mercor®

smoke vents

mcr S-THERM

We provide safety

NATURAL SMOKE EXHAUST SYSTEM

Following recent changes relating to fire safety requirements in the construction market, „MERCOR" S.A. 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 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 impor tant 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. It 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.

mercor

Mercor Group's mission is to deliver safety to building users by providing them with comprehensive fire protection. For over 35 years, we have been offering our business partners, at every stage of the investment process, products and services they can always trust. As a leader of modern technologies in the fire protection industry, we introduce new solutions that are ahead of the norm, and are additionally characterized by high quality and aesthetic workmanship.

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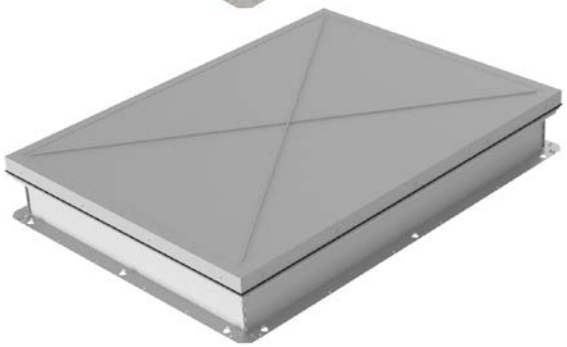
FILLINGS FOR mcr S-THERM SMOKE VENT



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 / ACRYLIC

SANDWICH PANEL

ALU + XPS + ALU / ALU + PCA

mcr S-THERM ADVANTAGES

FUNCTION
Smoke vent, ventilation vent.

QUALITY
Innovative aluminum profile system provides exceptional strength. The multi-level gasket system guarantees the tightness of U_{rc} penetration.

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.

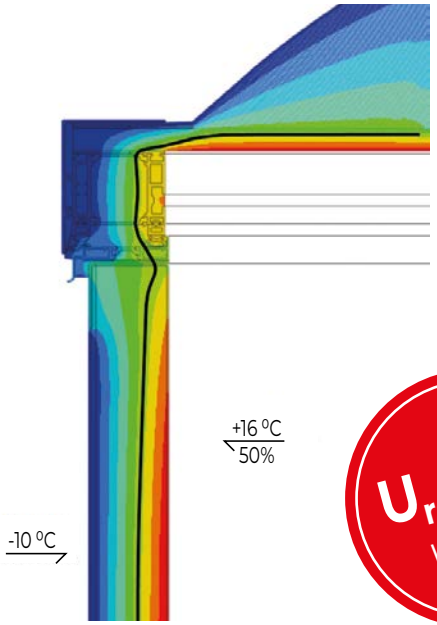
MODULAR DESIGN
Flexible lead times.
Easy installation and roofing works.

ENERGY EFFICIENCY

ISOTHERMS FOR mcr S-THERM PRODUCTS

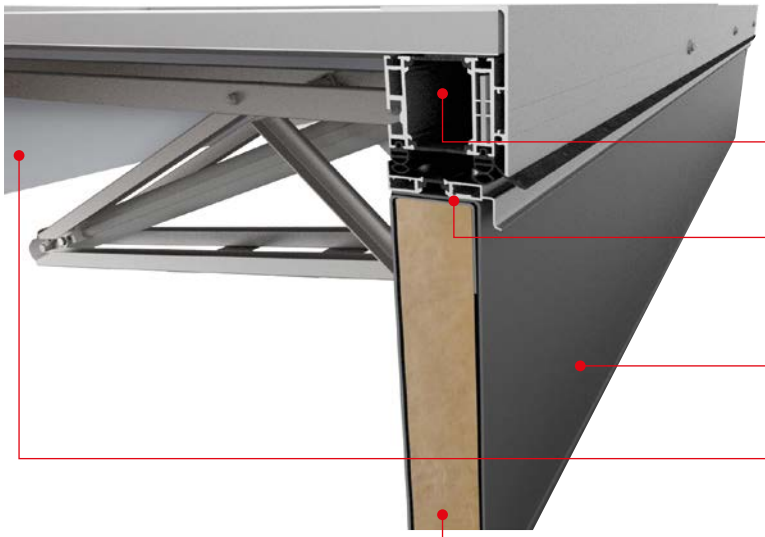
The research carried out on the basis of the current standards confirmed a uniform shape of the isotherms for the profiles of the **mcr S-THERM** product family.

With such energy efficiency of the components, we can offer vents **without thermal bridges.** The dew point isotherm 5.5 °C extends entirely within the structure of the vent.



U_{rc}=0.9 W/m²K

mcr S-THERM FEATURES



NO THERMAL BRIDGES
Reduction of water vapour condensation.

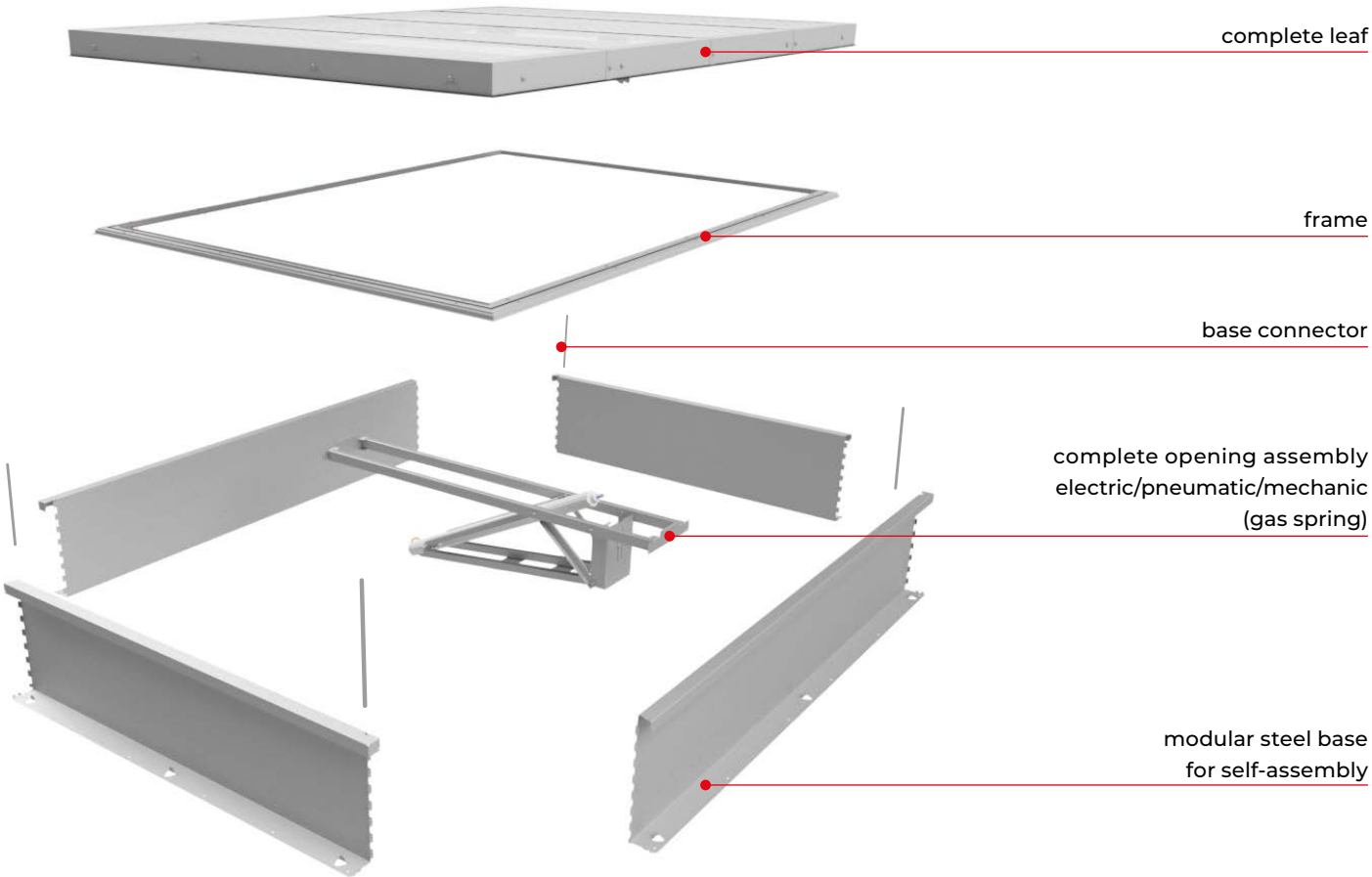
ENVIRONMENT-FRIENDLY PRODUCTION
No welded joints mean
— a low energy consumption.

MODULAR DESIGN
Ergonomics of work during assembly and transport.

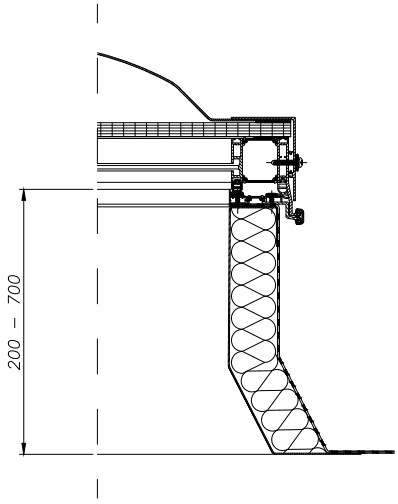
AESTHETIC WORKMANSHIP
Use of extruded aluminium profiles and the choice of powder-pained elements.

EASY REPLACEMENT OF THE VENT PARTS
Change of the leaf-filling, e.g. its thickness, type or colour.

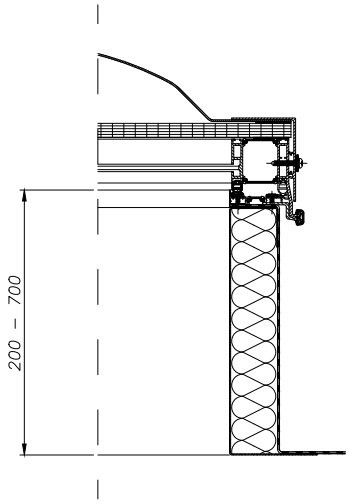
mcr S-THERM MODULAR DESIGN OF SMOKE VENT



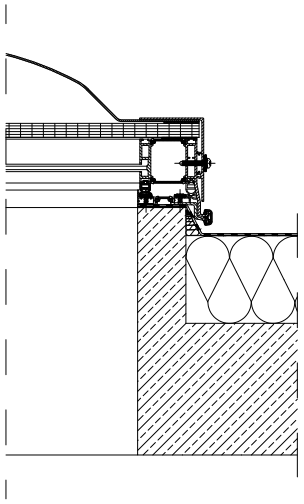
BASE OF mcr S-THERM SMOKE VENT



Steel base
skew type NG-A



Steel base
straight type C/E



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

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

100 [cm] x 100 [cm]	Min. nominal size
180 [cm] x 250 [cm]	Max. nominal size
SL250 ÷ SL950	Snow load class
WL750 ÷ WL1500	Wind load class
B300, B600	High temperature resistance class
Re50 or Re100	Reliability
E, F	Reaction to fire class for other components
60 [s]	Maximum vent opening time to working position
140° ÷ 160°	Vent opening angle

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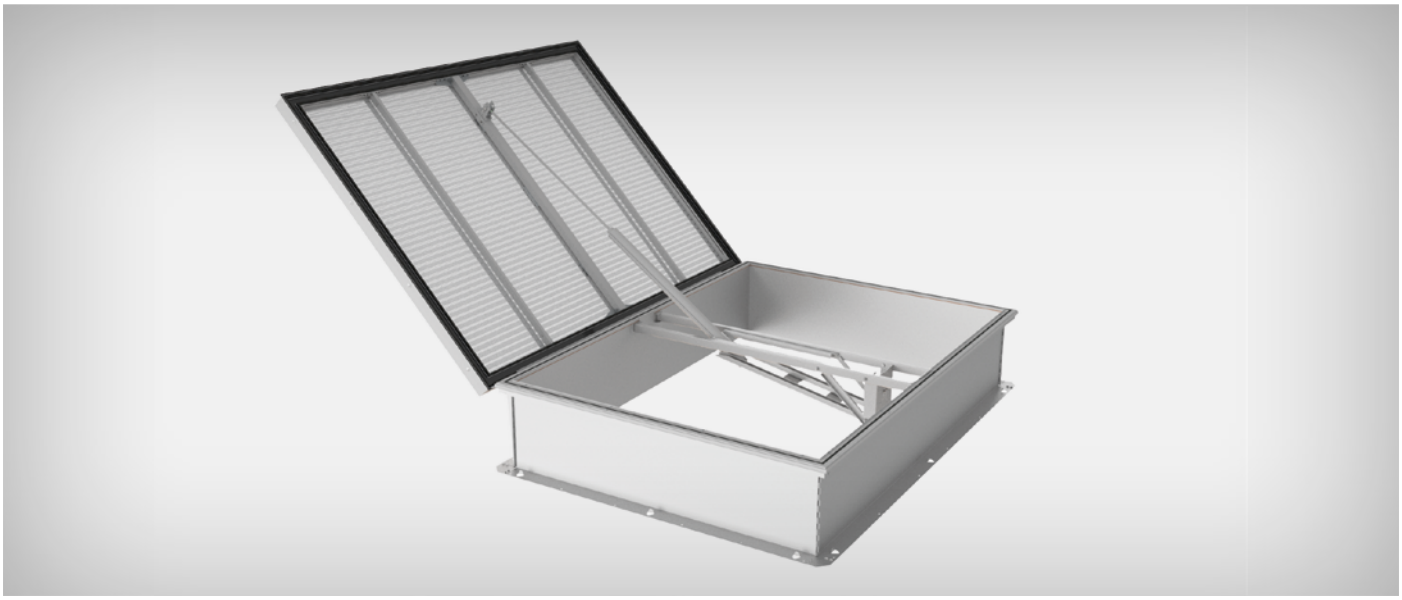
EXAMPLE mcr S-THERM SMOKE VENT PARAMETERS | with straight base, type C/E

Vent type	Nominal dimension (*)	Base min. **h = 500 mm**			Base min. **h = 300 mm**			Approx. mass (**)
		Active area A_a [m^2]			Active area A_a [m^2]			
	A x B	Standard	With wind deflectors	With wind and inlet deflectors	Standard	With wind deflectors	With wind and inlet deflectors	[kg]
	[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. mass (**)
		Active area A_a [m^2]	Active area A_a [m^2]	
	A x B	With wind deflectors	With wind deflectors	[kg]
	[mm]			
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

(*) 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.

HEAT TRANSFER COEFFICIENT U_{rc} 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
C180/250	1.8 ÷ 1.1	1.7 ÷ 1.0	1.6 ÷ 0.9

U_{rc} coefficient is given in a range depending on the filling used in the vent leaf and the base.
The highest U_{rc} value – determined for 10 mm PCA leaf-filling and base thermally insulated with 50 mm mineral wool.
The lowest U_{rc} value – determined for 25 mm PCA leaf-filling and base thermally insulated with a 50 mm PIR panel.

CONTINUOUS ROOFLIGHT WITH SMOKE VENTS

SMOKE AND VENTILATION VENTS

LOUVERED VENTS

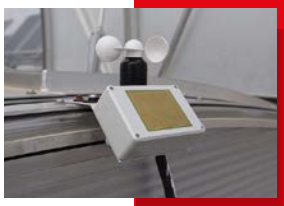
SMOKE CURTAINS

SMOKE EXHAUST WINDOWS

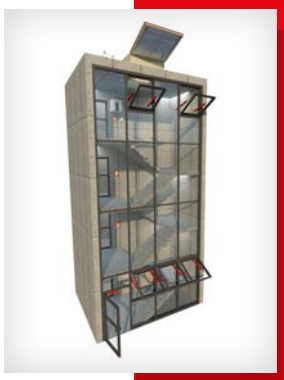
ROOF HATCHES

FIXED SKYLIGHTS

CONTROL SYSTEMS



STAIRCASE SMOKE EXHAUST SYSTEMS



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European Funds Smart Growth

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.

Read more about our smoke exhaust vents mcr S-THERM

www.**mercor**.com.pl/en