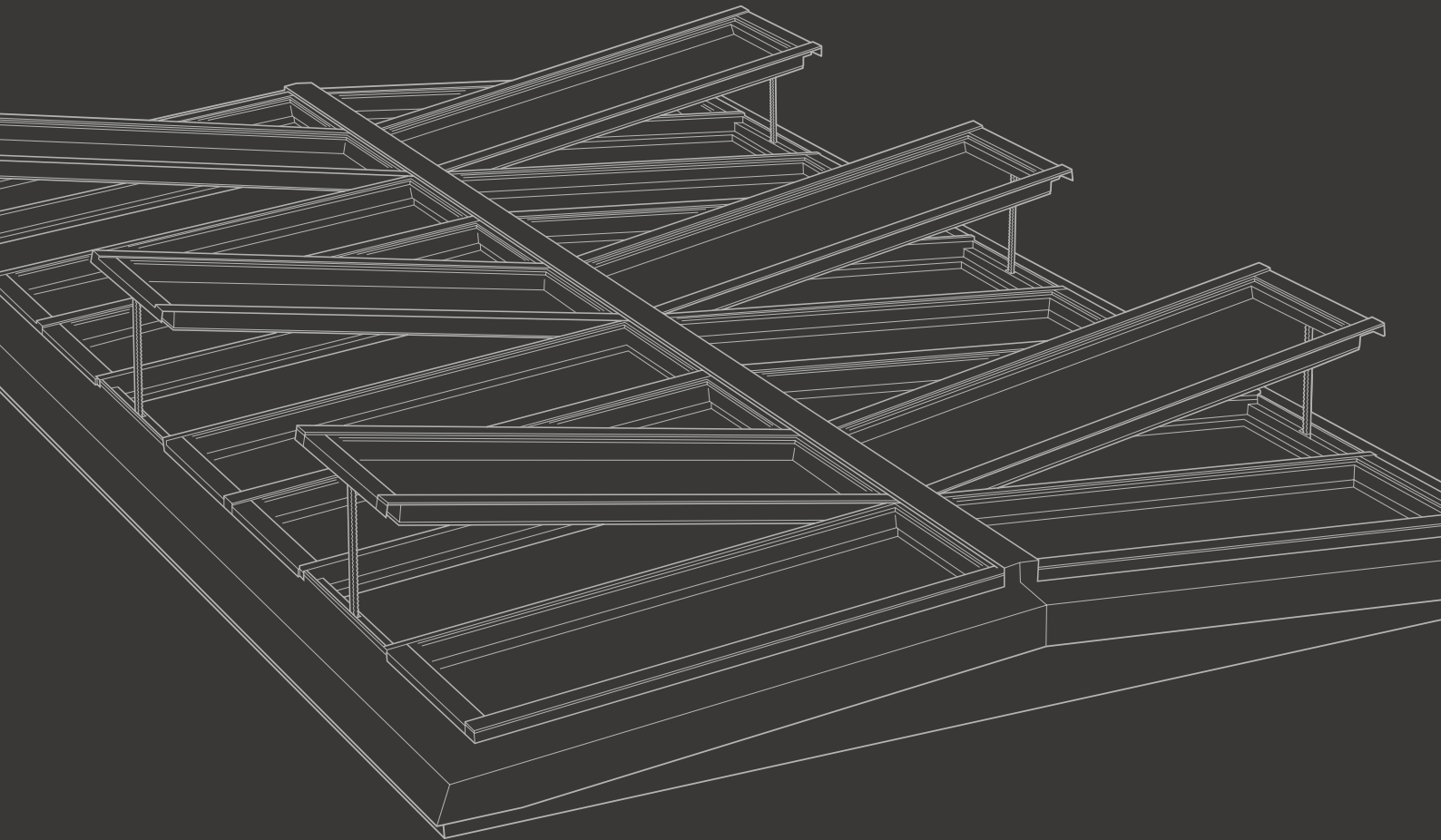


VELUX®

Commercial

Sub-Construction for Center Ridge I-beam Ridgelight

VELUX Modular Skylights

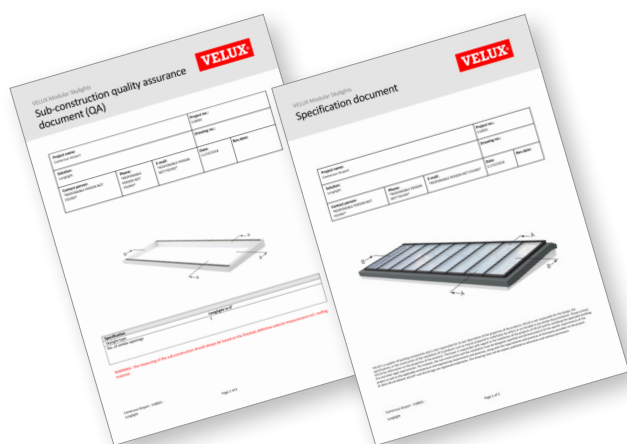


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Before you start

Before you can build a durable and secure sub-construction to provide the supporting base of the VELUX modular skylights, you will need to have the following three specification documents at hand and follow them closely:



Sub-construction quality assurance (QA) document and specification document. These two documents must be obtained through your local VELUX Commercial sales office.



This is the Center Ridge I-beam Ridgelight. You are browsing the brochure now.

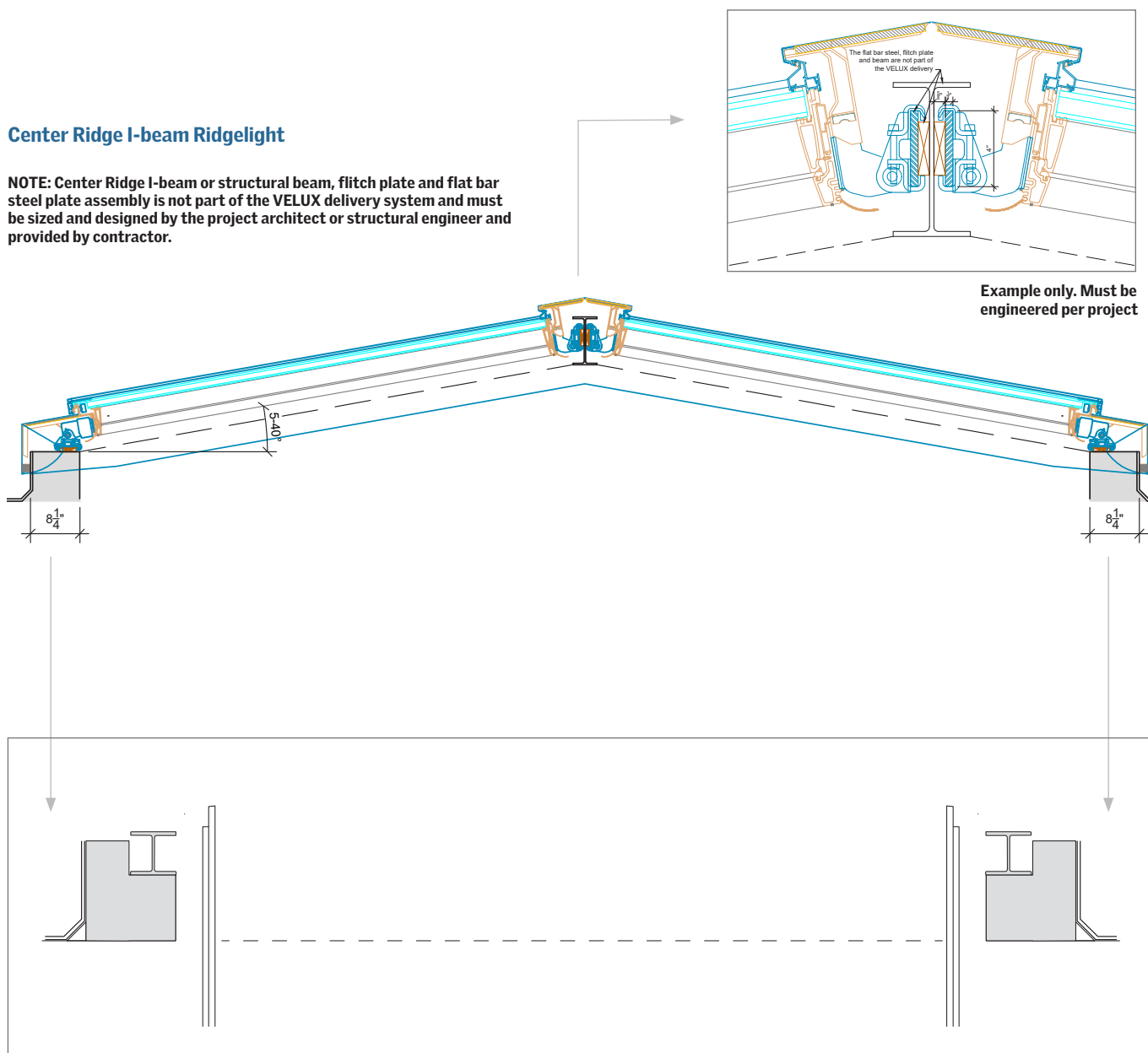
Center Ridge I-beam Ridgelight

VELUX modular skylights installed in a center ridge I-beam Ridgelight solution are built on a sub-construction made of steel, concrete or wood. The sub-construction raises the modules above the roof surface, protecting the construction against water and drifting snow, and provides the supporting base for the modular skylights.

The sub-construction is not included in the VELUX delivery. The sub-construction as shown in the drawing only represents general principles and must be designed and dimensioned to fit the specific building project, local architectural style and practice, and the directions of other building suppliers.

Center Ridge I-beam Ridgelight

NOTE: Center Ridge I-beam or structural beam, fitch plate and flat bar steel plate assembly is not part of the VELUX delivery system and must be sized and designed by the project architect or structural engineer and provided by contractor.



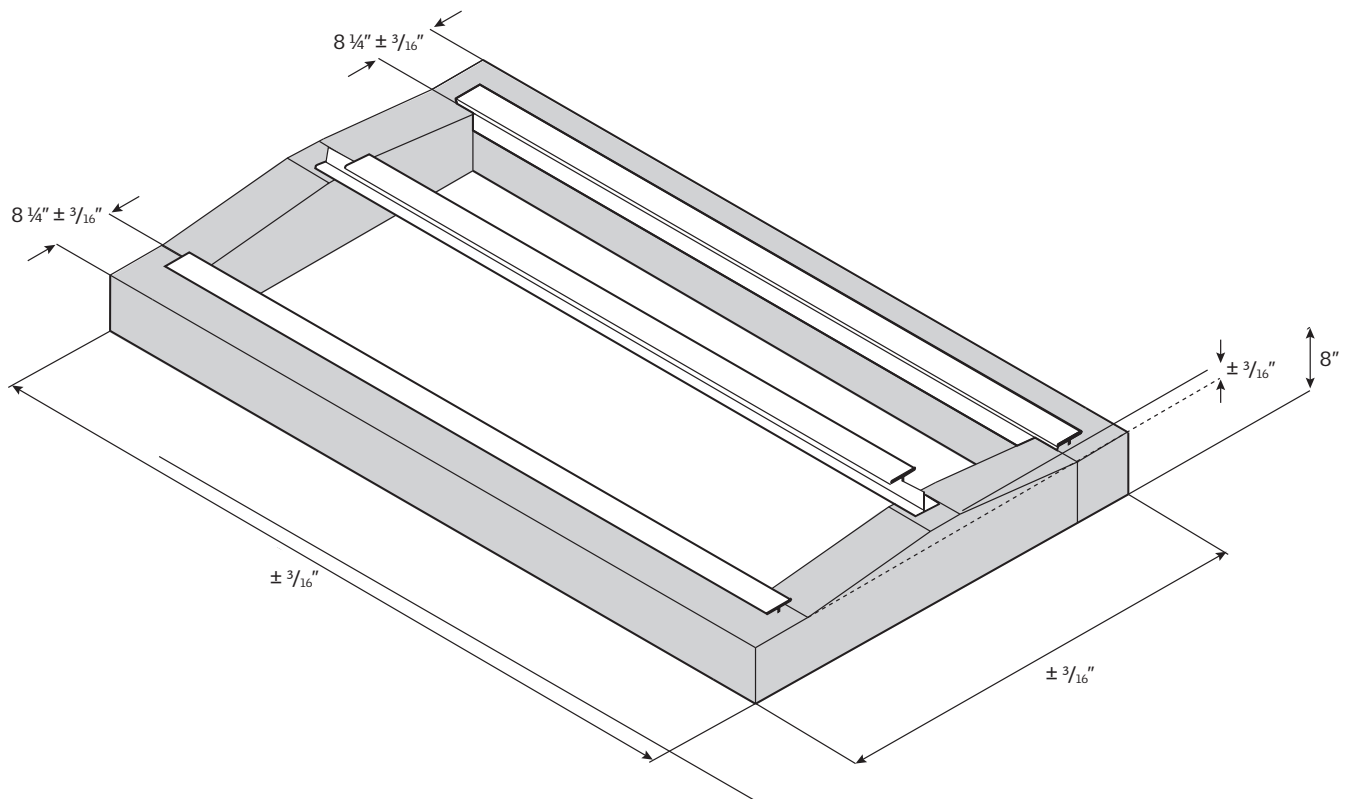
On-site sub-construction
This is not delivered by VELUX Commercial

To ensure a high quality installation of VELUX modular skylights and to prevent condensation occurring within the sub-construction, it is highly recommended to install the BCX vapour barrier connection strip. The factory-finished BCX creates an easy connection between the VELUX modular skylights and the vapour barrier of the building.

Building site measurements – Axonometric

Axonometric	
C	Sub-construction width – Tolerance $\pm 3/16"$
D	Sub-construction length – Tolerance $\pm 3/16"$
O	Difference in height of sub-construction – Tolerance $\pm 3/16"$

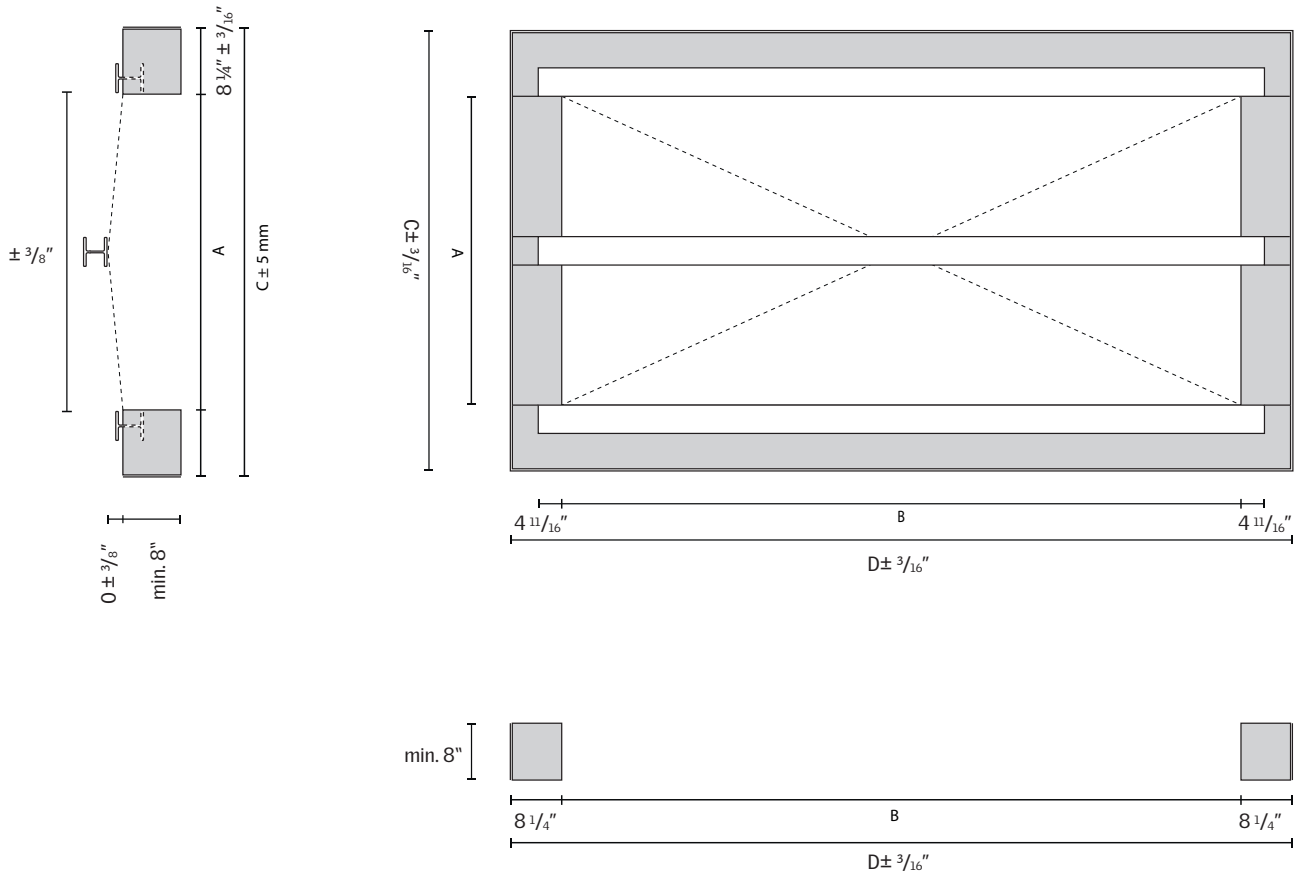
Minimum length of steel profiles is equal to opening length (B)



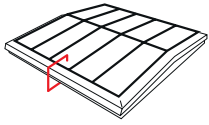
Building site measurements

Plan	
A	Opening width
B	Opening length
C	Sub-construction width – Tolerance $\pm 3/16''$
D	Sub-construction length – Tolerance $\pm 3/16''$
O	Difference in height of sub-construction – Tolerance $\pm 3/8''$
S	Distance between steel, internal measurement between steel – Tolerance $\pm 3/8''$

Minimum length of steel profiles is equal to opening length (B)



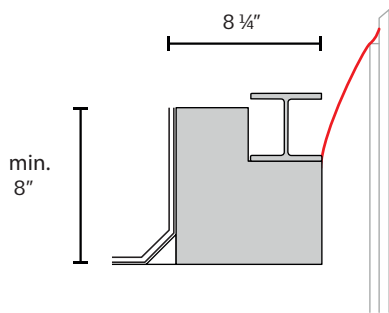
Sub-construction variants



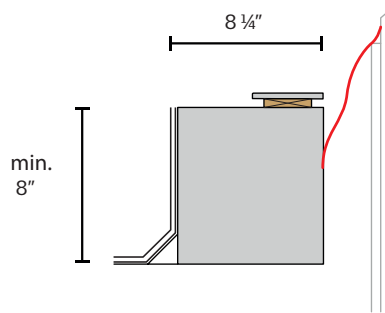
Cross-section / Bottom Curb

Options of sub-constructions for Center Ridge I-beam Ridgelight solutions. Please note that the width stated indicates the distance from the exterior of the roofing material to the interior edge of the steel profile or wooden batten.

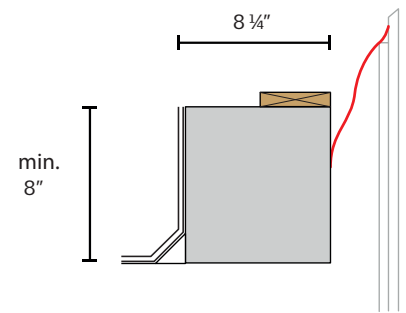
Steel with steel profile



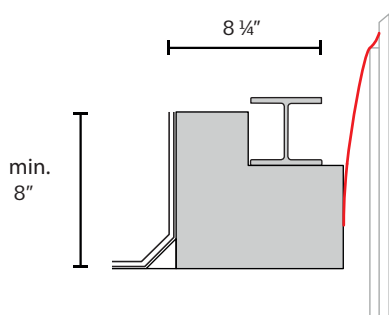
Steel with flat steel



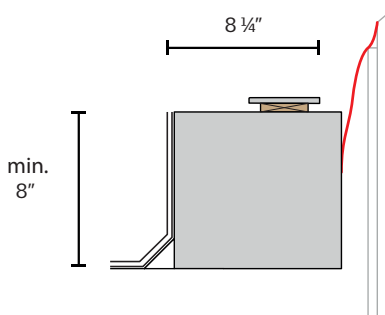
Steel with wooden batten



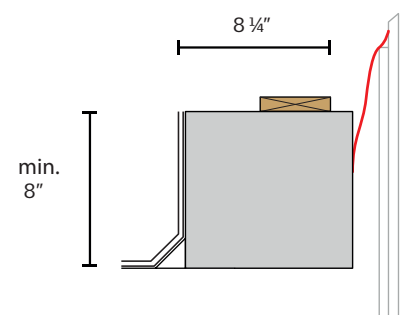
Concrete with steel profile



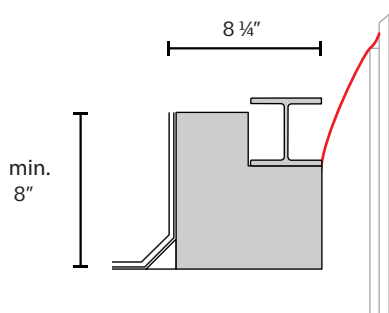
Concrete with flat steel



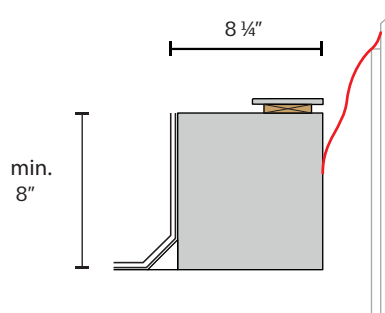
Concrete with wooden batten



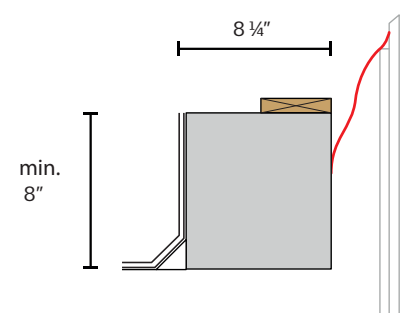
Wood with steel profile

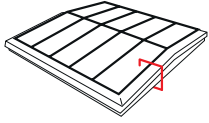


Wood with flat steel



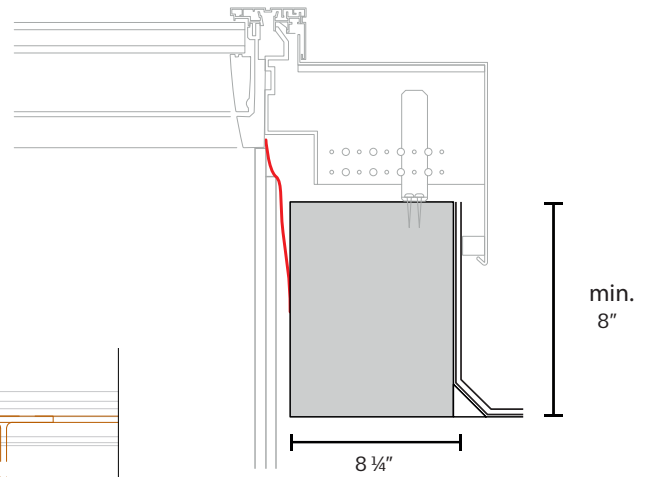
Wood with wooden batten



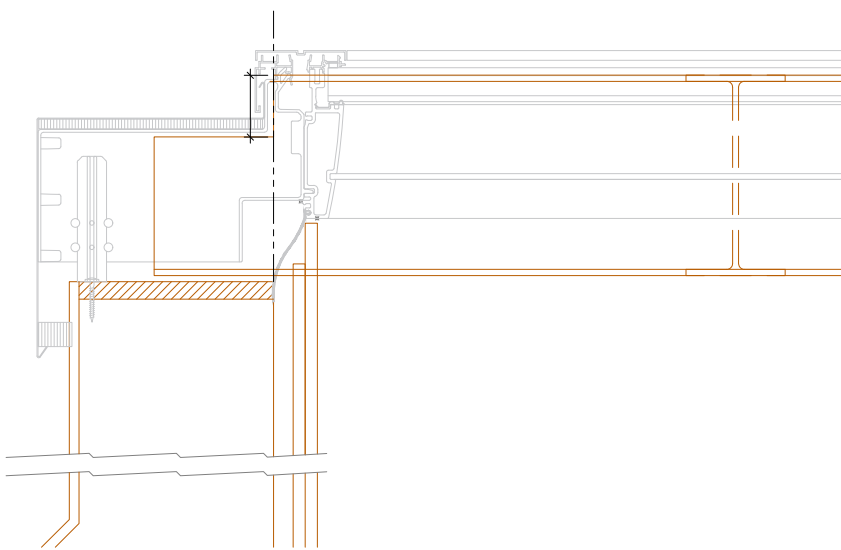


Longitudinal section

In the gable construction for Center Ridge I-beam Ridgelight, the height of the sub-construction must be at least 8" measured from finished roof surface. It is important that the surface of the gable construction is suitable for fixation of screws. Depending on the center ridge support you've designed for the new VELUX Ridgelight system, it will require the top gable end detail to be notched to accept the pre-engineered VELUX flashings.



I-beam gable in detail

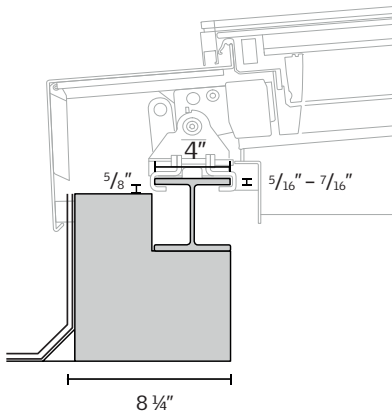


Securing modular skylights to the bottom sub-construction

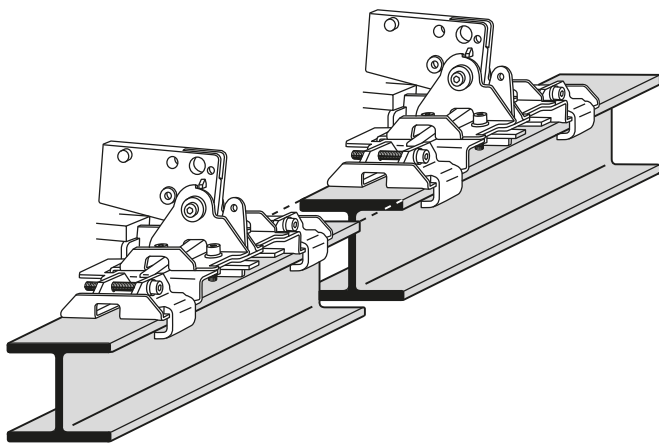
The sub-construction can be finished at the bottom with steel profile, which provides a level and stable surface for the skylight modules and forms a base for fitting mounting brackets with clamps.

Using steel profile

When mounting the modular skylight on a steel profile, the top flange of the profile must be 4" in width and $\frac{5}{16}$ " - $\frac{7}{16}$ " in thickness. In addition there must be at least $\frac{5}{8}$ " free space underneath the flange both vertically and horizontally to give room for the clamp.



Steel, concrete or wood construction with steel profile

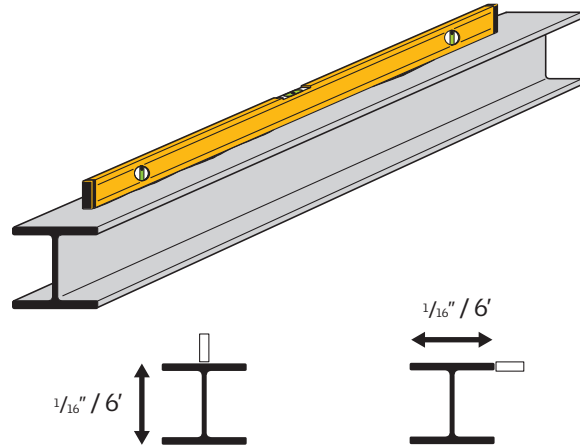


Connection of steel profiles must not collide with clamps

The number, size, and type of fixings for securing the steel profile to the bottom sub-construction must be dimensioned by the customer to fit each project.

Straightness of steel profile

Requirements as to the straightness of the steel profile are $\frac{1}{16}$ " per 6' horizontally and vertically.



The following standard steel profiles are suited for bottom installation of VELUX modular skylights in Center Ridge I-beam Ridgelight solutions.

EU steel beams	British steel beams	US steel beams
INP 220	UB 178 x 102 x 19	W 12 x 22
IPE 200	UB 203 x 102 x 23	W 12 x 19
HE100A	UB 254 x 102 x 22	W 10 x 19
HE100B	UB 254 x 102 x 25	W 10 x 17
	UB 305 x 102 x 25	W 8 x 15
	UB 305 x 102 x 28	W 6 x 16
	UB 305 x 102 x 33	W 4 x 13
		S 8 x 23
		S 8 x 18.4

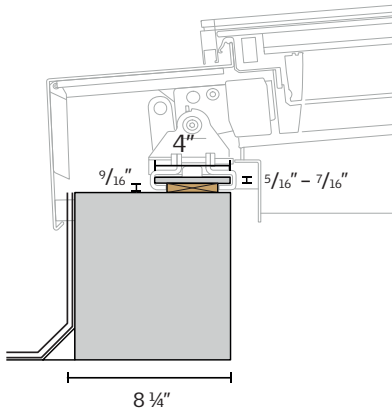
In case a stronger construction is needed, the steel profile can be replaced with a stronger profile. In this case, longer installation bolts must be ordered separately from a VELUX Commercial sales office.

The following profiles can be combined with the longer bolts.

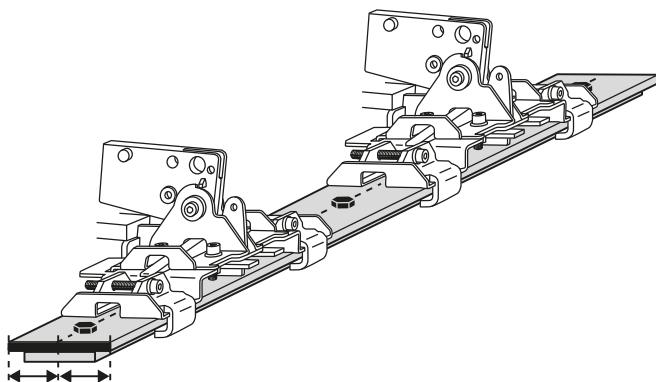
EU steel beams	British steel beams	US steel beams
INP 240, 260, 280	UB 305 x 127 x 37	S 10 x 25.4
IPE 220, 240	UB 305 x 127 x 42	
HE120A	UB 356 x 127 x 33	
HE120B		

Using flat steel profile

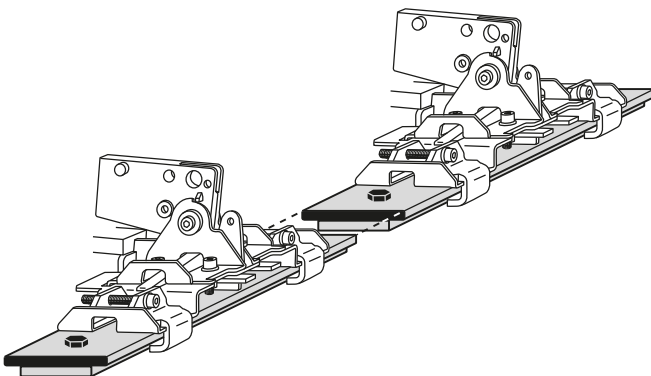
When the bottom sub-construction is finished with a flat steel profile, the steel profile must be 4" in width and $\frac{5}{16}$ " - $\frac{7}{16}$ " in height. In addition there must be at least $\frac{5}{8}$ " free space underneath the steel both vertically and horizontally to give room for the clamps.



Steel, concrete or wood construction with flat steel



- The distance pieces under the flat steel profile must be for the full length of the steel profile
- The flat steel profile must be secured using screws along the middle of the steel profile

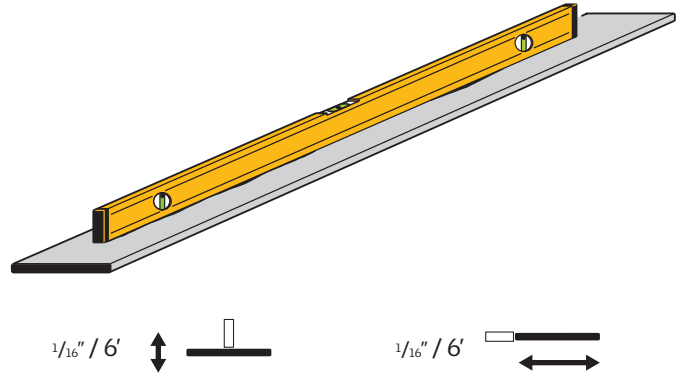


- Connection of flat steel profiles must not collide with clamps

The number, size, and type of fixings for securing the flat steel profile to the bottom sub-construction must be dimensioned by the customer to fit each project.

Straightness of steel profile

Requirements as to the straightness of the flat steel are $\frac{1}{16}$ " per 6' horizontally and vertically.



The following standard flat steel profiles are suited for bottom installation of VELUX modular skylights in Center Ridge I-beam Ridgelight solutions.

Standard EU flat steel	Standard US flat steel
100 x 8	5/16 x 4
100 x 10	3/8 x 4

In case a stronger construction is needed, the steel profile can be replaced with a stronger profile. In this case, longer installation bolts must be ordered separately from a VELUX Commercial sales office.

The following flat steel profiles can be used combined with the longer bolts.

Standard EU flat steel	Standard US flat steel
110 x 8	3/8 x 4 1/2
110 x 10	
120 x 8	
120 x 10	

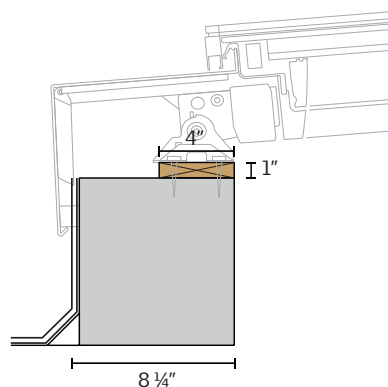
Using wooden battens

The bottom sub-construction for the Center Ridge I-beam Ridgelight can also be finished with the use of a wooden batten on which the mounting brackets of the modular skylight can be secured directly, without having to use the mounting clamps.

The skylight modules are mounted on the batten using screws through the bottom and top mounting brackets.

There are 4 holes in each mounting bracket, 2 x $\frac{3}{16}$ " and 2 x $\frac{5}{16}$ ".

These screws are not included in the VELUX delivery, and the correct dimensions must be ensured by the customer.

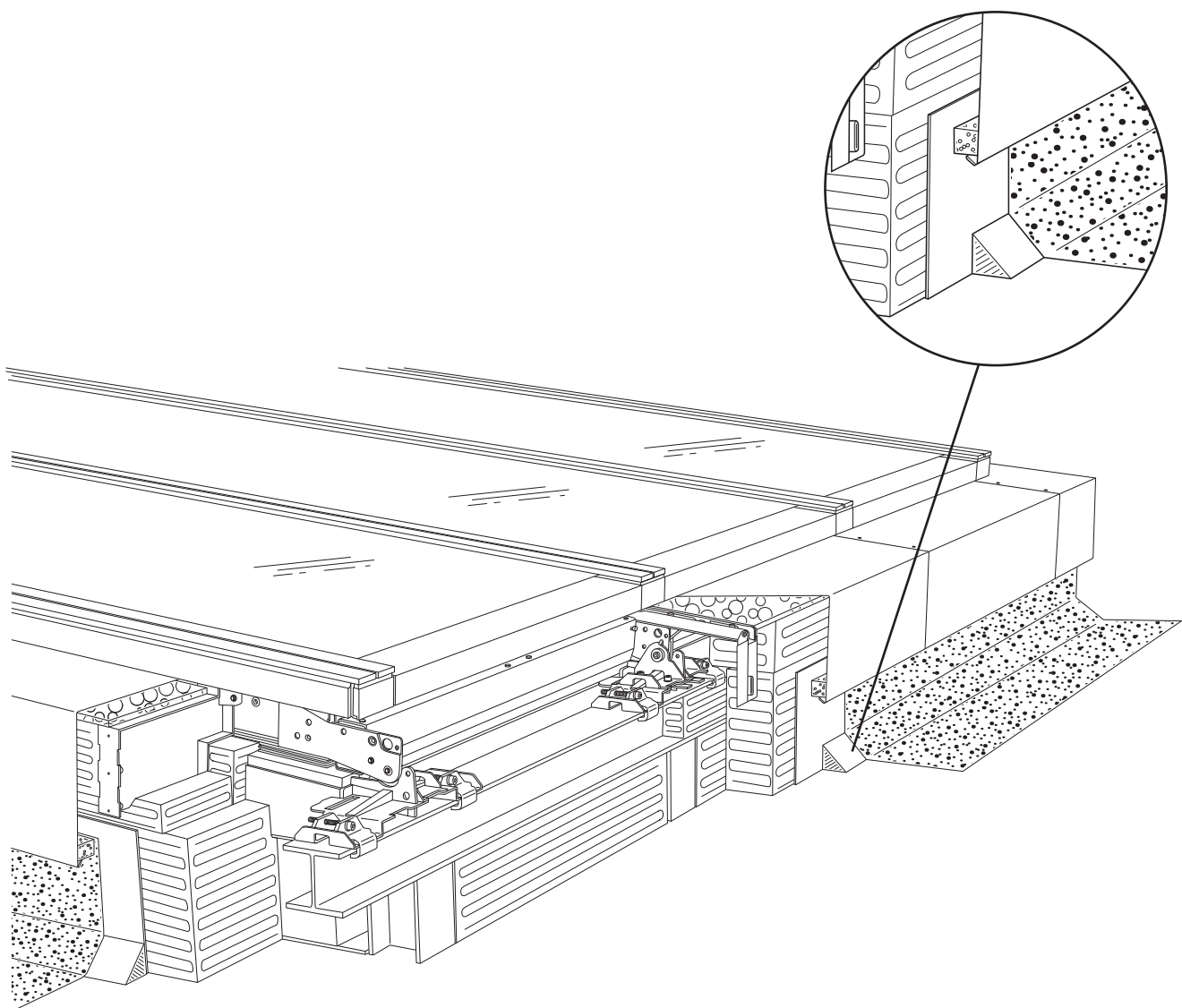


Steel, concrete or wood construction with wooden batten

Connecting to the roof

The surface on which roofing felt is laid must be prepared according to applicable standards for roofing materials and best building practice.

The ideal installation order, is to apply the roofing felt to the outside of the sub-construction before mounting the skylights.

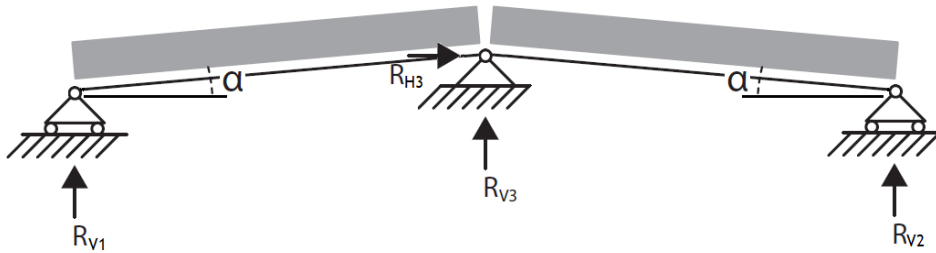


Static information for dimensioning

As an additional service, VELUX Commercial offers to provide static calculation for the skylight solution based on the actual loads given by the customer. For static calculation please contact a VELUX Commercial sales office.

en by the customer. For static calculation please contact a VELUX Commercial sales office.

Static model of reactions

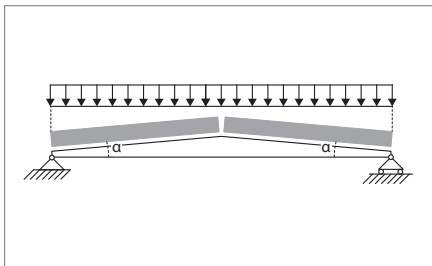


Characteristic loads

Fill out please

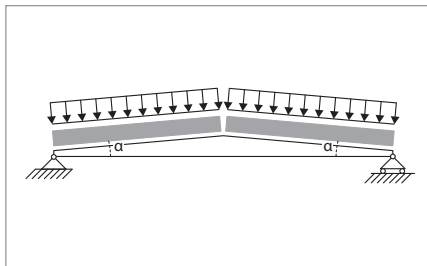
Name of your project:

Snowload pressure in psf



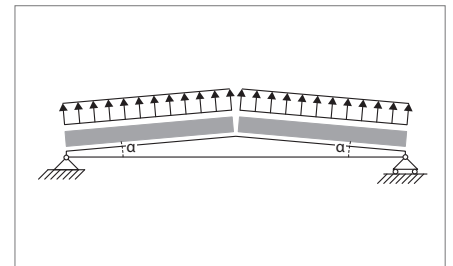
psf

Windload pressure in psf



psf

Windload suction in psf

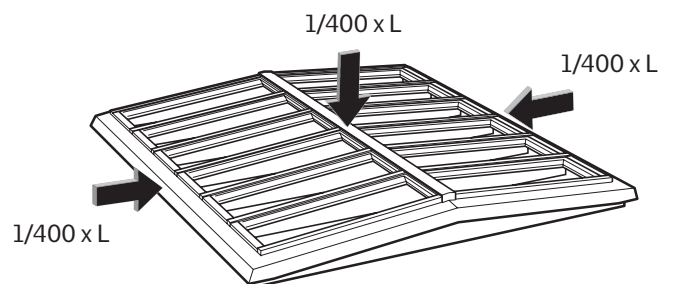


psf

Sub-construction dimensioning requirements

The roof construction is subject to deflections after installation of the skylight modules. These deflections include subsequent roof covering, various building installations and external loads such as snow and wind etc. The sub-construction must be designed to withstand all these loads and the deformations must be limited to $1/400$ over the full length of the sub-construction.

After completing the sub-construction, it must be secured against water penetrating the roof construction and insulation.



VELUX America LLC
450 Old Brickyard Road
PO Box 5001
Greenwood, SC 29648-5001

commercialteam@velux.com
Tel 1-888-878-3589
Fax 1-864-941-4873

modularskylights.veluxusa.com
veluxusa.com

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