

Technical file

Cintralux® alu 10 mm

General product description:

The barrel vault is made of extruded aluminum profiles (alloy AL-Mg-Si-0,5) with a solid plastic glazing. This glazing is composed of one multi-walled 10 mm polycarbonate sheet. The same plastic glazing is used in the transparent end pieces to obtain uniformity. The Cintralux® 10mm barrel vault is produced as a fully finished entity and must be installed according to the Cintralux® mounting instructions.

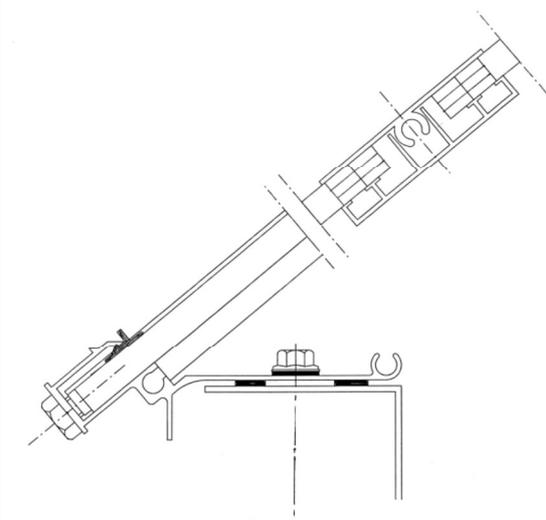


The glazing is bended between the upper scale and the supporting under scale. The bow profiles are only mounted at the ends on the horizontal longitudinal profile, which enables a quick installation and avoids differential tensions due to the dilatation of the plastic sheets. On request, rubber sealing can be used to diminish dilatation noise.

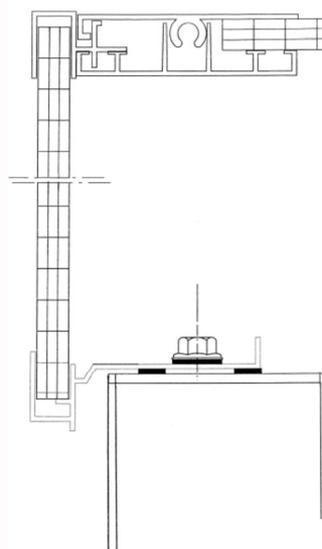
Advantages:

- Smooth light spread
- Quick installation
- Integration of opening parts Cintramax® (pneumatic or electric) for SHE (according to EN 12101-2:2003) and ventilation possibility
- CE according to EN 14963

Principle drawing:



section longitudinal profile*



section end piece*

*the presented sheet structures are only indicative and are subject to the chosen sheet type (see following page).

Specific characteristics of the polycarbonate glazing (see price list):

Chemical characteristics	Good resistance against chemical influences and weather conditions.
UV-stability	The polycarbonate sheets have a coextruded UV protection layer at the top side, which gives a durable optimal light transmission. (ask for our terms of guarantee).
Dilatation coefficient	0,065 mm/m°C
Functioning temperature	-30 à +115 °C

Sheet		Titan 5X	PC1750
Overall size (m)		1,12 tot 5,16	1,12 tot 5,16
Sheet thickness (mm)		10	10
Insulation value Ug (W/m ² .K) EN ISO 6946		2,5	2,5
Insulation value Uw (W/m ² .K) EN ISO 6946		2,71	2,71
Minimal cold bending radius (mm)		1750	1500
Total light transmission (%)	opal	32	61
EN ISO 13468	clear	62	68
g-value (%)	opal	30	61
EN 410:2011	clear	56	65
Sheet width (mm)		1050	1050
Axis distance (mm)		1072	1072
Weight (g/m ²)		1750	1750

Form:

The standard barrel vault uses sheets with sheet width 1050 mm, which gives an axis distance of 1072 mm. 2 adaptor pieces are foreseen at the ends. The section of the profiles determines the span and the charge (V1 to V4). The height in the middle (barrel rise f) is standard 1/5 of the span.

Type under scale	Overall size B ^{***} (m)	Width upstand (mm)	Downward pressure P ^{***} (N/m ²)
V1	1,12 to 2,63	65	ca. 43
V2	2,64 to 3,56	65	ca. 47
V3	3,57 to 4,56	65	ca. 49
V4	4,57 to 5,16	80	ca. 51

^{***}for a barrel vault of 4 x 30 m
^{***}see specifications curb

Optional surface treatment aluminum profiles:

Powder coating according to the Qualicoat label:

- Class 1 : RAL 9010 white & RAL 8019 brown
- Class 2 : color of your choice except RAL codes according to class 1 and class 3.
- Class 3 : metallic RAL 9006 white aluminum & RAL 9007 grey aluminum

Anodisation: technical anodisation 15 µm.

Attestations and certificates:

- CE of the barrel vault according to EN 14963
- CE of the multi-walled sheet according to EN 16153
- Fire class: B1 according to DIN 4102
French norm M1
B, s1-d0 according to EN 13501-1
- Dop through www.cintralux.be

Opening parts:

Opening parts can be integrated in the barrel vault for ventilation or smoke and heat extraction according to EN 12101-2:2003. See technical file Cintramax® CE.



Specifications upstand and roof covering:

The essentially flat upstand may incline max 5° facing the horizontal because of the roof inclination. The upstand must be solid enough and minimal deformable (max 5 mm). It must be reinforced with crossbeams to meet the forces calculated with following formula. The upstand is made of timber or steel (min 3 mm thick) and will ideally incline approximately 1° to the outside. The height must be min 20 cm above the finished roof and the width is 65 mm and maximum 100 mm (top and bottom flange). The upstand and the roof covering are not included in the barrel vault and must be previously mounted by the contractor. The roof covering must also be fixed on the horizontal top side of the curb.

Every upstand is subject to horizontal and vertical forces:

The horizontal force **H** per running meter (= splash force to the outside) is calculated as following:

$$H = P \cdot B^2 / 8f \quad \text{with}$$

H = sidelong force per running meter (N/m)
P = snow load + own weight (N/m²) – see table
B = overall width (m)
f = barrel rise (m)

The vertical force **V** per running meter is calculated as following:

$$V = (P \times B) / 2 \quad \text{with}$$

V = vertical force per running meter (N/m)

Maintenance:

The Cintralux® barrel vault must at least be cleaned once a year with tepid rain water and a soft sponge. If necessary use a soft neutral soap (no detergent). For tenacious stains, an iso-propanol solution (50% iso-propanol and 50% water) can be used. After cleaning, rinse abundantly and let dry. Do not rub dry because of the risk of scratches (consult the installation instructions on www.agplastics.com)