Fire protection systems

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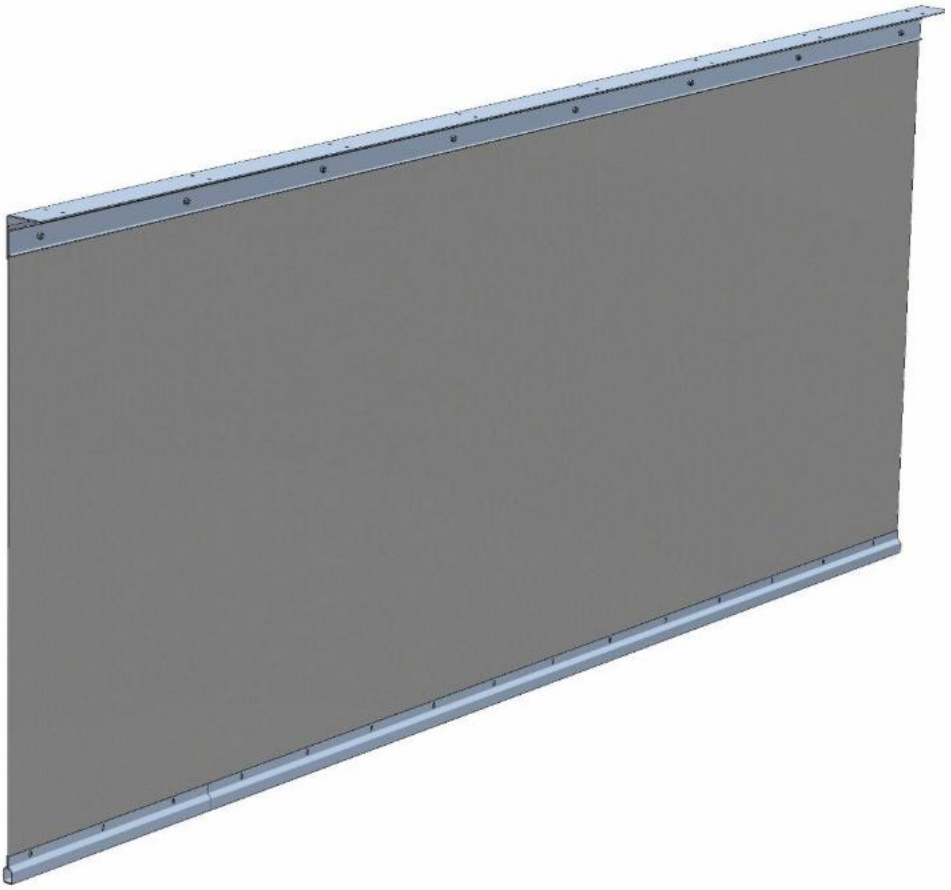
OPERATION
AND MAINTENANCE MANUAL

Fixed curtain
mcr PROSMOKE S CE



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All works related to the installation, operation, maintenance and servicing of the products must be carried out in compliance with health and safety regulations and with the use of appropriate personal protective equipment for the type of work performed, in particular fall protection equipment.
Any work performed at height, involving electrical connections, etc., may only be carried out by personnel holding the appropriate authorisations.

1. INTRODUCTION

This Operation and Maintenance Manual (OMM) explains to the user the use and design as well as the mode of operation, correct installation and maintenance of mcr PROSMOKE S CE fixed curtains. This OMM also contains additional information on the conditions of use, maintenance and the terms of warranty for the product.

Following these instructions shall guarantee correct operation of the smoke extraction systems and the safety of the system users.

Mercor Light&Vent reserves the rights to amend the product or this document without notice.

2. INTENDED USE

mcr PROSMOKE S CE fixed curtains form a part of the smoke extraction system, which includes also other products offered by Mercor Light&Vent, i.e.: mcr PROLIGHT, mcr ULTRA THERM, mcr S-THERM spot smoke vents, mcr LAM louvered smoke vents, mcr PROLIGHT smoke vents built in skylights, mcr 9705 and mcr 0204 smoke extraction control units and other.

mcr PROSMOKE S CE fixed curtains are used to separate smoke containers under the ceiling, in the natural smoke and heat extraction systems. Smoke generated during fire is collected in smoke containers and then removed through smoke vents, such as mcr PROLIGHT PLUS. By separating smoke containers under the ceiling, the curtains limit the spread of smoke, cool it down and create a layer of smoke with proper thickness, ensuring correct operation conditions for mcr PROLIGHT and mcr PROLIGHT PLUS smoke vents.

mcr PROSMOKE S CE smoke curtains have a CE certificate of conformity No. 1396-CPR-0022, compliant with the requirements of EN 12101-1:2005 standard, issued by a notified certification body No. 1396.

It is the designer of the building who is responsible for proper design of the smoke extraction system and selection of proper curtains for specific applications. mcr PROSMOKE curtains are not designed to serve as smoke-proof doors. The curtains are fire protection devices only; they cannot be used as gates or for any similar purpose. They are not intended for daily use for any other purposes.

3. DESIGN

mcr PROSMOKE S CE is a fixed curtain designed for mounting under the roof (ceiling).

The fabric is suspended to the load-bearing elements fixing the fabric. The load-bearing elements run along the upper edge of the fabric. The permissible gap between the load-bearing elements is 1 m. The load-bearing elements are made of galvanised or black (later painted) steel sheet with a minimum thickness of 3 mm. The shape of the load-bearing elements can be adjusted to the shape and position of the mounting area – usually angle brackets or flat bars. The load-bearing elements are mounted using steel connectors with a minimum diameter of Ø6 (machine screws, plugs, anchors) to the fixed elements of the building (e.g. lintels, walls, steel elements of the structure). Non-invasive installation of curtains to steel beams is also possible, using – what is called – vices.

The fabric is attached to the load-bearing elements with a steel strip (2 mm thick steel sheet with length equal to the length of the fixing unit), pressing the fabric and M8 machine screws at ca. 0.5 m intervals, secured against loosening.

The fabric is kept in a vertical position, using a linear bottom weight. The weight is provided by elements with length up to 6 m. The standard weight of this element is ca. 3÷3.5 kg/m; it can be increased up to 7 kg/m.

The fabric of the curtain is made of vertical or horizontal strips sewn together in order to achieve the desired dimensions. The shape of the fabric can be either rectangular or trapezoidal. At the sewing stage, service penetrations for technical installations can be made in the fabric. The location and dimensions of such penetrations should be determined before sewing and provided as design intents for making fixed curtains.

4. TRANSPORT AND DELIVERY

The curtains are supplied unassembled. The product should be unloaded under the supervision of a person authorised by the manufacturer using generally available unloading equipment (e.g. forklift trucks) or manually, paying special attention to avoid damage to the fabric.

5. INSTALLATION OF CURTAINS

The curtains should be mounted under the ceiling, to lintels, specially prepared structures or other elements of the building designed for that purpose. The load-bearing element should be either concrete or steel. The weight of the device should be taken into account while designing the load-bearing element: ca. 90 ÷ 120 N/m (standard installation), depending on the height of the curtain. The mounting plane should be either vertical or horizontal with flatness deviations up to 5 mm along the curtain.

Recommended installation order:

1. Fix the load-bearing element using proper connectors (usually M8 x 30 screws).
2. Attach an initial weight to the fabric.
3. Attach the fabric and the pressing element (screw using M8 x 30 screws).
4. Attach the proper weight (after removing the initial weight).

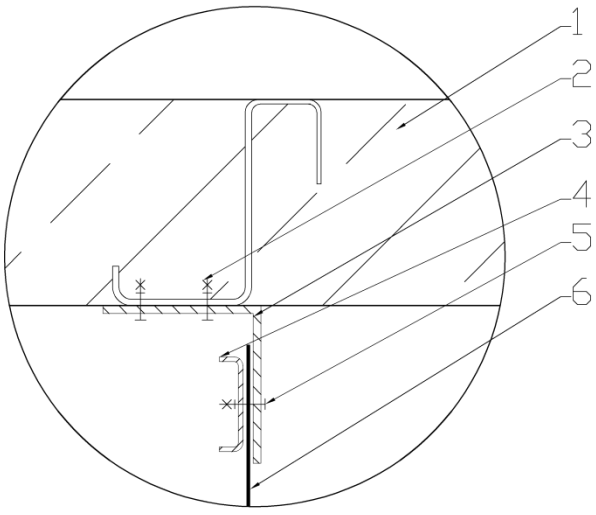
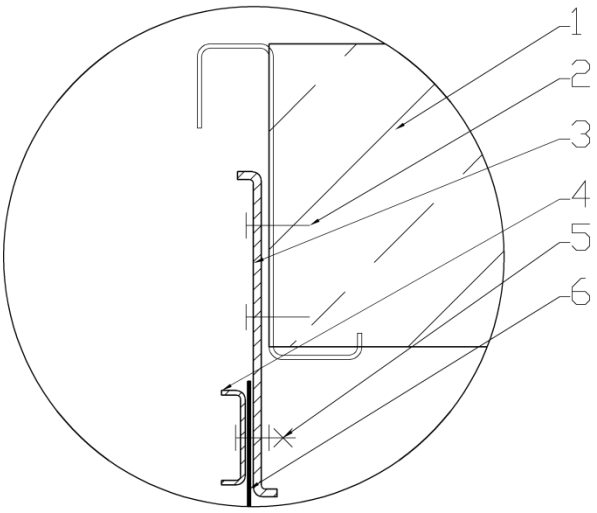


Fig. 1. Typical method of installation of mcr PROSMOKE S CE under a lintel



Description:

1. Fixed element of the building
2. Connectors for fixing to the fixed elements
3. Load-bearing element (depending on the planned installation method: angle bracket, U-bar
4. Pressing element
5. Set of connectors (M8 screw, coarse flat washers 2 pcs., secure nut)
6. Smoke-proof fabric
7. Vice

Fig. 2. Typical method of installation of mcr PROSMOKE S CE curtain on a lintel

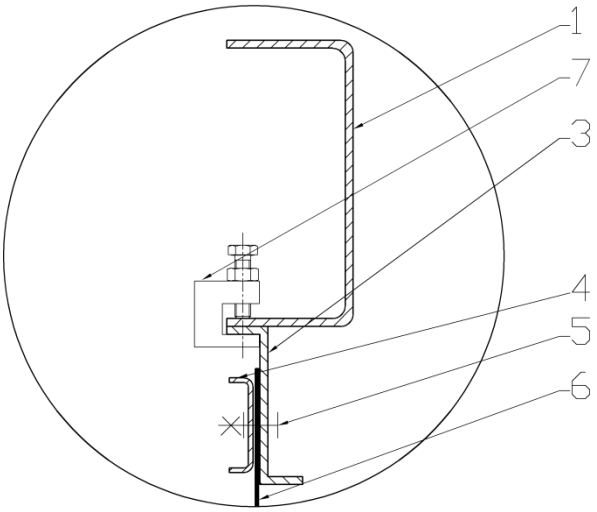


Fig. 3. Typical method of installation of mcr PROSMOKE S CE curtain to a steel sheet element using vices

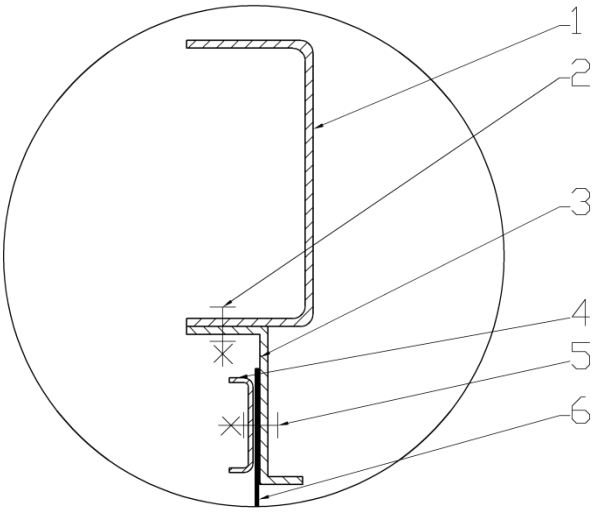


Fig. 4. Typical method of installation of mcr PROSMOKE S CE curtain to a steel sheet element using machine screws

6. GUIDELINES FOR MOUNTING mcr PROSMOKE S CE CURTAINS TO THE BUILDING ELEMENTS

I. Determine the shape and dimensions of the curtains and the fixing elements so that the design dimensions of gaps between the curtain and elements of the building are maintained. If there is no description of gaps in the design, it is recommended that they do not exceed:

a) 20 mm for curtains with height up to 2 m,
b) 40 mm for curtains with height between 2 m and 6 m,
c) 60 mm for curtains with height exceeding 6 m,

so that they meet the recommendations of PN EN 12101-1 standard.

II. The gap between the curtain and the ceiling, if any, should be blinded with a partition made of steel or aluminium sheet, mineral wool or other non-flammable material (class A1 acc. to EN 13501-1).

III. The dimensions and shape of load-bearing fixing elements may vary depending on the material of the base as well as on the dimensions and shape of the base or the connectors used, and they should be finally determined by the installer on the basis of the available data.

IV. The load-bearing elements of the curtain should be fixed to the fixed elements of the building (lintel, ceiling, wall, beam, etc.) using metal connectors:

a) machine screws, min. M6 (or bigger),
b) steel anchors, min. M6, recommended: M8 (or bigger),
c) brass or steel expansion anchors (with min. M6 thread or bigger),
d) on suspended steel bars, min. M8 (or bigger).

V. The distance between the connectors should not exceed 1 m.

VI. When using connectors with specific fire resistance classes, observe the relevant guidelines concerning their use.

VII. Typical connectors used for mounting load-bearing elements of the curtains:

HILTI compliant with AT-0602-102/2006, especially:

- for the ceiling: HKL anchor,
- HLC M6 anchors or bigger, HKH M6 or bigger, HKD,
- HUS 7,5 HSA F/R M6 connectors or bigger.

FISHER:

- FUR10 and FUR14 plugs,
- FAZ, FBN, FZA, FZEA, FH, FSA, TA M, EA, EA-N, FNA anchors, size M6 or bigger,
- FBS 8 concrete screws or bigger,
- anchors for hollow slabs – FHY M8 or bigger.

It is possible to use other connectors. It is recommended to choose connectors with fire resistance corresponding to the curtain used (proper load-bearing capacity in 60 min).

VIII. The anchoring depth should be at least 60 mm in materials, such as concrete, brick, etc. for connectors without tested fire resistance.

IX. Use protections against loosening of threaded connections (e.g. proper screw glue, spring washers or secure nuts).

7. WARRANTY TERMS AND CONDITIONS

1. Mercor Light&Vent grants a 12-month quality guarantee for equipment, starting from the date of purchase, unless the agreement provides otherwise.
2. Each defect under guarantee should be reported to a local representative of Mercor Light&Vent immediately, i.e. within 7 days of its discovery.
3. Applications can be made by phone at +48/ 58 341 42 45, by email to claim@mercor.com.pl or by sending a letter to: Mercor Light&Vent, Grzegorza z Sanoka 2, 80-408 Gdańsk, Poland.
4. If during the term of guarantee any physical defects of the equipment become evident, Mercor Light&Vent shall remove them as soon as possible, subject to paragraph 5.
5. Mercor Light&Vent reserves the right to lengthen the repair time in the event of complicated repairs or those that require non-standard sub-assemblies [elements] or spare parts to be purchased.
6. Liability under the Guarantee covers only defects resulting from causes inherent in the equipment sold.
7. In the event of defects resulting from inappropriate operation of the equipment or due to other reasons stated in par. 6, the Buyer/ Guarantee Holder shall bear the costs of their removal.
8. In accordance with the generally accepted practice, the guarantee does not cover:
   - damages and breakdowns of the equipment due to inappropriate operation, user's interference, lack of maintenance or periodic servicing;
   - equipment damages resulting from causes other than those that Mercor is responsible for, in particular: acts of God such as torrential rainfall, flood, hurricane, flooding, stroke of thunder, overvoltage in the mains, explosion, hail, fall of aircraft, fire, avalanche, landslide and secondary damages due to the above-listed causes. Torrential rain is defined as rain with an efficiency index of at least 4 (or 5 in Chomicz scale or torrential rain grade IV (A_4)). Should it be impossible to determine the index mentioned in the previous sentence, the actual condition and the degree of damage at the place of its origin proving that it is the consequence of torrential rain will be considered. Hurricane is defined as wind blowing at the speed of at least 17,5 m/s (damages are deemed to have been caused by hurricane if the effects of hurricane have been found in the immediate neighborhood);
   - damages due to failure to immediately report the defect discovered;
   - worsened quality of coating due to the natural ageing process (fading, oxidation);
   - defects due to using abrasive or aggressive cleaning products;
   - damages due to aggressive external factors, especially chemical and biological ones.
   - parts liable to natural wear and tear during operation (e.g. seals) unless a manufacturing fault has occurred;
   - damages due to improper transport, unloading and storage of the device;
   - damages due to installation inconsistent with the OMM and the rules of good construction practice;
   - ingress of dust, particles or solids with the effective grain size below 50 µm into the polycarbonate sheet chambers;
   - condensation in the polycarbonate sheet chambers.
9. Guarantee and warranty is void in the following cases:
   - The Buyer/Guarantee Holder makes design modifications on his own without consulting Mercor Light&Vent,

- Maintenance or periodic servicing are not done in due time or are performed by unauthorized persons or a service center not authorized by Mercor Light&Vent, or the equipment is operated in the wrong way,
- Any interference of unauthorized persons – except activities connected with normal operation of the equipment.

10. The Buyer/Guarantee Holder is responsible for proper operation and maintenance of the equipment and for regular (min. twice a year) servicing according to service and maintenance instructions included in OMM.

SERVICING INSPECTIONS:

1. Devices should be subject to periodical servicing inspections every 6 months during the entire period of their operation.
2. The servicing inspections should be performed by companies having adequate authorization of Mercor Light&Vent
3. On issues related to service please contact a local representative of Mercor Light&Vent

Other conditions:

1. As regards matters not regulated by these “Warranty terms and conditions”, the law applicable is Polish law.
2. Any disputes that may arise in connection with the “Warranty terms and conditions” shall be settled through negotiations between the Parties. This provision is not an arbitration clause.
3. If the Parties fail to reach an agreement by negotiation, any disputes arising from or related to the contract shall be settled by the Polish court competent for the seat of the Seller.

8. CERTIFICATE CPR.

SNAS
Reg. No. 041/P-007

NOTIFIED BODY 1396
Osloboditeľov 282, 059 35 Batizovce, Slovakia
Tel.+421 52 285 1611, www.fires.sk

FIRES
The Experts on Fire Safety

Certificate of constancy of performance

1396-CPR-0022

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 BARRIERS (SSB)
mcr PROSMOKE S CE

designed to control the movement of fire effluent within construction works by forming a barrier. Assessment and verification of constancy of performance and conditions of product use are defined in document Initial type testing report of constructional product No. C1396/08/0032/5004/SC (issued by FIRES, s.r.o., Batizovce, NB1396 on 23. 07. 2008) and reports of continuous surveillances of factory production control, carried out during the validity of the certificate. The product is

placed on the market under the name or trade mark of the manufacturer

Mercor Light&Vent sp. z o.o.
ul. Grzegorza z Sanoka 2, 80 – 408 Gdańsk, Poland

and produced in the manufacturing plant

Mercor Light&Vent sp. z o.o.
ul. Kwarcowa 3A, Cieplewo, 83-031 Łęgowo, 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 23. 07. 2008 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.

Representative of Notified Body

NOTIFIKOVANÁ OSOBA 1396 FIRES The Experts on Fire Safety -1- NOTIFIED BODY 1396

In Batizovce, on 30. 06. 2025

Ing. Štefan Rástocký
Head of Product Certification Body

173673

FIRES 136a/C-23/10/2024-E