows has recently appeared on the market. The Solatube is an aluminum tube that runs from the roof to an interior ceiling (Figure 8). It acts as a large reflective conduit that brings light (but not air) to interior rooms. At the roof, a clear dome covers an adjustable curved reflector that catches light and sends it down the tube. On the interior, a dual-glazed diffuser covers the tube; it looks like a can light, but the light source is the sun. Solatube makes elbow and straight pieces, as well as flashing kits for wood and asphalt shingles, wood shingles and shakes, and tile roofs. Flashing kits are also available for flat roofs and cement roofs. ■

Freelance writer John D. Wagner is a frequent contributor to the Journal of Light Construction.

Skylight Manufacturers

Alpine Windows
19720 Bothell Everett Hwy.
Bothell, WA 98012
206/743-7400

Crestline Windows and Patio Doors
730 Third St.
Wausau, WI 54402
800/444-1090

Roto Frank of America
P.O. Box 599
Research Park, CT 06412
800/243-0893

Velux-America
P.O. Box 5001
Greenwood, SC 29648
800/283-2831

American Skylites
7451 Dogwood Park
Fort Worth, TX 76118
800/772-7401

Kenergy Skylights
P.O. Box 8007
Wausau, WI 54402
800/347-9334

Solatube
5825 Avenida Encinas, Suite 101
Carlsbad, CA 92008
800/773-7652

Ventarama Skylight Corp.
425 Underhill Blvd.
Syosset, NY 11791-3413
800/237-8096

Andersen Windows
100 Fourth Ave. North
Bayport, MN 55003-1096
800/426-4261

Pella Corporation
102 Main St.
Pella, IA 50219
515/628-1000

Thermo-Vu Skylights
51 Rodeo Dr.
Edgewood, NY 11717
800/883-5483

Wisconsin Solar Design
6349 Briarcliff Ln.
Middletown, WI 53562
414/444-1639