



500-600

smoke vents
and skylights

mcr
S-THERM



We provide safety

NATURAL SMOKE EXHAUST SYSTEM

Following recent changes relating to fire safety requirements in the construction market, Mercor are expanding our range of smoke exhaust vents, with further products which are characterised by an increased thermal insulation and at the same time have a modular structure. mcr S-THERM are innovative smoke vents and skylights that will comply with current and future thermal parameter requirements.

The main design consideration for this product range was to eliminate the thermal bridges. By removing them, we have created a product with a very advantageous heat transfer coefficient, which is an extremely important parameter in the modern construction industry.

Also, since the elements of the vent are not welded, the production time is shorter. Customers may find it beneficial that mcr S-THERM vent has no joints that need to be protected

which results in reducing risk of corrosion. mcr S-THERM is a vent made of chamber aluminium profiles with thermal spacers. The vent has a modular construction, enabling the installation process to be divided into stages. We deliver it to the site as separate elements that are ready for assembling. These include a leaf, frame, base and an actuating mechanism. With the innovative design of the hinge, the leaf is easy to install and the vent is durable.

The available variants of the steel base of the mcr S-THERM vent are straight, skew or designed for the existing plinth. We are working on further variants of the product with additional features of the base (also made of wood), the leaf panel and the opening mechanism.

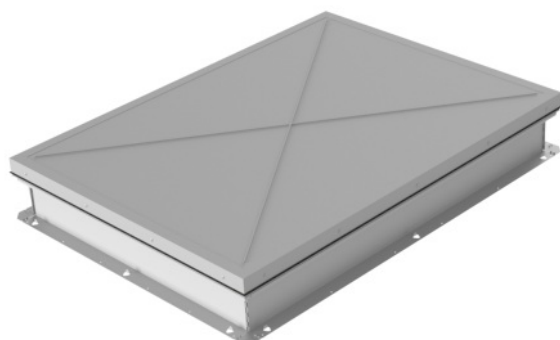
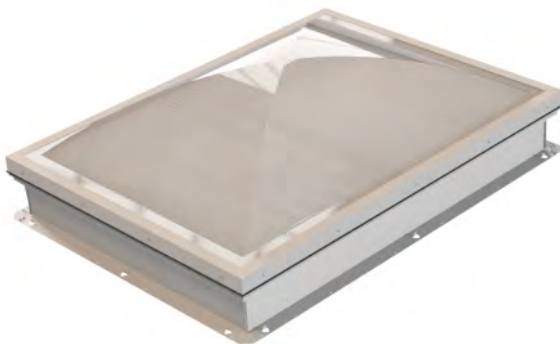


Mercor Group's aim is to provide safety to the building users by ensuring comprehensive fire protection.

For more than 30 years, at every stage of an investment process, we offer our business partners products and services they can rely on. As a leader of modern technologies in the fire protection industry, we launch new solutions which exceed standards and are distinguished by high quality and aesthetics.

smoke vents and skylights **mcr S-THERM**

mcr S-THERM SKYLIGHT AND SMOKE VENT



MULTI-CHAMBER POLYCARBONATE PLATE

PCA 10, PCA 16, PCA 20, PCA 25

SET:

- **MULTI-CHAMBER
POLYCARBONATE PLATE**

PCA 10, PCA 16, PCA 20, PCA 25

- **DOME**

POLYCARBONATE OR ACRYLIC

PANELS

ALU + XPS + ALU OR ALU + PCA

mcr S-THERM ADVANTAGES

FUNCTION

Smoke vent, ventilation vent, skylight.



QUALITY

An innovative system of aluminum profiles ensures outstanding durability. A multi-level gasket system provides tightness. Specially designed aluminum hinge provides very high mechanical resistance.



AESTHETICS

High-quality products made of plastic and aluminium. The colours of the product harmonise with the finish elements of the building.



DESIGN

Many variants of the base, panels and actuators fulfil individual needs of designers and users.



HEAT

Excellent thermal performance, no thermal bridges. Meets all future U_{rc} heat transfer requirements.



MODULAR DESIGN

Flexible lead times. Easy installation and roofing works.

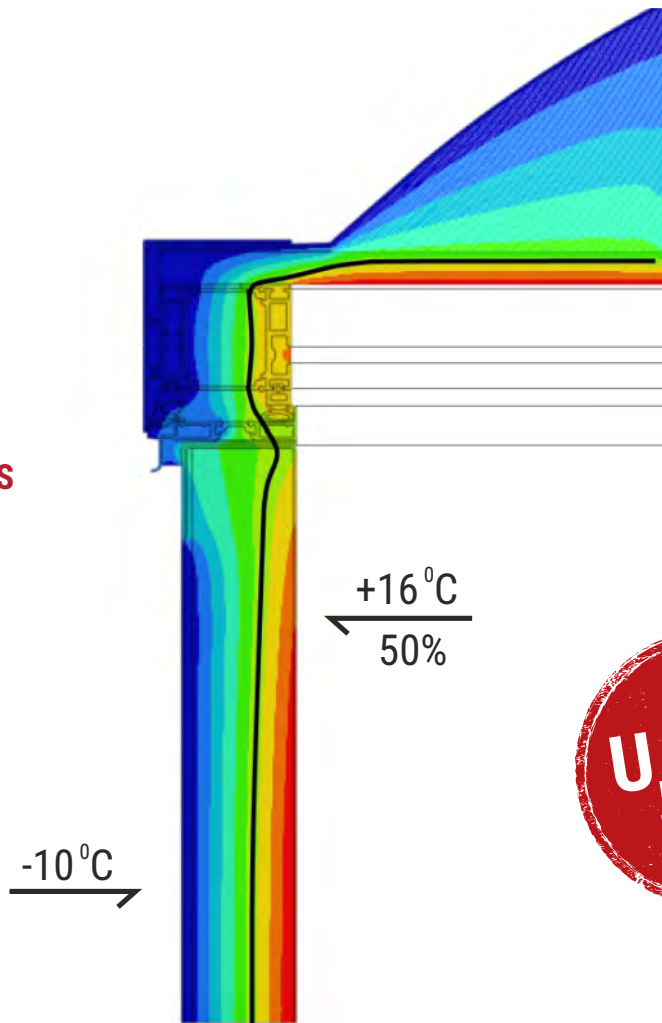


ENERGY EFFICIENCY

ISOTHERMS FOR mcr S-THERM PRODUCTS

The research carried out on the basis of the current standards confirmed a uniform shape of the isotherms for the profiles of the mcr S-THERM product family.

With such energy efficiency of the components, we can offer vents and skylights **without thermal bridges**. The dew point isotherm $5.5\text{ }^{\circ}\text{C}$ extends entirely within the structure of the vent.

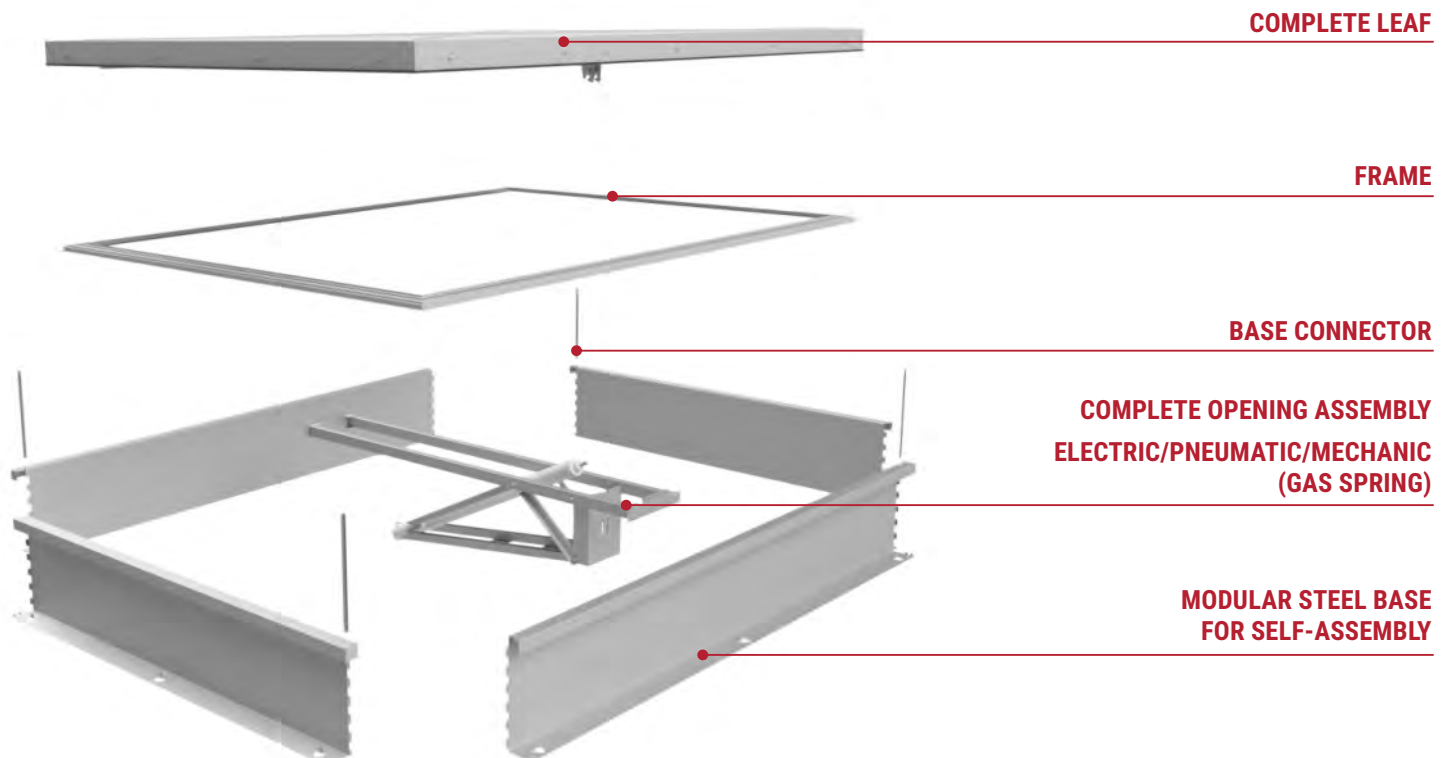


mcr S-THERM FEATURES



- **NO THERMAL BRIDGES**
Reduction of water vapour condensation.
- **EASY REPLACEMENT OF THE VENT PARTS**
Change of the leaf-filling, e.g. its thickness, type or colour.
- **ENVIRONMENT-FRIENDLY PRODUCTION**
No welded joints mean a low energy consumption.
- **MODULAR DESIGN**
Ergonomics of work during assembly and transport.
- **AESTHETIC WORKMANSHIP**
Use of extruded aluminium profiles and the choice of powder-painted elements and a wooden base.

mcr S-THERM MODULAR DESIGN OF SMOKE VENT



COMPLETE LEAF

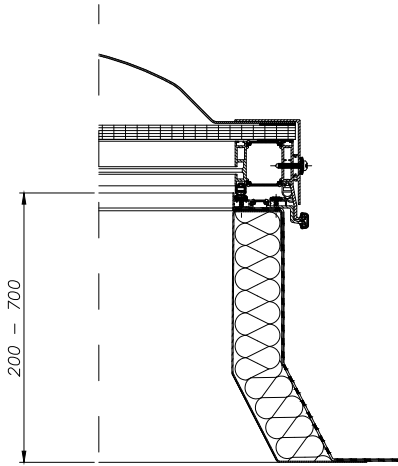
FRAME

BASE CONNECTOR

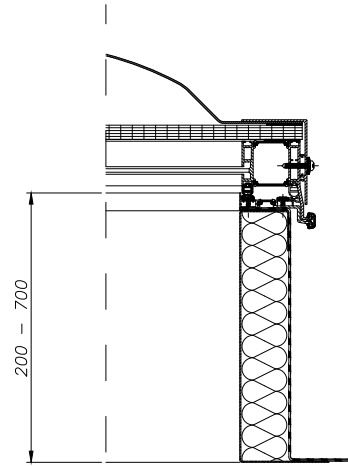
COMPLETE OPENING ASSEMBLY
ELECTRIC/PNEUMATIC/MECHANIC
(GAS SPRING)

MODULAR STEEL BASE
FOR SELF-ASSEMBLY

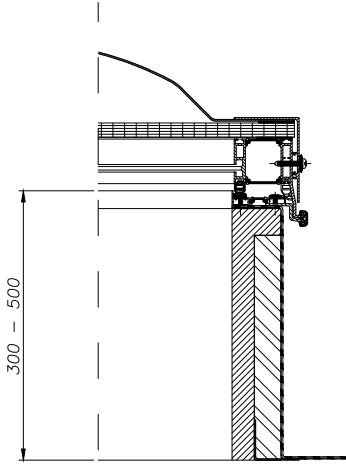
BASE OF mcr S-THERM SKYLIGHT AND SMOKE VENT



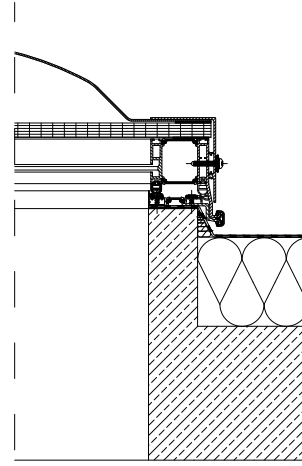
Steel base, skew type NG-A



Steel base, straight type C, E



Wooden base, straight type



Base on the plinth,
e.g. made of reinforced concrete



mcr S-THERM SMOKE VENT CLASSIFICATION ACCORDING TO EN 12101-2:2005 STANDARD

100 [cm] x 100 [cm]	Min nominal size
180 [cm] x 250 [cm]	Max nominal size
SL 250 ÷ SL 950	Snow load class
WL 750 ÷ WL 1500	Wind load class
B 300, B600	High temperature resistance class
Re 50 or Re 100	Reliability
E, F	Reaction to fire class for other components
60 [s]	Maximum vent opening time to working position
140° ÷ 160°	Vent opening angle

skylights and smoke vents mcr S-THERM

EXAMPLE mcr S-THERM SMOKE VENT PARAMETERS (WITH STRAIGHT BASE, TYPE C, E)

Vent type	Nominal dimension (*)	Base min H = 500 mm			Base min H = 300 mm			Approx. weight (**)
		Active area Aa [m ²]			Active area Aa [m ²]			
	A x B	Standard	With wind deflectors	With wind and inlet deflectors	Standard	With wind deflectors	With wind and inlet deflectors	
	[mm]	Without wind and inlet deflectors			Without wind and inlet deflectors			
C100	1000 x 1000	0,72	0,71	0,79	0,64	0,67	0,75	88
C120	1200 x 1200	0,98	1,01	1,14	0,85	0,95	1,09	101
C140	1400 x 1400	1,28	1,35	1,57	1,09	1,27	1,51	124
C150	1500 x 1500	1,43	1,55	1,80	1,22	1,46	1,73	131
C180	1800 x 1800	1,95	2,20	2,62	1,64	2,11	2,49	161
E150/250	1500 x 2500	2,27	2,55	3,00	1,84	2,44	2,89	163
E180/250	1800 x 2500	2,63	3,02	3,65	2,14	2,88	3,51	185

* Smoke vents can be made with intermediate dimensions, between the values in the table. The value of active smoke exhaust area for those dimensions is determined by linear interpolation.

** Estimated weight specified for smoke vent with uninsulated base of height 500 mm with wind and inlet deflectors of standard configuration with multi-chamber polycarbonate plate of 16 mm thickness and pneumatic control.

EXAMPLE mcr S-THERM SMOKE VENT PARAMETERS (WITH SKEW BASE, TYPE NG-A)

Vent type	Nominal Dimension (*)	Base min H = 500 mm	Base min H = 300 mm	Approx. weight (**)
		Active area Aa [m ²]		
	A x B	With wind deflectors	With wind deflectors	
	[mm]	[kg]		
NG-A 110/110	1100 x 1100	0,82	0,81	88
NG-A 120/120	1200 x 1200	0,99	0,96	90
NG-A 140/140	1400 x 1400	1,39	1,35	102
NG-A 150/150	1500 x 1500	1,62	1,50	118
NG-A 150/250	1500 x 2500	2,78	2,66	148
NG-A 180/180	1800 x 1800	2,37	2,30	147
NG-A 180/250	1800 x 2500	3,38	3,24	168
NG-A 190/260	1900 x 2600	3,70	3,55	175

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** Estimated weight specified for smoke vent with uninsulated base of height 500 mm with wind and inlet deflectors of standard configuration with multi-chamber polycarbonate plate of 16 mm thickness and pneumatic control.

HEAT TRANSFER COEFFICIENT U_{tc} OF mcr S-THERM SMOKE VENT

Vent type	Steel base H = 350 mm	Steel base H = 500 mm	Steel base H = 700 mm
C 100/100	1,7 ÷ 1,1	1,4 ÷ 1,0	1,3 ÷ 0,9
C 120/120	1,7 ÷ 1,1	1,5 ÷ 1,0	1,4 ÷ 0,9
C 140/140	1,8 ÷ 1,1	1,6 ÷ 1,0	1,4 ÷ 0,9
C 150/150	1,8 ÷ 1,1	1,6 ÷ 1,0	1,4 ÷ 0,9
C 180/180	1,8 ÷ 1,1	1,6 ÷ 1,0	1,5 ÷ 0,9
C 150/250	1,8 ÷ 1,1	1,6 ÷ 1,0	1,5 ÷ 0,9
C 180/250	1,8 ÷ 1,1	1,7 ÷ 1,0	1,6 ÷ 0,9

U_{tc} coefficient is given in a range depending on the filling used in the vent leaf and the base.

The highest U_{tc} value determined for 10 mm PCA leaf-filling and base thermally insulated with 50 mm mineral wool.

The lowest U_{tc} value determined for 25 mm PCA leaf-filling and base thermally insulated with a 50 mm PIR panel.

**OUR PRODUCTS
ARE PRESENT
IN THE FOLLOWING
COUNTRIES:**



**SMOKE
VENTS IN
CONTINUOUS
ROOFLIGHTS**



**SMOKE
CURTAINS**



**FIRE
DAMPERS**



**SMOKE AND
VENTILATION
VENTS,
ROOF ACCESS
HATCHES**



**SMOKE
AND HEAT
EXHAUST
WINDOW
SYSTEM**



**SMOKE
VENTILATORS**



**LOUVERED
SMOKE
VENTS**



**PVC SMOKE
VENTS AND
SKYLIGHTS**



**BUILDING
STRUCTURE
PROTECTIONS**



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European Union
European Regional
Development Fund



The product was developed within the framework of an innovative project entitled:
**"Comprehensive solutions in the scope of passive fire protection
of buildings including the development of display line"**
subsidized with European funds.