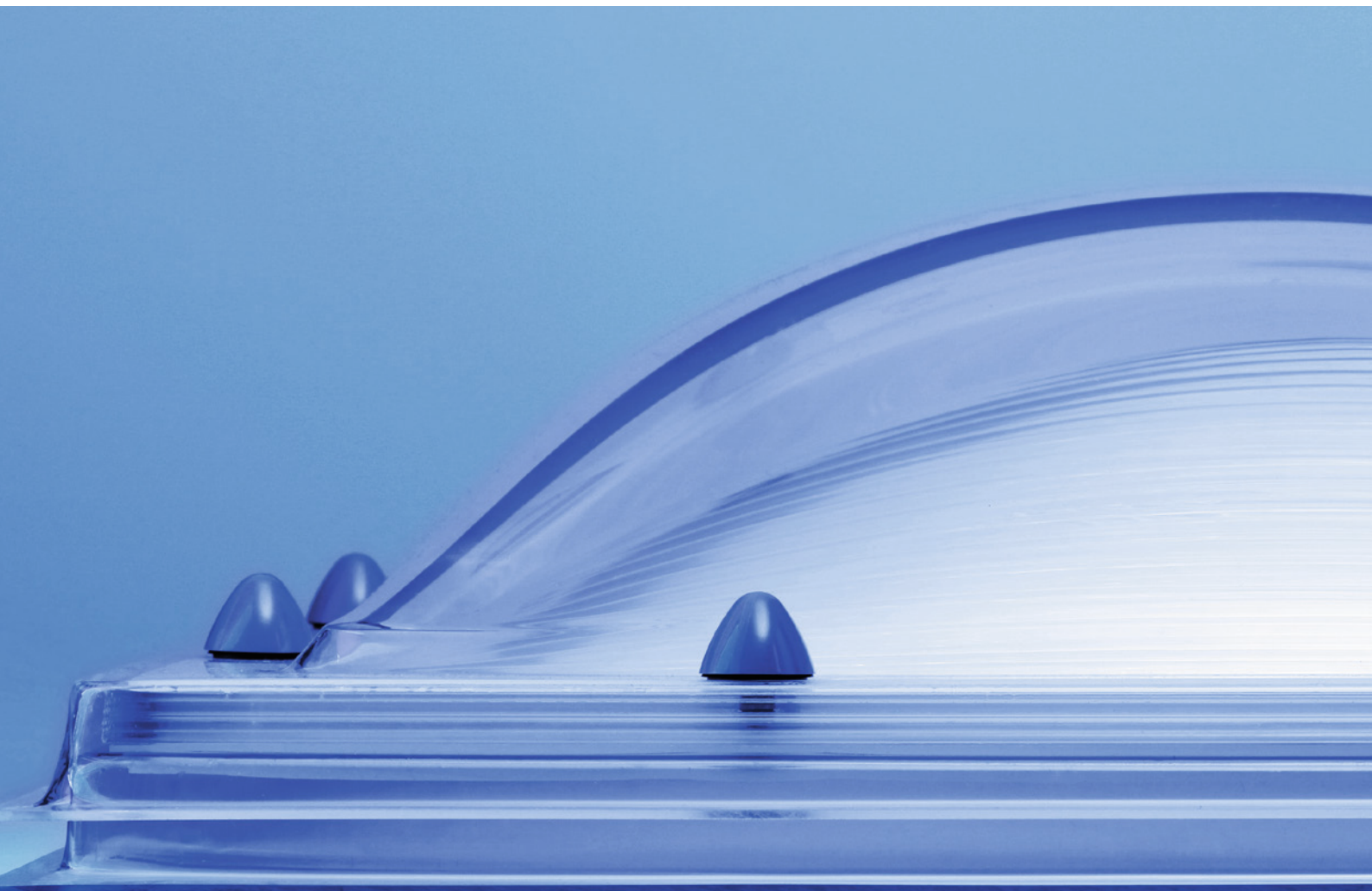


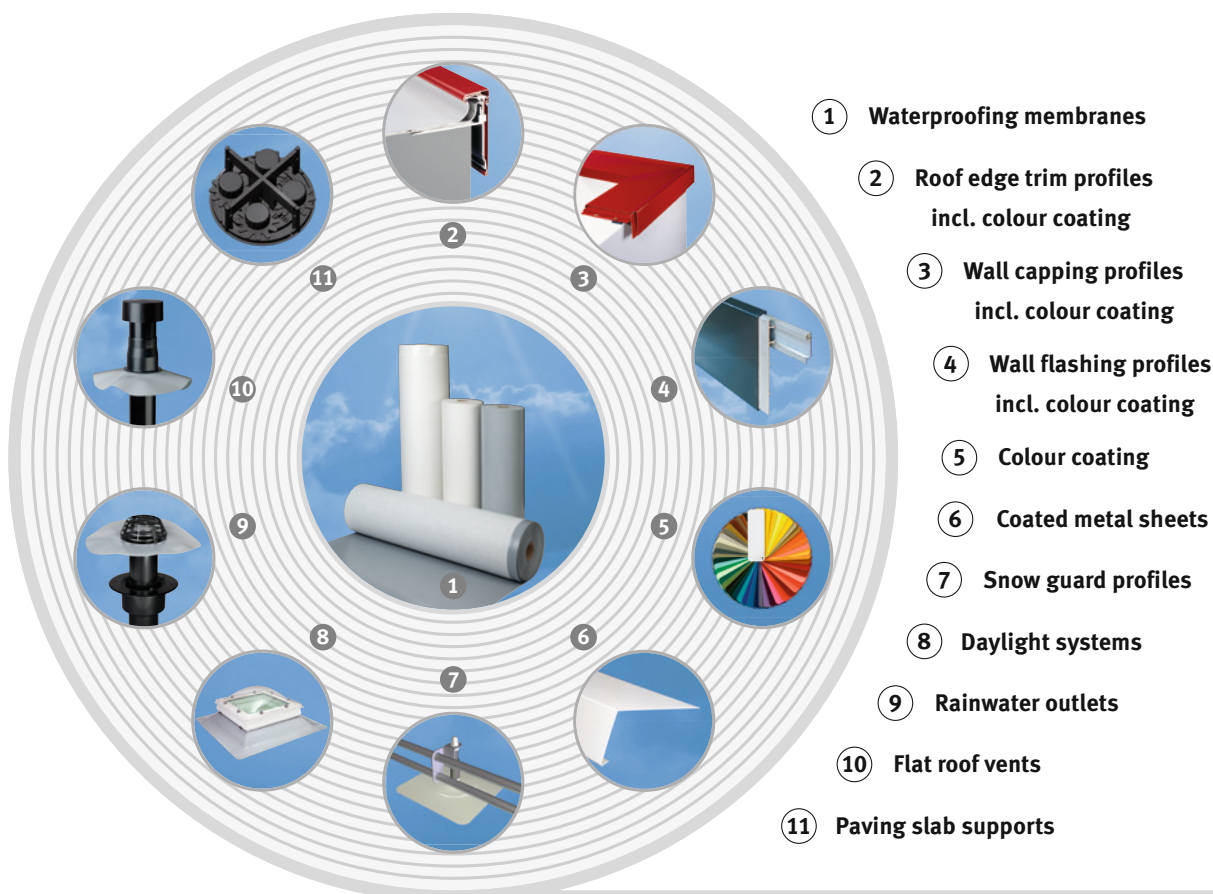
Daylight systems

Rooflight systems
Smoke and heat vents
Flat roof windows



alwitra waterproofing system

**Daylight systems are part of the proven alwitra waterproofing system.
This system comprises:**



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alwitra daylight systems



alwitra daylight system

Light is playing an ever-increasing role in modern architecture, forming part of the design and aesthetics of a building. In particular, natural daylight offers many advantages: It is verified to have a positive physiological impact, it increases our well-being and thus enhances our productivity.

In Germany, sufficient daylight for natural lighting is available between 8 am and 5 pm on 85 % of all days. For optimal daylight integration into architectural structures, specially developed constructional elements are required combining both technical and aesthetic aspects. Flat roofs provide ideal conditions for the installation of rooflights or flat roof windows. They capture the natural zenith light and provide for sufficient and even lighting inside the building, requiring relatively little space. alwitra daylight systems shed the light where it is needed. For example, on a well-lit and comfortable working place.

Many living and working areas do not get enough daylight and, thus, give an oppressive feeling. Natural daylight creates a free and open atmosphere, practically at no operating costs. Along with the sustainable lighting of rooms, daylight systems still offer a "free-of-charge" co-benefit, i. e. room ventilation. Due to the thermal lift and the optimal installation place, i. e. the roof, depleted air is efficiently vented to the atmosphere.



alwitra kerb 3020

alwitra daylight systems come with numerous advantages:

- pleasant natural light
- if desired, excellent natural ventilation
- additional usages, e. g. access to the roof or natural smoke vent

With the new alwitra daylight systems, you will be on the safe side:

- comprehensive product range providing high flexibility
- outstanding thermal insulation characteristics
- easy and reliable installation
- comprehensive range of accessories
- system-compatible connection to alwitra waterproofing membranes by means of kerbs with optional EVALON® or EVALASTIC® collars

alwitra kerbs

alwitra kerbs are made of white impact-resistant "window quality" extruded polyvinyl chloride profiles. A special feature is the cellular system created by ribs that are formed already during the extrusion process of the profiles.

This sophisticated technology gives you several advantages:

- The cellular system itself ensures outstanding thermal insulation - without any additional "fillings".
- When welding the corners, welding also includes the ribs. This results in a very large welded area providing high stability of the corners as well as continuous "thermal insulation", in particular, in the critical corner area.

Flashing to EVALON® waterproofing membranes or PVC type waterproofing membranes can be done by direct welding to the kerb. For flashing, bituminous waterproofing sheets or other types of high polymeric waterproofing membranes, as usual, these are taken up the kerb and fixed accordingly. As a special feature, the alwitra kerbs can be fitted with an optional EVALON® or EVALASTIC® collar for reliable homogeneous flashing to the corresponding roof waterproofings.

Advantages of alwitra kerbs:

- Suitable for installing all types of alwitra rooflights and the alwitra DayLuxe window
- The special cellular insulation structure ensures excellent stability and outstanding continuous

thermal insulation right into the corners

- Suitable for installing various opening systems and connecting profiles due to special internal reinforcements
- Completely recyclable

- With optional EVALON® or EVALASTIC® collar for reliable homogeneous flashing to corresponding roof waterproofing.

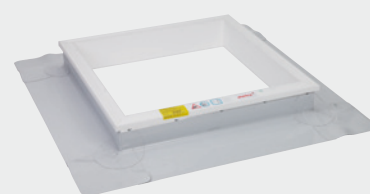
Please see also the chapter "Factory-fitted collar"!



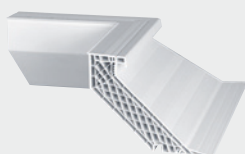
Kerb 1620 with collar



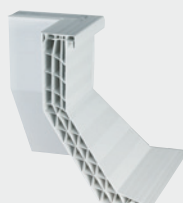
Kerb 3020 with collar



Kerb 1600 with collar



Cross section of kerb 1620



Cross section of kerb 3020



Cross section of kerb 1600

Technical data

Kerbs of all types

Construction:

cellular system made of window-quality extruded impact-resistant polyvinyl chloride (PVC)

Colour:

white, through pigmentation

Fire class:

E (EN 13501-1)
CE according to DIN EN 1873 in combination with alwitra rooflight

alwitra kerb 1620

The kerb 1620 is also 16 cm high, however, it is tapered to the top by 20 cm as is usually the case for classic rooflights. This means an inclined inner wall, with the light opening size being 20 cm smaller than the required roof opening size.

Thermal properties:

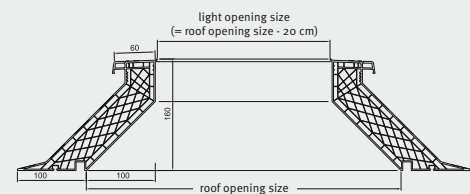
U value: 0.92 [W/m²K]

Dimensions:

Height: 160 mm

Light opening size = roof opening size - 20 cm

- Tapering 2 x 100 mm
- Inclined inner wall



alwitra kerb 3020

The kerb 3020 is 30 cm high, making it particularly suitable for roofs with ballast (e. g. ballasted or green roof), without needing any further modifications regarding the flashing height. It is tapered to the top by 20 cm, so because of the inclined inner wall, the light opening size is 20 cm smaller than the roof opening size.

Thermal properties:

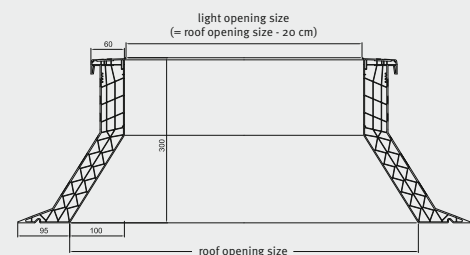
U value: 1.0 [W/m²K]

Dimensions:

Height: 300 mm

Light opening size = roof opening size - 20 cm

- Tapering 2 x 100 mm
- Inclined inner wall



alwitra kerb 1600

The kerb 1600 is 16 cm high, no tapering. This means a vertical inner wall, with the light opening size being the same as the roof opening size. Ensuring maximum daylight intake with a modern design.

Thermal properties:

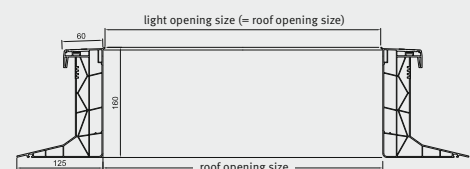
U value: 1.0 [W/m²K]

Dimensions:

Height: 160 mm

Light opening size = roof opening size

- Tapering 00 mm
- Vertical inner wall



Factory-fitted EVALON® or EVALASTIC® collar

alwitra kerbs - as part of the alwitra flat roof system - can be supplied with a factory-fitted EVALON® or EVALASTIC® collar.

This means that alwitra kerbs are already completely watertight and, after having been screwed to the substrate, need only to be welded to the installed waterproofing membrane on site. Absolutely no need for labour and time consuming detail work on site like exact cutting-to-size of tapes, forming corners or installing cappings.

You will benefit from shorter installation time and maximum reliability, as the required auxiliary parts have already been factory-fitted.

Technical data:

Material: cut-to-size EVALON® or EVALASTIC® waterproofing membranes and preformed details, fully bonded to the kerbs over the entire height

Thickness: 1.5 mm

Colour: all standard waterproofing membrane colours

Top fixing: special aluminium profile and stainless steel screws with sealing washer



For further information, in particular on the version with factory-fitted collar, please refer to www.alwitra.de/en/videos-english/



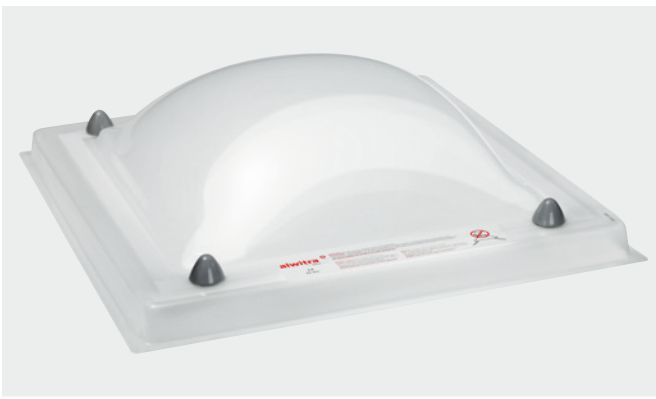
alwitra kerb with collar



alwitra kerb with collar: corner detail

alwitra rooflights

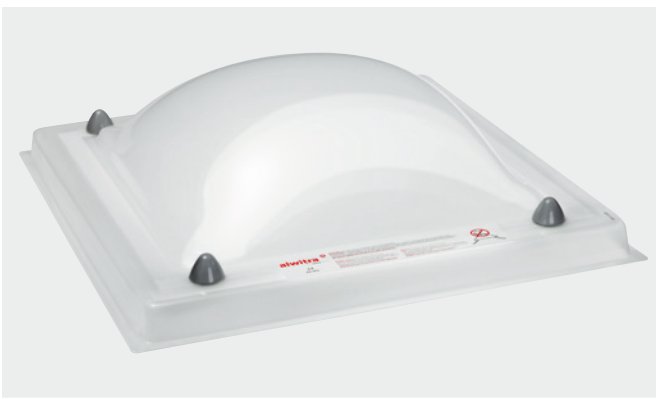
As standard, alwitra rooflights are available in single-skin, double-skin, triple-skin or multi-skin versions with additional thermal insulation properties. The thermally insulating version provides optimum thermal protection as well as outstanding lighting of the room through efficient light dispersion and low light loss. alwitra rooflights are equipped with a anti-vandal screw system.



Double-skin acrylic glass rooflight 2S

Acrylic glass rooflight 2S (U value: 2.68 [W/m²K])

The double-skin version consists of two domed extruded polymethyl methacrylate skins (PMMA). Acrylic glass is a highly transparent, impact-proof and UV resistant plastic. The standard version consists of two opaque skins; a version with two transparent skins is available on request.



Multi-skin acrylic glass rooflight 3S

Acrylic glass rooflight 3S (U value: 1.70 [W/m²K])

The triple-skin version consists of three domed extruded polymethyl methacrylate skins (PMMA). The standard version consists of two opaque skins and a transparent middle skin; a version with three transparent skins is available on request.



Multi-skin acrylic glass rooflight 2S WD

Acrylic glass rooflight 2S WD (U value: 1.23 [W/m²K])

The multi-skin rooflight 2S WD consists of a transparent domed outer acrylic glass skin (PMMA), a 10 mm domed transparent SPC sheet and an opaque inner acrylic glass skin. Due to their outstanding thermal insulation characteristics, these rooflights are the ideal solution for buildings with increased thermal protection requirements.

Technical data

Material	Build-up	U value [W/m ² K]	Light transmittance [%]	g value	R _w value [dB]
Acrylic (PMMA)	1S clear	5.36	90%	0.87	12
	1S opaque	5.36	83%	0.76	12
	2S clear	2.68	81%	0.75	20
	2S opaque	2.68	69%	0.58	20
	3S clear	1.70	73%	0.65	22
	3S opaque	1.70	62%	0.51	22
	4S clear	1.24	64%	0.54	23
	4S opaque	1.24	59%	0.48	23
	5S clear	1.03	58%	0.47	23
	5S opaque	1.03	53%	0.41	23
Polycarbonate (PC)	1S clear	5.36	88%	0.87	12
	2S clear	2.68	79%	0.75	20
	2S opaque	2.68	73%	0.63	20
	3S clear	1.70	71%	0.65	22
	3S opaque	1.70	61%	0.48	22
	4S clear	1.24	63%	0.54	23
	4S opaque	1.24	58%	0.46	23
Polycarbonate Heatstop	1S opaque	5.36	49%	0.59	12
	2S opaque	2.68	41%	0.45	20
	3S opaque	1.70	37%	0.39	22
	4S opaque	1.24	32%	0.32	23
2SWD PMMA	opaque	1.23	51%	0.42	21
2SWD PC	opaque	1.23	50%	0.41	21

Reaction to fire PMMA: Euroclass E

Reaction to fire PC: Euroclass B-s1, do

CE marking DIN EN 1873

Opening and ventilation systems for alwitra rooflights

Rooflights can also be used for room ventilation, as a natural smoke vent with geometric cross-section or for providing access to the roof. For all types of opening, in general, a vent frame is required where all necessary parts are included and prefitted. For available standard configurations and combinations please refer to our current price list. Further configuration versions on request.



Manual opening with telescopic spindle

Manual opening (manual telescopic spindle)

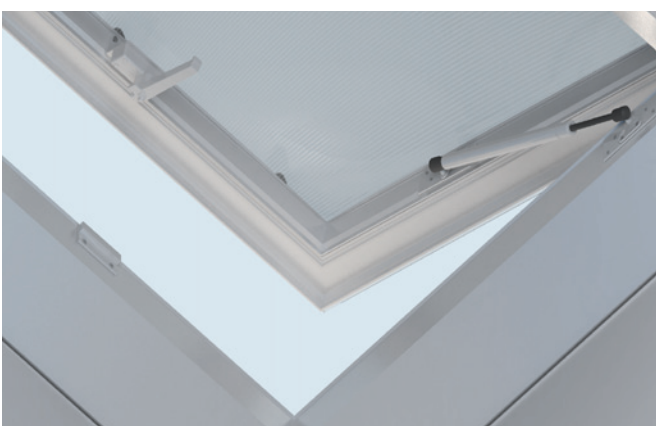
This is the most simple way of opening. The manual telescopic spindle is hooked to the brackets at the kerb and the vent frame. The rooflight is opened by turning the optionally available crank handle. If the side length (light opening size) exceeds 1400 mm, a tandem version with two interconnected spindles is installed. For some versions, manual opening can be combined with a roof hatch function.



Electrical opening with chain actuator

Electric opening (motor opener)

An electric actuator 230 VAC provides significantly more comfort. You can control the actuator with a switch or an optional remote control. As with the manual opening, if the side length (light opening size) exceeds 1400 mm, a tandem version with two electrically interconnected actuators is installed. For some versions, electric opening can be combined with a roof hatch function.



Roof hatch with manual opening

Roof hatch

alwitra rooflights can be installed as roof hatches with manual opening to provide access to the roof e. g. for the chimney sweep or for maintenance and repair works. Gas springs on both sides facilitate the opening and closing of the rooflight. Along with the roof hatch function, the system can also be combined with the options of a manual spindle, electric opening or natural smoke vent.

Natural smoke extraction in stairwells

alwitra natural smoke vents for stairwells: reliable and safe.

The electronically controlled smoke vent system, along with its lighting and daily ventilation function, provides a geometric smoke extraction area and thus safe escape and rescue routes, pursuant to the federal state building regulations (Landesbauordnung - LBO).

With maintenance-free 24 V DC motor openers with 400 mm or 500 mm lift, virtually all alwitra rooflights can be equipped with this additional feature. A great combination of all positive characteristics: bright stairwells through optimal natural lighting, fresh air through daily ventilation, and, if necessary, the safety of a low-smoke stairwell.

Optionally, depending on the size, the rooflights can be fitted with a lifting mechanism (with gas springs) for roof hatch function. A simple unlocking mechanism allows exit to the roof.

Advantages:

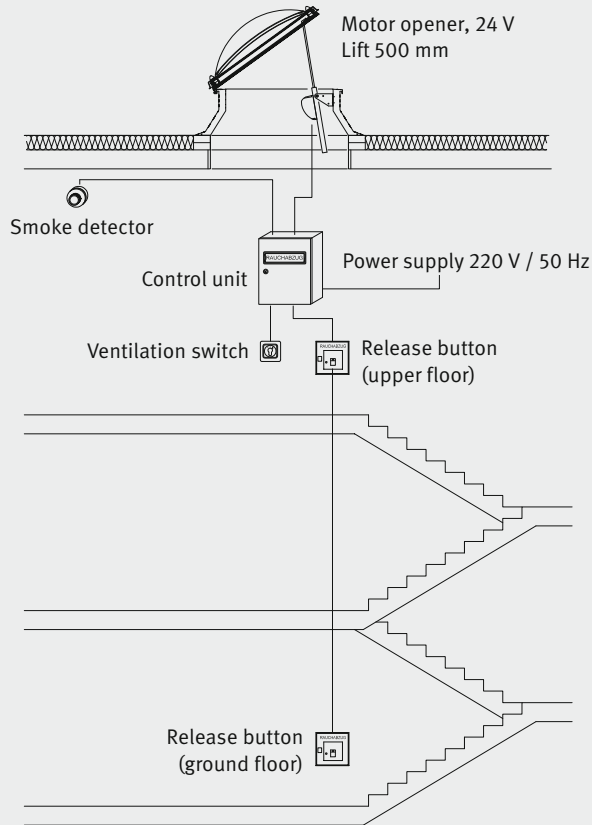
- natural lighting combined with preventive fire protection
- suitable for daily ventilation
- electronic monitoring of all important functional circuits
- low installation costs
- easy operation
- maintenance friendly
- emergency power supply up to 72 hours
- available with lifting mechanism for roof hatch function (depending on the size)
- various setting options via supplied software

Nominal width = roof opening size [cm]	Kerb 1620 / 3020 geometric opening area [m ²]			Kerb 1600 geometric opening area [m ²]		
	Type of drive	400 mm lifting height (Chain feed drive)	500 mm lifting height (Rack and pinion drive)	Type of drive	400 mm lifting height (Chain feed drive)	500 mm lifting height (Chain feed drive)
60 x 60	S	0.16	-	S	0.36	-
60 x 90	S	0.28	-	S	0.54	-
80 x 80	S	0.36	-	S	0.64	-
90 x 90	S	0.49	-	S	0.72	-
90 x 120	S	0.70	-	S	-	1.05
100 x 100	S	0.64	-	S	-	1.00
100 x 150	S	-	1.04	T	-	1.25
120 x 120	S	-	1.00	S	-	1.20
150 x 150	S	-	1.30	T	-	1.50

Further sizes on request

Bold: ≥ 1,0 m² geometric opening area (Minimum requirement according to LBO)

Natural smoke extraction in stairwells



illustrative sketch



At a glance!

Critical data – 24 hours a day:

If the green LED is on,

you can be certain that:

- mains, battery
- motor connection
- signal lines

are ready and fully operational.

Also in the case of power failure:

The emergency power supply system will ensure operational availability up to 72 hours.

Release buttons are available in the following colours:

orange / red / yellow / blue / grey



alwitra control unit
NRA 24, 5 A

Control unit NRA 24

Connecting options:

- Motor 24 V DC depending on the version:
 - max. 5 A (1 drive circuit and 1 ventilation circuit)
 - max. 10 A (1 drive circuit and 1 ventilation circuit)
 - max. 20 A (2 drive circuits and ventilation circuits)
- Release button: max. 10 pcs.
- Smoke detector: max. 10 pcs.
- Ventilation switch: max. 10 pcs.
- Signal contacts (error or emergency opening) through potential-free relay contact (optional accessories "relay board")
- Optional wind and rain sensors can be directly connected, without electronic evaluation system

- Connection to external bus systems (LON, KNX) possible via auxiliary module

Monitoring functions:

- Mains, battery and charging circuit
- Drive circuit
- 2 signal circuits:
 - circuit a: manual release
 - circuit b: automatic release

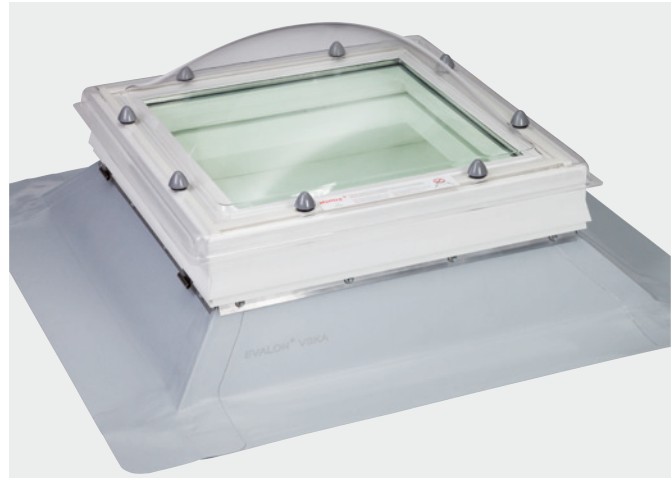
Cabinet

- For surface mounting: steel
Colour: RAL 7035 (light grey)
- For flush mounting: steel with flush mounting frame, optionally available (5 A version only)

alwitra DayLuxe window

The high-quality flat roof **alwitra DayLuxe window** is another component of the alwitra daylight system. Instead of the standard vent frame, it features a high-performance multi-cell frame with a laminated safety glass pane (HR++). In combination with an alwitra kerb and an alwitra rooflight, you get a flat roof window, absolutely suitable for living spaces, with optimum characteristics:

- Compatible with all alwitra rooflights
- Compatible with all alwitra kerbs
- Thermal insulation U value approx. 1.00 W/m²K
- Airborne sound insulation $R_w = 40$ dB (for 1S)
- Fall-through resistance 1,200 J



alwitra DayLuxe window on kerb 1620 with collar



Buildup of the alwitra DayLuxe window

Technical data and available sizes

alwitra DayLuxe window		Nominal kerb sizes (roof opening size)		
Light opening size [cm x cm]	Light opening [m ²]	AK 1620	AK 3020	AK 1600
40 x 70	0.23	60/90	60/90	40/70
60 x 60	0.30	80/80	80/80	60/60
60 x 90	0.47	80/110	80/110	60/90
70 x 70	0.42	90/90	90/90	70/70
80 x 80	0.56	100/100	100/100	80/80
80 x 180	1.31	100/200	100/200	80/180
90 x 90	0.72	110/110	110/110	90/90
100 x 100	0.90	120/120	120/120	100/100
100 x 150	1.38	120/170	120/170	100/150
120 x 120	1.32	140/140	140/140	120/120
130 x 130	1.56	150/150	150/150	130/130
140 x 140	1.82	160/160	160/160	140/140

Bold = stock sizes

Technical data of the alwitra DayLuxe window (with 1S PMMA transparent)

U value: ~ 1.00 [W/m²K]

Light transmittance: 78 %

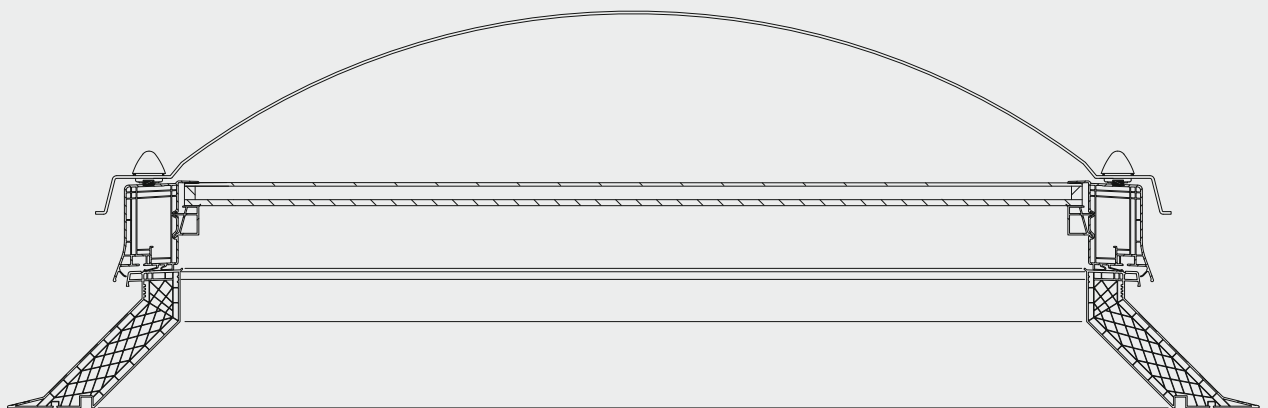
Airborne sound insulation: $R_w = 40$ dB

Air tightness: class 2

Fall-through resistance: 1,200 J

Fire class: Euroclass E

CE marking: DIN EN 1873 in combination
with alwitra rooflight and
alwitra kerb



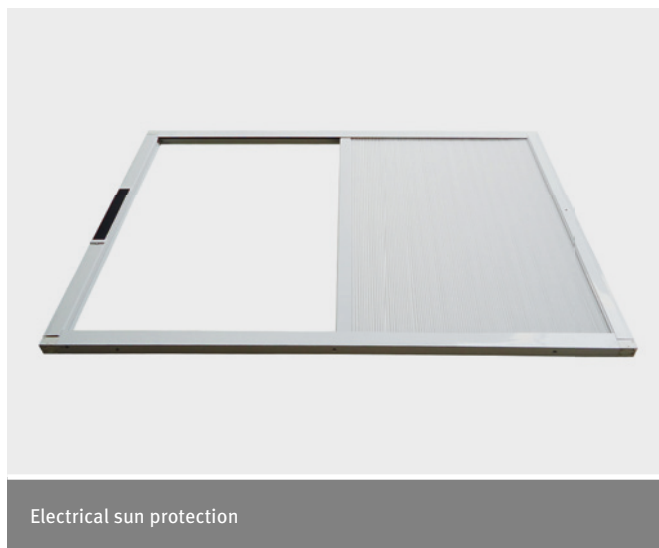
Cross-section kerb 1620 with alwitra DayLuxe window and alwitra rooflight 1S

Accessories for alwitra daylight systems

Electrical sun protection

The electrical sun protection can be installed in every alwitra kerb. The sun protection is mounted directly under the rooflight or the glazing of rigid rooflights. Alternatively, an installation in the roof opening is possible.

- multi-layer plissé made of white polyester
- perfect fit of the white coated aluminium profiles with the profile of the frame or the kerb
- almost noiseless operation
- power supply from integrated solar cells; an electrical connection is not required
- incl. remote control



Electrical sun protection

Available sizes (daylight sizes)

50 x 50	40 x 70
60 x 60	60 x 90
70 x 70	70 x 100
80 x 80	80 x 130
90 x 90	80 x 180
100 x 100	100 x 130
120 x 120	100 x 150
130 x 130	100 x 160
140 x 140	100 x 200

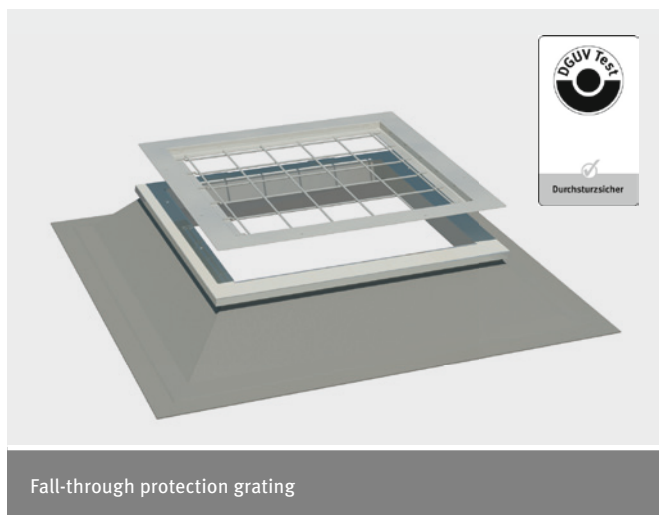
alwitra fall-through protection grating

Square and rectangular alwitra rooflights can be equipped with galvanized white (RAL 9016) fall-through protection grating according to GS-18.

Due to the universal installation options

- underneath the kerb
- in the kerb
- in the vent frame directly underneath the rooflight

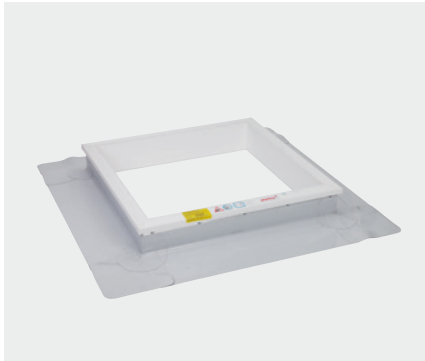
fall-through protection can be ensured in virtually every installation situation - even later



Fall-through protection grating

alwitra fall-through protection gratings are available for all square and rectangular alwitra rooflights. For the size of the grating please note the place of installation (roof opening size or daylight size).

Overview of alwitra daylight systems



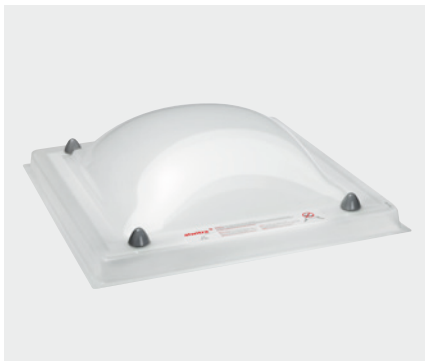
Kerb 1600 with collar



Kerb 3020 with collar



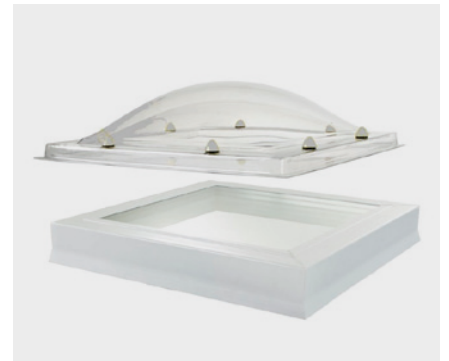
Kerb 1620 with collar



Acrylic glass rooflight, single- to triple-skin



Multi-skin acrylic glass rooflight 2S WD



Acrylic glass rooflight with alwitra DayLuxe window



Further information is available at
www.alwitra.de/en/flat-roof-systems/products/daylight-systems-flat-roofs/



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