

**VELUX®**

Skylights

# Commercial skylights



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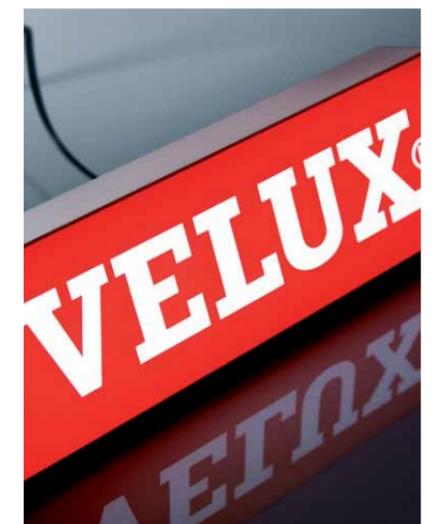
## Why VELUX

After more than 60 years, VELUX continues to be a leader in the roof window and skylight industry.

VELUX is the preferred brand for American contractors according to every national survey of building industry professionals.

VELUX holds more than 300 patents in roof window and skylight design.

- One stop supplier for all of your commercial skylight needs
- VELUX extrudes only high quality acrylic that does not become yellow or brittle over time
- 10 year warranty on acrylic color
- Efficient post-sale product support
- Architectural drawings and test data available on request
- Fast custom quoting process
- Short lead time for custom products
- Local sales and marketing support
- Lighting and energy savings analysis available



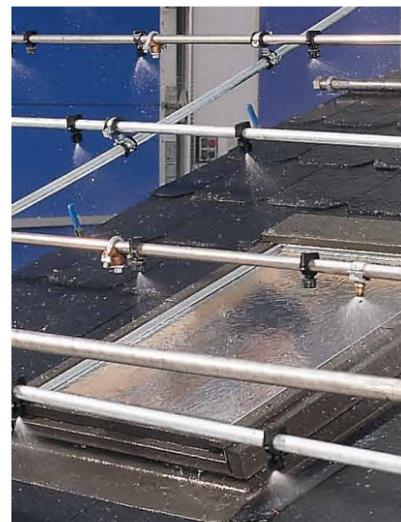
## Leadership

Technological developments have revolutionized the window and skylight industry. Since 1941, VELUX has lead the skylight industry throughout the world and is now the world's largest manufacturer of skylights.

Today, with offices in more than 40 countries, we manufacture and sell energy efficient, durable skylights on all five continents from the United States to China and from Norway to Australia!

## Leakproof

VELUX has been engineering and manufacturing skylights to withstand the harshest of elements. Each product is subjected to rigorous air, water, and pressure testing before ever being brought to market. Each skylight is then combined with a custom tailored flashing system. That's why VELUX is the world leader and the preferred skylight brand worldwide.



## Energy savings and daylight harvesting

Artificial lighting is one of the largest sources of energy consumption in commercial and industrial applications. On average, artificial lighting accounts for 40% of the building's total energy. Utilizing high visible light transmittance VELUX acrylic skylights has been shown to significantly reduce these energy costs through the benefits of daylighting.

Typically, proper design of a skylit building results in a skylight-to-floor ratio (SFR) of between 4% - 6%. With proper design, the cost of skylights is typically paid back in less than two years. This is because high visible light transmitting skylights from VELUX allow artificial lighting to be turned off on average of 70% - 80% of the time.

VELUX can help you determine the correct number of skylights to achieve maximum energy savings or obtain a desired lighting level.

## Being environmentally responsible

High quality skylights are an important part of building today's green buildings. The effect that natural light has on you physically, emotionally and psychologically is well documented. The benefits of natural light can have a profound impact on you personally, while the stewardship of VELUX will positively affect our environment for future generations.

Talk to your contractor and architect about including these healthy, energy saving options in your next building project.

## Manufacturing sensitivity

As a worldwide steward of the environment, VELUX understands the importance of a green friendly manufacturing policy. As a result, all areas of our process, including product design, raw materials, production methods and the use of technologically advanced equipment meet our highest environmental review standards.

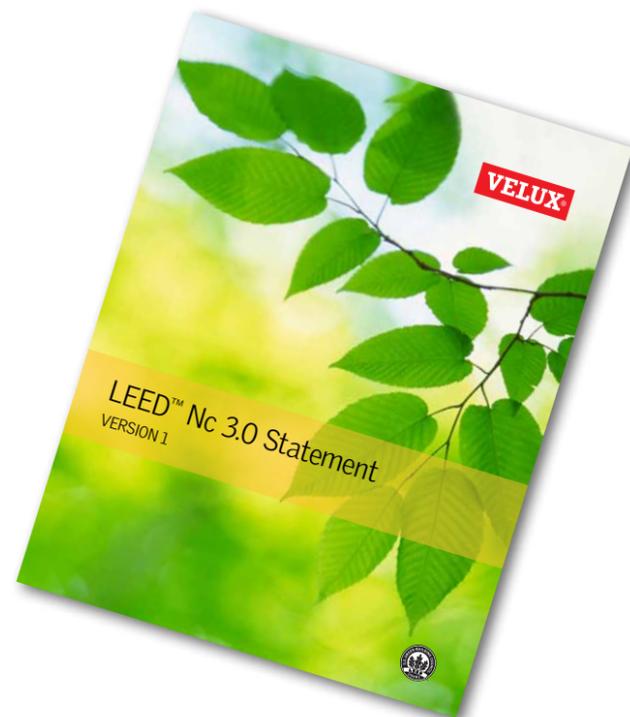
## Environmental Certification: ISO 14001

This is an environmental management model written to provide organizations with the elements of an effective environmental management system. As a result, VELUX maintains and supports each of the following:

- Environmental policy
- Planning and implementation
- Environmental goals
- Management review and corrective action
- Continual environmental improvement

## LEED NC statement information

Just as our name suggests, Ventilation and Light, VELUX skylights, by natural composition are great for sustainable design and can be a great source of LEED credit points towards the certification of a commercial project. How? We have created a brochure designed to answer that very question in the context of LEED New Construction program certification. Please see for yourself just how VELUX products can help reduce energy consumption by retaining quality daylight, reducing the need for electricity for comfort.



(2) CAP dome skylights with clear over clear acrylic

## How commercial skylights improve spaces

### Offices, manufacturing and distribution centers

Natural light can boost energy up to 24 percent, according to scientific experts. This has been shown to decrease absenteeism and increase productivity. The National Commission on Sleep Disorders Research estimates that, in the United States alone, businesses lose more than \$150 billion a year in productivity as a result of employee fatigue due to lack of daylight.

Lockheed Martin reports that after daylighting its facility in Sunnyvale, California, the company achieved 15% higher worker productivity. Additionally, the company won a \$1.5 billion defense contract based on increased productivity, profits which paid for the entire building. As an added bonus, the company saved \$300,000 to \$400,000 a year on energy bills due to natural light from skylights.

### Retail

Skylights in retail have been found to be positively and significantly correlated to higher sales. A HMG study showed non-skylit stores would increase sales by 40% by incorporating skylights. The link between high consumer activity and skylighting occurred despite the fact that many of the customers interviewed stated that they were unaware of the presence of skylights. The customers responded that they frequent the skylit stores because of positive environmental feelings, such as the stores feel cleaner, more spacious, more open or brighter. No seasonal variation was detected. Researchers concluded this suggested a long-term customer loyalty effect and not a short-term impetus on sales.

Employees working in naturally lit buildings have been shown to have increased morale resulting in better customer service, increased productivity and decreased absenteeism.

## Schools

Skylights in schools have been found to be positively and significantly correlated to better student performance in a study conducted by the Pacific Gas & Electric Company, 21,000 students were tested and they found that those in classrooms with the most daylight progressed 20% faster on math tests and 26% faster on reading tests in one year than those with the least amount of daylight.

According to the Commission Public Interest Energy Research Program, daylight illumination levels were significant and positive in predicting better performance on a test of mental function and attention. The Backwards Numbers test is widely accepted in psychological research as a valid test of mental function and

attention spans. An increase in daylight illumination levels from one to 20 foot candles resulted in a 13% improvement in the ability to instantly recall strings of numbers.

According to a report by the National Center for Education Statistics, 72% of the cost of energy in education buildings goes towards electricity, with 56% going toward lighting. In total America's K-12 schools will spend \$6 billion on annual energy costs. Properly applying skylights into educational buildings can provide energy savings over time while improving student performance.

## Hospitals, healthcare facilities and retirement communities

Natural light has been shown to expedite healing and improve overall personal health. According to a recent research study conducted by the Center for Health Design in Concord, California, better lighting and access to natural light can shorten hospital stays.

The lack of daylight can significantly disrupt the body's internal clock. In some cases lack of daylight along with other factors can lead to Seasonal Affective Disorder (SAD),

characterized by recurrent, annual clinical depression, accompanied by oversleeping, overeating, decreased work productivity and social withdrawal.

The average 60 year old requires 2-3 times the amount of light when compared to a 20 year old. The good news, natural light boosts visual acuity, especially among the aging. Improved lighting has been shown to decrease injuries related to falls.



(8) CM dome skylight with clear over white acrylic

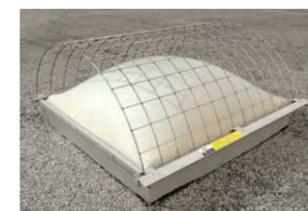


### Fall Protection

Fall protection was established by OSHA to provide a safe and healthful working environment for men and women, and to limit falls from employees or tools from heights of 6' or greater. OSHA regulation 29 CFR 1910.23 requires that skylights or skylight screens be capable of withstanding a load of 200 pounds applied perpendicular at any one area of the screen or skylight.

VELUX uses high quality acrylic for CAP and CM skylights, making these products OSHA compliant right out of the box. VELUX also manufactures skylights using polycarbonate material giving these OSHA compliant products an even higher safety rating.

Strenuous testing has been performed on custom sizes 4' x 4', 4' x 8' and 6' x 6' to assure widespread compliance with OSHA's fall protection guidelines.



### Screens

For applications where screens are specified, VELUX offers a unique screen system that provides fall protection without damaging your skylight. Other applications require the screen to be fastened into the skylight frame increasing the risk of leaks. VELUX utilizes a special retaining bar that locks to the unit at the corners thus keeping the screen from damaging the integrity of the skylight.

## Fall protection and screens



## Custom curb mounted commercial skylights (CM)

Our model CM curb mounted commercial skylight is welded using a 6063 extruded aluminum retaining angle and an extruded aluminum inner frame providing a leak-proof design. It installs directly on site built or prefabricated curbs. It is ideal for all commercial and industrial applications.

The VELUX CM curb mounted commercial skylight provides the highest levels of visible light transmittance which has been shown to significantly reduce energy costs through the benefits of daylighting. The payback from installing the CM curb mounted commercial skylight in commercial and industrial applications is typically less than two years.

- Special color options - Neutral gray, white, and other special color options are available on request.
- CM specification, drawings and test data available on request.
- Glazing Options - Clear over clear acrylic, clear over white acrylic, white over clear acrylic, bronze over clear acrylic, polycarbonate over clear acrylic, and polycarbonate over white acrylic.\*
- Advanced weep system which minimizes condensation.
- A full thermal break to maximize energy efficiency.
- Quality acrylic that does not yellow over time.
- Warranty covers 10 years on the acrylic color and 5 years on the skylight.

\* Plastic skylights are not recommended for residential type applications. The visual clarity of plastic is not comparable to glass and will contain some degree of distortion and variation of the light passing through.

### Curb mounted installation

The VELUX CM curb mounted commercial skylight installs directly on site built or prefabricated curbs. It is ideal for easy replacement of existing skylights with a quality VELUX product.

| Custom commercial sizes  |  |
|--|--|
| <p>Skylights available to fit custom sizes available up to 102" wide x 150" in 1/4" increments long with a 15 day production time including transportation time.</p> <p>VELUX requires outside curb dimensions for CM's.</p> | <p>Outside curb dimension (including flashing)</p> |



## Custom self-flashed commercial skylights (CAP)

Our model CAP self-flashed commercial skylight is built using a one-piece aluminum curb with three seamless vertical corners providing a leak-proof design. It is installed directly to the roof deck for the quickest installation available. It is ideal for all commercial and industrial applications.

The VELUX CAP self-flashed commercial skylight provides the highest levels of visible light transmittance which has been shown to significantly reduce energy costs through the benefits of daylighting. The payback from installing the CAP self-flashed commercial skylight in commercial and industrial applications is typically less than two years.

- Curb height options - The standard curb height for the CAP skylight is 9". Curb heights of 4", 6", 12", and 16" are also available.
- Special color options - Neutral gray, white, and other special color options are available on request.
- CAP specification, drawings and test data available on request.
- Glazing Options - Clear over clear acrylic, clear over white acrylic, white over clear acrylic, bronze over clear acrylic, polycarbonate over clear acrylic, and polycarbonate over white acrylic.\*
- Constructed on a welded aluminum curb with 1" of polyisocyanurate insulation that is fire rated for safety.
- Advanced weep system which minimizes condensation.
- A full thermal break to maximize energy efficiency.
- Quality acrylic that does not yellow over time.
- Warranty covers 10 years on the acrylic color and 5 years on the skylight.

\* Plastic skylights are not recommended for residential type applications. The visual clarity of plastic is not comparable to glass and will contain some degree of distortion and variation of the light passing through.

| Custom commercial sizes  |                                |
|--|--------------------------------|
| <p>Skylights available to fit custom sizes available up to 102" wide x 150" in 1/4" increments long with a 15 day production time including transportation time.</p> <p>VELUX requires rough opening dimensions for CAP's.</p> | <p>Rough opening dimension</p> |

Product

## Maintenance free curb mounted skylights (CMA)

The CMA maintenance free skylight is ideal in commercial and industrial applications where an aesthetically pleasing skylight is important. It comes standard with a neutral gray finished frame and a maintenance free PVC interior to provide a clean, finished look to any space. It also comes with a full thermal break for maximum energy efficiency and is available in standard and custom sizes.



### Model CMA Curb mounted skylight

- Quality construction.
- Acrylic glazings available in clear over clear, clear over white, white over clear, or bronze over clear.\*
- Custom sizes available up to 8.5' x 12.5'.
- No designated top, bottom or sides so you can install it in whatever direction you want.
- Polycarbonate glazing available.



| CMA Size code |           | 2525      | 2533      | 2549      | 3333      | 3725      | 3737      | 3749      | 4933      | 4949      |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Inside curb   | (W" x H") | 22½ x 22½ | 22½ x 30½ | 22½ x 46½ | 30½ x 30½ | 34½ x 22½ | 34½ x 34½ | 34½ x 46½ | 46½ x 30½ | 46½ x 46½ |
| Outside curb  | (W" x H") | 25½ x 25½ | 25½ x 33½ | 25½ x 49½ | 33½ x 33½ | 37½ x 25½ | 37½ x 37½ | 37½ x 49½ | 49½ x 33½ | 49½ x 49½ |

\* Plastic skylights are not recommended for residential type applications. The visual clarity of plastic is not comparable to glass and will contain some degree of distortion and variation of the light passing through.

## Roof hatch skylights (CVA)

The CVA skylight is a durable venting skylight with egress capabilities providing full roof access. With its access hardware and maintenance free PVC liner, this skylight is especially well suited for flat roof access in commercial spaces and high density housing.



### Model CVA Roof hatch skylight

- Chains hold the dome open for better access as well as to prevent dome from hitting the roof.
- Curb mounted installation.
- Acrylic glazings available in clear over clear, clear over white, white over clear, or bronze over clear.\*
- Includes insect screen



| Size code    |           | 2549      | 3333      | 3725      | 4949      |
|--------------|-----------|-----------|-----------|-----------|-----------|
| Inside curb  | (W" x H") | 22½ x 46½ | 30½ x 30½ | 34½ x 22½ | 46½ x 46½ |
| Outside curb | (W" x H") | 25½ x 49½ | 33½ x 33½ | 37½ x 25½ | 49½ x 49½ |

\* Plastic skylights are not recommended for residential type applications. The visual clarity of plastic is not comparable to glass and will contain some degree of distortion and variation of the light passing through.

## Fixed curb mounted skylights (FCM)

FCM glass curb mounted skylights are ideal for multi-family and light commercial applications. They can be installed completely flat and are available in standard and custom sizes.



### Model FCM Fixed skylight

- No designated top, bottom or sides to allow installation in any direction.
- Wide range of custom sizes available.
- Impact glass and Miami-Dade glass available for hurricane prone areas.
- White laminated glass available for applications where diffused lighting is required.



| Size code               |     | 1430        | 1446        | 2222        | 2230        | 2234        | 2246        | 2270        | 3030        | 3046        | 3434        | 4646        |
|-------------------------|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Inside curb             | in. | 14½ x 30½   | 14½ x 46½   | 22½ x 22½   | 22½ x 30½   | 22½ x 34½   | 22½ x 46½   | 22½ x 70½   | 30½ x 30½   | 30½ x 46½   | 34½ x 34½   | 46½ x 46½   |
| Outside curb            | in. | 17½ x 33½   | 17½ x 49½   | 25½ x 25½   | 25½ x 33½   | 25½ x 37½   | 25½ x 49½   | 25½ x 73½   | 33½ x 33½   | 33½ x 49½   | 37½ x 37½   | 49½ x 49½   |
| Max. skylight clearance | in. | 18⅝ x 34⅝   | 18⅝ x 50⅝   | 26⅝ x 26⅝   | 26⅝ x 34⅝   | 26⅝ x 38⅝   | 26⅝ x 50⅝   | 26⅝ x 74⅝   | 34⅝ x 34⅝   | 34⅝ x 50⅝   | 38⅝ x 38⅝   | 50⅝ x 50⅝   |
| Daylight area           | in. | 14.5 x 30.5 | 14.5 x 46.5 | 22.5 x 22.5 | 22.5 x 30.5 | 22.5 x 34.5 | 22.5 x 46.5 | 22.5 x 70.5 | 30.5 x 30.5 | 30.5 x 46.5 | 34.5 x 34.5 | 46.5 x 46.5 |

FCM custom sizes

Skylights available to fit outside curb dimensions including flashing of 17¼ x 49¾" wide x 70¾" long with a 12 day production time plus transportation time.

We require outside curb dimensions, and then we build an FCM unit to the closest ½" increment. Therefore, offset between the outside curb dimensions, including flashing and the maximum skylight clearance, can range ⅜" minimum to ¾" maximum each side.

## Blinds

Control the amount of light and heat that enters space utilizing electric or solar powered blinds from VELUX. The innovative new solar powered blinds can operate utilizing only the power of the sun, no wiring or electrician is required. All blinds operate with a touch of a button and are available for all curb mounted commercial skylights in the standard sizes below when combined with the accessory tray.



Accessory tray - Allows blinds on new or existing installations.



Solar blinds



Electric blinds

| Size code   |           | 2222      | 2230      | 2234      | 2246      | 3030      | 3046      | 3434      | 4646      |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Inside curb | (W" x H") | 22½ x 22½ | 22½ x 30½ | 22½ x 34½ | 22½ x 46½ | 30½ x 30½ | 30½ x 46½ | 34½ x 34½ | 46½ x 46½ |

# Commercial SUN TUNNEL™ skylight (TCR)

Areas with a drop ceiling, long shaft applications and interior area of buildings all lend themselves to the commercial SUN TUNNEL™ skylight. For your next commercial project, trust the name you know in daylighting from above - VELUX.



## Model TCR Commercial SUN TUNNEL™ skylight

- Tunnel has a 22" diameter.
- Multiple flashing types for any installation.
- Highly reflective tunnel.
- 36" rigid top elbow, 30° offset.
- Flexible bottom elbow, 24" fully extended (doubles as expansion joint).
- 9" tall round-to-square adapter box.
- Prismatic diffuser.
- Fast adjustment of tunnel length thanks to 60" telescopic design.
- Compatible with drop, open, or hard ceiling applications.
- Daylight controller available.
- Modular system can be purchased in three separate components.
- 10 year warranty on product/25 year warranty on tunnel.



| TCR components                                     |  |
|--|--|
| <b>TCR 022 P1 Curb flashing kit</b>                | Dome, flashing, top elbow, hardware, tape  |
| <b>TCR 022 65Q1 Self-flashing kit</b>              | Dome, flashing, top elbow, hardware, tape (8" flashing height)                                       |
| <b>TCR 022 90Q1 Self-flashing kit</b>              | Dome, flashing, top elbow, hardware, tape (10 1/2" flashing height)                                  |
| <b>TCR 022 P3 Tunnel kit</b>                       | 5' telescopic tunnel, hardware, tape   |
| <b>TCR 022 P2 Ceiling kit</b>                      | 2 steel fastening rings, bottom flex elbow, round-to-square adapter box, diffuser assembly, hardware |
| <b>TCR 022 E2 Ceiling kit</b>                      | Round-to-square adapter box, diffuser assembly, hardware   |
| <b>ZTR 022 0002 Extension</b>                      | Optional 24" Extension   |
| TCR accessories                                    |  |
| <b>ZTK 022 Daylight controller</b>                 |  |
| <b>ZZZ 217 Square fresnel diffuser replacement</b> |  |
| <b>KES 160 Power supply</b>                        |  |

Round dual diffuser options are available, call for price and availability.

| Run length | Components needed for curb flashing | Components needed for self-flashing |
|------------|-------------------------------------|-------------------------------------|
| 3 ft       | P1 + P2                             | Q1 + P2                             |
| 4 - 5 ft   | P1 + P2 + Extension                 | Q1 + P2 + Extension                 |
| 6 - 8 ft   | P1 + P2 + P3                        | Q1 + P2 + P3                        |
| 9 ft       | P1 + P2 + P3 + Extension            | Q1 + P2 + P3 + Extension            |
| 10 - 13 ft | P1 + P2 + (2)P3                     | Q1 + P2 + (2)P3                     |
| 14 ft      | P1 + P2 + (2)P3 + Extension         | Q1 + P2 + (2)P3 + Extension         |
| 15 - 18 ft | P1 + P2 + (3)P3                     | Q1 + P2 + (3)P3                     |
| 19 ft      | P1 + P2 + (3)P3 + Extension         | Q1 + P2 + (3)P3 + Extension         |
| 20 ft      | P1 + P2 + (3)P3 + (2) Extension     | Q1 + P2 + (3)P3 + (2) Extension     |



## Self-flashing kit (Q1)

The self standing flashing installs directly to the roof deck and eliminates the need to build a curb.



## Daylight controller (ZTK)

The daylight controller allows you to adjust the amount of daylight entering a room with an easy-to-use switch.



Product

# Other commercial options

## Commercial curb system

The VELUX commercial curb system provides a practical and affordable solution for large overhead glazing applications. The commercial curb system is built using a commercial curb that is pre-manufactured or site-built and pre-assembled by a VELUX approved vendor. The curb system can utilize acrylic, polycarbonate, or glass curb mounted skylights such as the CMA, CM, and FCM which attach directly to the curb for a quick and easy installation. There is no on-site glazing required.

The commercial curb system can be adapted to fit nearly every size space. The system can be painted, lined or insulated based on the needs of the building. Flat, single, or double slope options are available. Full light diffusing glazings as well as blinds are also available.



## Framed-in concept

The framed-in concept involves a customized standard approach, using standard products in a custom configuration to achieve a structural glazing look – with standard skylight pricing. It is constructed as deck mounted skylights are installed on top of a framed-in structure that is built on-site.

There are no size limitations with this system, and using VELUX combi-flashing, skylights can be installed as close as 2½ inches apart from each other. Light controls, ventilation and electric systems are available. If privacy is needed, white laminated glass is also available.

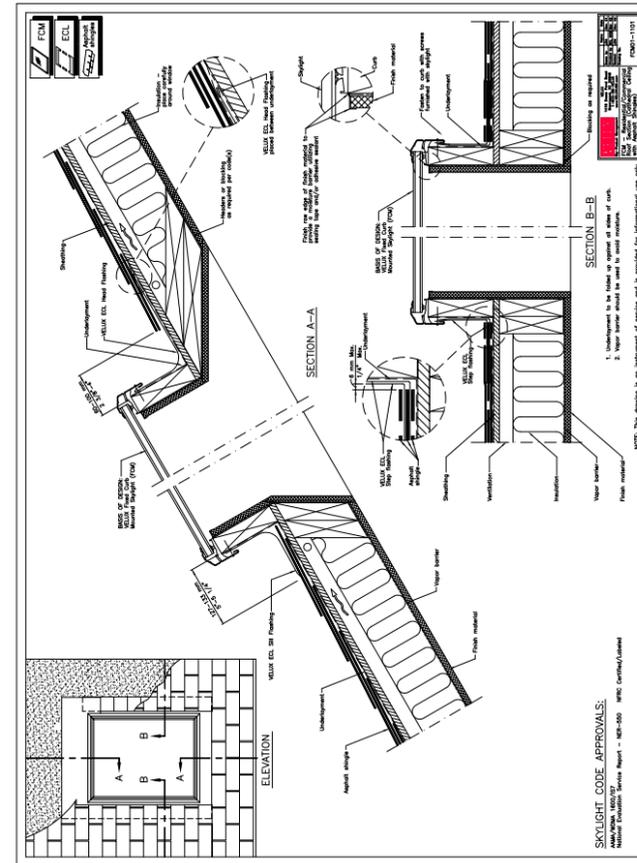
## Daylighting through sloped roofs

Toplighting through the sloped roof is ideal for achieving optimal light distribution throughout a space, for reducing or eliminating glare issues, and for maximizing glazing surface efficiency. Regardless of application or roofing material, VELUX has a product that will fulfill virtually any need.

From our model VSE electric venting skylight to our roof window line designed for within-reach applications to our full line of blinds and controls, VELUX has the most versatile and diversified line of products in the skylight industry. Please refer to the residential product catalog for details on these skylights and roof windows.



Residential product catalog XUS 20183



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*Bringing light to life*™

**VELUX®**

