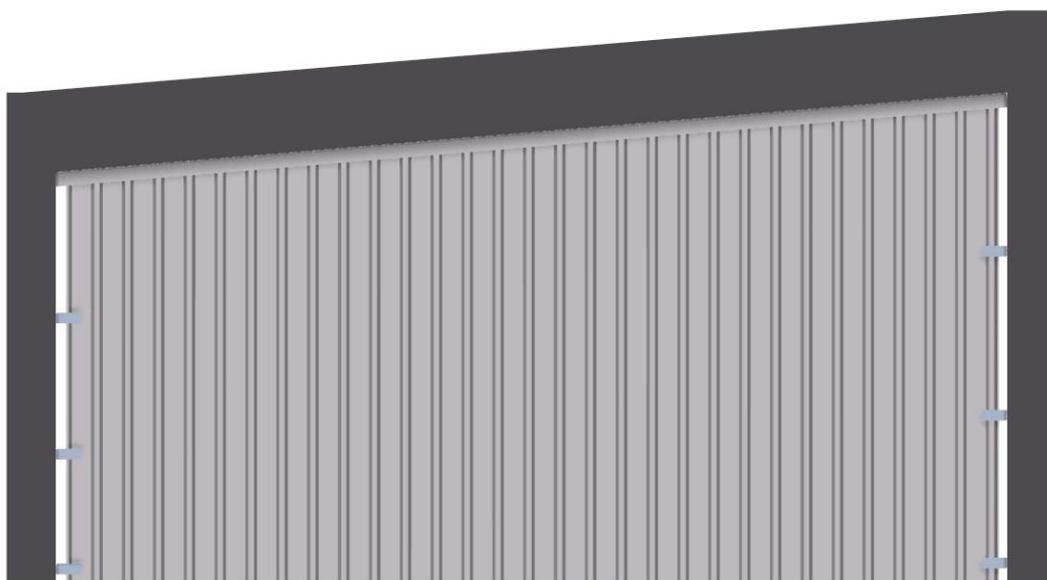




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ASSEMBLY INSTRUCTION WARRANTY TERMS AND CONDITIONS

Fixed smoke curtain mcr PROSMOKE ST CE





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1. INTRODUCTION

The aim of this manual is for the user to learn the intended use, design, operating principle, correct installation and operation of mcr PROSMOKE ST CE fixed curtains.

Complying with the recommendations included in the manual will ensure proper functioning of the smoke venting systems as well as the safety of their users.

“MERCOR” S.A. reserves the right to make changes to the product or to this document without prior notice.

2. INTENDED USE OF THE DEVICE

mcr PROSMOKE ST CE fixed curtains are part of the smoke control system which includes other “MERCOR” S.A. products as well, such as, for example, mcr PROLIGHT, mcr ULTRA THERM spot natural smoke and heat exhaust vents (nshevs), mcr OSO THERM smoke, mcr LAM, nshevs built into the mcr PROLIGHT system continuous rooflight and skylights, MCR9705, MCR0204 smoke vent control units and others.

mcr PROSMOKE ST CE fixed curtains are used to section off smoke reservoirs under ceilings in natural smoke and heat clearance systems. The smoke produced in the event of fire is collected in smoke reservoirs and then removed through smoke vents, e.g. mcr PROLIGHT. By sectioning off smoke reservoirs under ceilings, the curtains limit the smoke spreading, cool it off, and form a smoke layer of design height, thus ensuring proper working conditions for mcr PROLIGHT nshevs.

mcr PROSMOKE ST CE smoke curtains have a certificate of constancy of performance (No. 1396-CPR-0037) with the requirements of the EN 12101-1:2005 standard for SSB fixed smoke curtains, issued by a notified certification body No. 1396.

The building designer is responsible for a proper design of the venting system and for the selection of appropriate curtains for a specific application. mcr PROSMOKE curtains are not intended to be used as smoke control separators. The curtains are fire protection devices – they are not intended for use for other purposes.

3. DESIGN OF CURTAINS

mcr PROSMOKE ST CE is a fixed curtain designed to be suspended in the ceiling section (plenum space) made of trapezoidal steel sheets.

The trapezoidal sheet is suspended by means of fastening elements running along the upper edge of the sheet. Distance of up to 1 m is permitted between the elements. Galvanised steel sheet elements with a minimum thickness of 2 mm are used as fastening elements. Match the shape of the fastening element to the shape and position of the fastening surface – most often these will be angles or Z-bars. Fix the elements using steel connectors with min. Ø6 diameter (machine screws, dowels, anchors) for fixed elements of the building (e.g. lintels, walls, steel construction elements).

The trapezoidal sheet is fixed to the fastening elements using steel connectors with a min. Ø6 mm diameter (self-drilling sheet metal screws, machine screws). The trapezoidal sheet panels are connected with each other using Ø4.8 steel blind rivets or self-drilling screws Ø4.8 for steel sheets. The curtain is combined with vertical sheets in order to obtain the correct size of the curtain. The curtain can be rectangular or trapezoidal.

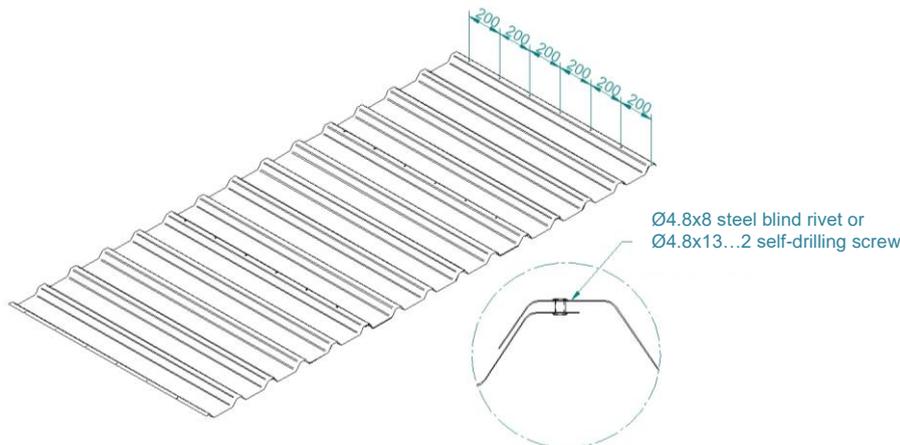
4. TRANSPORT AND DELIVERY

The curtains are delivered in parts together with connectors. Unloading must be carried out under the supervision of a person authorised by the manufacturer, using generally available means of handling (e.g. forklift trucks) or manually, paying special attention to the protection of trapezoidal sheet against damage.

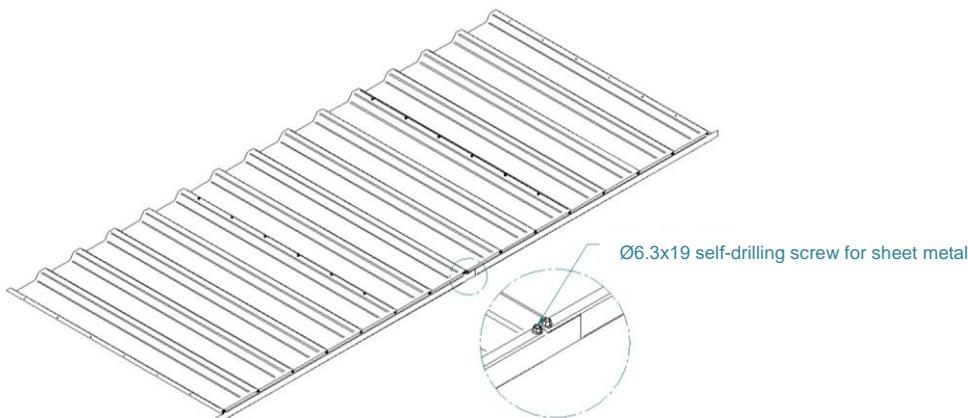
5. INSTALLATION OF CURTAINS

Curtains should be fixed under the ceiling to lintels, prepared structures or other building features intended for this purpose as per the construction design. The structural component should be made of concrete or steel. The weight of the unit must be taken into account when designing the supporting element: approx. 300 N/running metre of the curtain (in version with two angles and of max. 4.5 m height). The mounting surface should be vertical or horizontal, with a flatness deviation of up to 5 mm along the curtain length.

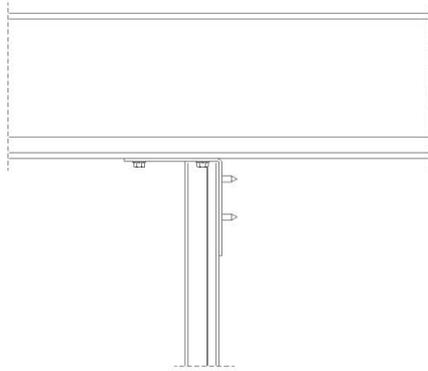
- Prepare the sheets to a suitable length equal to the height of the curtain (if the whole curtain has a different shape than a rectangle). Connect the sheet panels with the overlap by riveting every approx. 200 mm with $\text{Ø}4.8 \times 8$ steel blind rivets or with self-drilling screws for steel sheets $\text{Ø}4.8 \times 13 \dots 22$ (e.g. set of three sheets so that the sheets can be suspended from the ceiling).



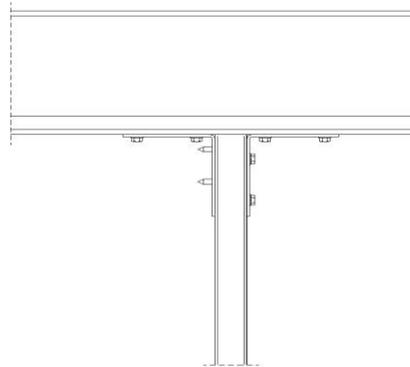
- Fix the covering profile at the bottom of the curtain with self-drilling screws for sheet metal.



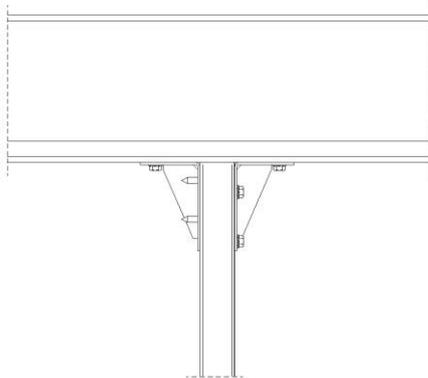
- Possible mounting methods (to concrete lintels or perpendicular to purlins) – the method of installation is chosen at the stage of ordering the curtain and depends on the length and height of the curtain.



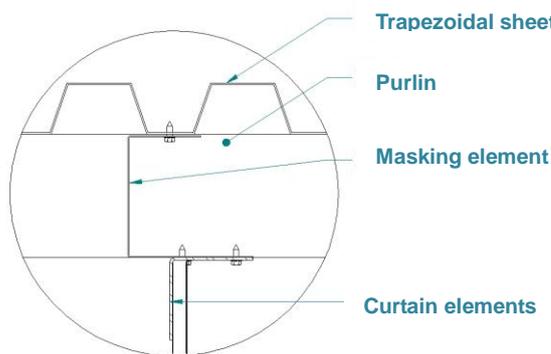
*On one angle
(for curtain height max. 1 m)*



*On two angles
(other curtain heights)*

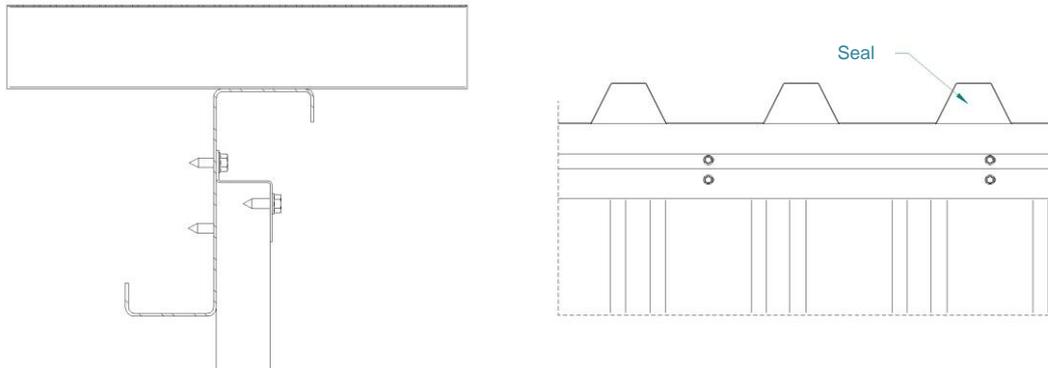


*On two ribbed angles
(applicable in specific cases)*



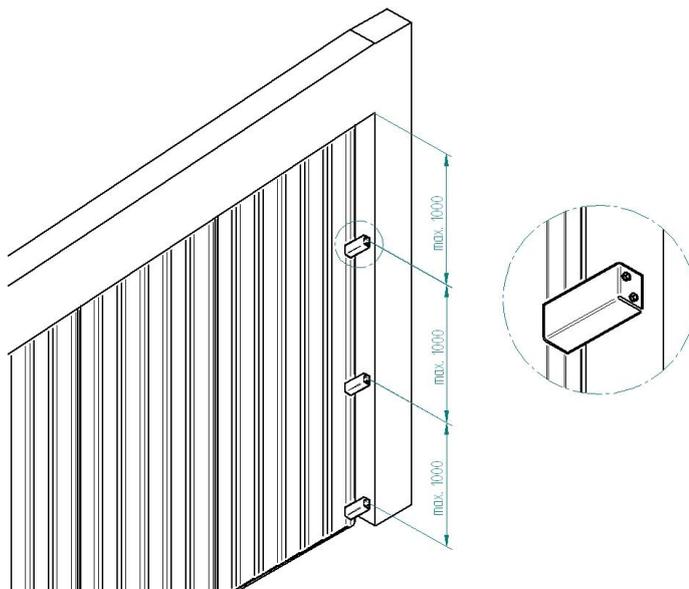
When installed perpendicular to the purlins, the space above the curtain should be covered with a steel sheet masking element. Fix with Ø6.3 self-drilling screws to the metal sheet.

- Possible mounting methods (along purlins)

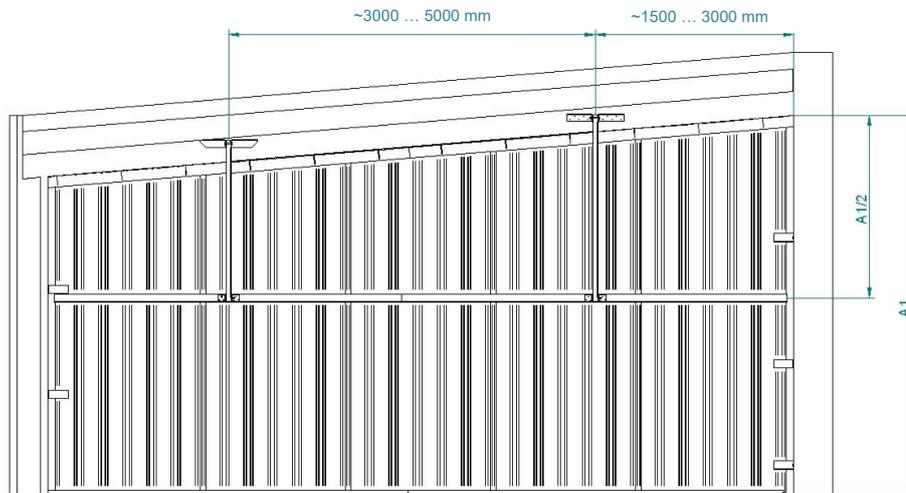


The spaces above the curtain should be sealed with mineral wool or cut-to-size sheet metal elements. Additionally, seal with fireproof foam, polyurethane Soudal Soudafoam 1K FR foam or a similar material.

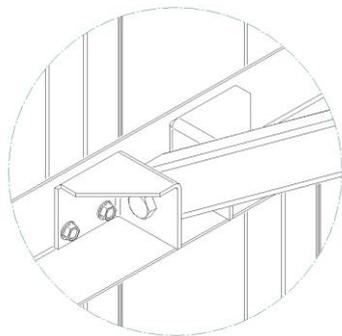
- Fix support brackets at the ends of the curtain. Mounting by means of connectors suitable for the base (e.g. Ø6 steel anchors).



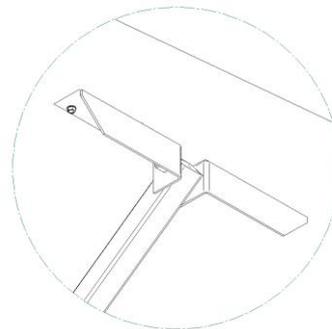
- In case of high curtains (from 2.5 m and above), it is necessary to use curtain reinforcement elements in the form of steel profile “angle braces” or steel cord stay rope on both sides of the curtain.



The reinforcements should be fixed in the middle of the curtain's height, at every 3÷5 m. Fix a steel angle to the curtain with self-drilling screws to the metal sheet. Fix the bracket to the angle and place the steel profile rotationally on the screw between them. At the other end, put the ceiling brackets on and fix them in the right place under the ceiling. Proceed in the same way with a steel cord (on both sides of the curtain).



Mounting to the curtain



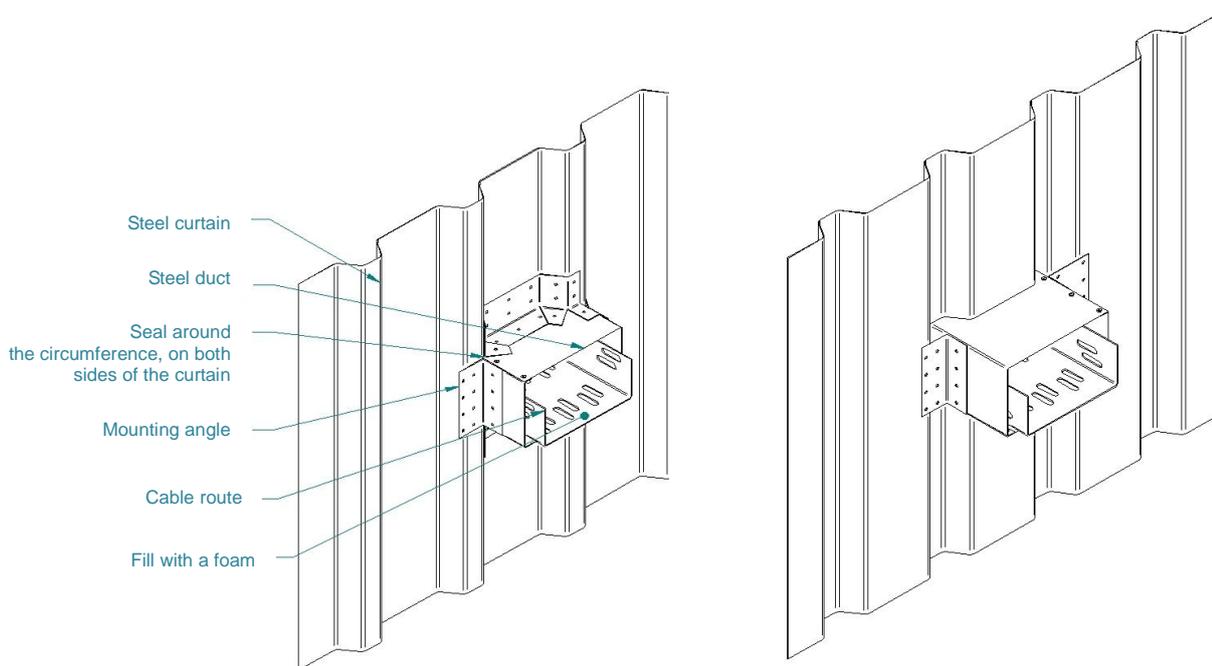
Mounting to the ceiling



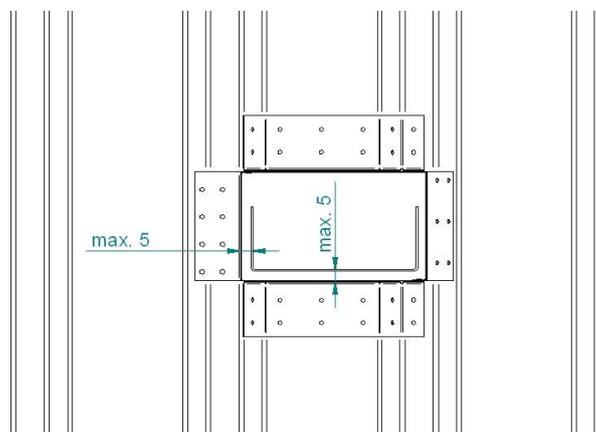
6. SERVICE PENETRATION SLEEVES IN THE CURTAIN

The service penetration sleeves in the curtain should be made with a steel duct. The size of the duct should be adjusted to the dimensions of the cable route, including the wires (max. 5 mm distance from the cable route on each side), with a maximum dimension of 600x300 mm. Adjust the opening in the curtain to the size of the duct (max. 2 mm distance on each side). Fix the duct to the curtain using mounting angles with $\varnothing 4.8 \times 8$ blind steel rivets self-drilling screws for steel sheets $\varnothing 4.8 \times 13 \dots 22$. The mounting angles are delivered to the site in 0.5 m sections. Shape the angles depending on where the cable route passes through the curtain to the trapezoidal sheet profile.

After the installation of the service penetration sleeve, seal the cut-out in the curtain with Soudal Firecyl FR acrylic sealant on the perimeter of the duct on both sides of the curtain (according to the sealant manufacturer's instructions). Fill the service penetration sleeve with fireproof foam, polyurethane Soudal Soudafoam 1K FR foam along the entire length of the duct (according to the guidelines of the foam manufacturer).

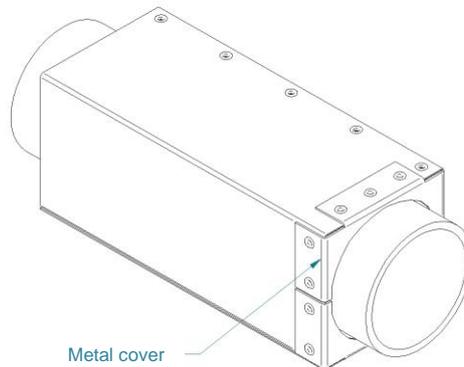


Example of a service penetration sleeve (view from both sides of the curtain)



If it is necessary to pass an existing cable route through the curtain, the next trapezoidal sheets must be joined here (see section 5).

When passing round pipes through a curtain, a square duct should be made about 10 mm larger than the pipe diameter. Cover both ends of the duct with a metal cap (riveted to the duct).



7. GUIDELINES FOR MOUNTING mcr *PROSMOKE ST CE* CURTAIN TO THE ELEMENTS OF THE BUILDING

- I. Determine the shape and dimensions of the curtain and the mounting elements to maintain the design size of the gaps between the curtain and building elements. In the absence of a description of the gaps in the design, it is recommended that they do not exceed:
 - a) 20 mm for curtains up to 2 m high,
 - b) 40 mm for curtains over 2 m up to 6 m high,
 - c) 60 mm for curtains over 6 m high,in order to meet the recommendations of EN12101-1:2005.
- II. Any space between the curtain and the ceiling shall be covered with a partition made of steel sheet, aluminium, mineral wool or other non-flammable materials (class A1 according to EN13501-1).
- III. The dimensions and shape of the fastening elements may vary depending on the material of the base as well as the dimensions and shape of the base, and the fasteners used; therefore, they should be finally selected by the contractor based on the available information.
- IV. Mounting of the curtain's supporting elements to the fixed elements of the building (lintels, ceiling, walls, beams, etc.) should be done with metal connectors:
 - a) M6 machine screws,
 - b) M6 steel anchors.
- V. For fasteners of certain classes of resistance to fire, the relevant guidelines for their use shall be followed. It is possible to use other fasteners; it is, however, recommended to choose fasteners with fire resistance appropriate for the used curtain (appropriate load capacity within 60 minutes).
- VI. Maintain a minimum anchorage depth of 60 mm in materials, such as concrete, brick, etc., for fasteners without tested fire resistance.
- VII. Use threaded connection safeguards (e.g. suitable screw adhesives, spring washers, lock nuts).

8. WARRANTY AND SERVICE TERMS

- 1) "MERCOR" S.A. provides a 12-month warranty on the quality of the unit, beginning from the date of its purchase, unless the contract provides otherwise.
- 2) If during the warranty period any physical defects of the units shall be revealed, "MERCOR" S.A. agrees to remove them no later than 21 days from the date of receipt of written notification, subject to par. 5.
- 3) In the case of defects caused by improper operation of the unit, or for other reasons specified in par. 6, the Buyer / Holder of the warranty will be charged for their removal.
- 4) Liability covered by the warranty only applies to those defects that arise from causes inherent in the devices sold.
- 5) "MERCOR" S.A. reserves the right to extend the time to repair in case of complex repairs or those requiring the purchase of any custom subassemblies [components] or spare parts.
- 6) The warranty does not cover:
 - a) equipment damages or failures caused by improper operation, tampering, lack of maintenance or lack of periodic inspections;
 - b) damages to the units arising from causes other than those attributable to "MERCOR" S.A., and in particular, acts of God, in the form of: torrential rain, flooding, hurricane, inundation, lightning, power surges in the electrical grid, explosion, hail, collapse of an air vehicle, fire, avalanches, landslides, and any consequential damages resulting from the above-mentioned reasons. The torrential rain means a rain with a performance ratio of at least 4, as set by IMGW (Institute of Meteorology and Water Management). If the ratio referred to in the preceding sentence cannot be determined, the factual status and the extent of damages in their place of origin, which will provide for the operation of torrential rain will be taken into consideration. The hurricane means a wind speed of not less than 17.5 m/s (a damage shall be considered as caused by hurricane, if it was found in the immediate vicinity of the hurricane activity);
 - c) damages caused by failing the obligation to immediately report defects revealed;
 - d) coating deterioration caused by the natural process of aging (fading, oxidation);
 - e) defects caused by use of abrasive or harsh cleaning agents;
 - f) parts subject to normal wear and tear (e.g. seals), unless caused by a manufacturing defect;
 - g) damages caused by the action of external aggressive agents, and in particular chemical and biological.
- 7) Any defect covered by the warranty should be reported immediately to "MERCOR" S.A. or local MERCOR's representative, that is, within 7 days from the date of its disclosure.
- 8) The Buyer/Holder of the warranty is required for proper operation, maintenance and conducting periodic (at least 2 times a year) service reviews.
- 9) The warranty expires with immediate effect in the event of:
 - a) when the Buyer/Holder of the warranty introduces any design changes on their own, without the prior agreement of the fact with "MERCOR" S.A.
 - b) the maintenance or periodic maintenance inspections were not performed on time or were executed by unauthorized persons or a service centre not authorized by "MERCOR" S.A., or if the unit was improperly operated
 - c) any intervention of unauthorized personnel - outside activities which fall within the normal operation of the unit
- 10) In addition, in the cases referred to in par. 9, responsibility of "MERCOR" S.A. for the warranty is excluded.

In matters not covered by these warranty terms and conditions, the relevant provisions of the Civil Code shall be applicable.

Servicing

1. The devices should undergo maintenance inspections every 6 months during their entire life.
2. Maintenance inspections should be carried out by companies with appropriate authorization of "MERCOR" S.A. .
3. For servicing, please contact MERCOR's local representative.

9. CERTIFICATE

 Reg. No. 041/P-007	NOTIFIED BODY No. 1396 Osloboditeľov 282, 059 35 Batizovce, Slovakia tel. +421 52 775 2298 - fax. +421 52 786 1412 - http://www.fires.sk	 The Experts on Fire Safety
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Certificate of constancy of performance
1396-CPR-0037

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction products Regulation or CPR), this certificate applies to the construction product

STATIC SMOKE BARRIER (SSB)
MCR PROSMOKE ST CE

designed as a part of smoke and heat control systems, for creation of smoke reservoirs inside the building, for control of movement of smoke and heat inside the building and for increase of efficiency of natural or powered smoke and heat exhaust ventilators in accordance with EN 12101-1. Product properties are described in the Initial type-testing report No. C1396/09/0036/5004/SC (issued by FIRES, s.r.o., NB 1396 on 20. 01. 2010) amended by an actual report of continuous surveillance,

placed on the market under the name or trade mark of
“MERCOR” S.A.
ul. Grzegorza z Sanoka 2, 80-408 Gdańsk, Poland

and produced in the manufacturing plants
“MERCOR” S.A., Zakład Produkcyjny Systemów Oddymiania i Wentylacji,
ul. Kwarцова 3A, Ciepłowo, 83 031 Łęgowo, Poland
“MERCOR” S.A., Zakład Produkcyjny Systemów Oddymiania i Wentylacji,
ul. Galaktyczna 32, 80-299 Gdańsk, Poland.

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 12101-1: 2005, EN 12101-1:2005/A1: 2006

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

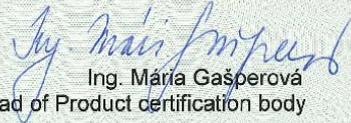
This certificate was first issued on 20. 01. 2010 and will remain valid as long as neither the harmonized standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Batizovce, 26. 10. 2017

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FIRES 136a/C-31/01/2017-E


NOTIFIKOVANÁ OSOBA 1396
FIRES
The Experts on Fire Safety
NOTIFIED BODY 1396


Ing. Mária Gašperová
Head of Product certification body