

FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-011-22-NURE

Horizontal fire-resistant shutter with loft ladder, type EI45 – 46 mm / 18 mm

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FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION

FIRES-JR-011-22-NURE

Name of the product: Horizontal fire-resistant shutter with loft ladder, type EI45 – 46 mm / 18 mm

Sponsor: OMAN Sp. z o.o.
ul. Zamkowa 11
47-400 RACIBÓRZ
Poland

Prepared by: FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

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1. INTRODUCTION

This expert judgement report with classification defines the resistance to fire classification assigned to element Horizontal fire-resistant shutter with loft ladder, type EI45 – 46 mm / 18 mm.

This expert judgement report defines field of application which is outside the field of direct application according test standard or outside the field of extended application according to relevant extended application standard. This expert judgement expresses the opinion of the FIRES and is based on the experience or internal rules of FIRES.

The testing laboratory FIRES, s.r.o. issued Fire resistance expert judgement report with classification No. FIRES-JR-030-17-NURE for the classified product. The Fire resistance expert judgement report with classification was issued on 28. 03. 2017 and its validity ended on 28. 03. 2022.

Standard EN 1634-1: 2014 + A1: 2018 specifies a method for determining the fire resistance of door and shutter assemblies and openable windows designed for installation within openings incorporated in vertical separating elements. This standard does not comment the possibility of using this test method to determine the fire resistance of non-loadbearing horizontally oriented doors/shutters by analogy. As there is no test method to determine the fire resistance of such products, FIRES, s.r.o. chose EN 1634-1: 2014 during fire test [1] and also used paragraph 13 (of the standard) to define the field of application of test results.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The product, Horizontal fire resistant shutter with loft ladder, type EI45 – 46 mm / 18 mm, is defined as a shutter with fire separating function with fixing into the ceiling.

2.2 PRODUCT DESCRIPTION

Dimensions

Overall dimensions of shutter	(1250 x 700) mm (height x width)
Dimensions of shutter leaf	(678 x 1228 x 46) mm (width x height x thickness)
Dimensions of shutter opening	(1214 x 664) mm (height x width)
Weight of shutter	14,6 kg (measured in testing laboratory)

Shutter frame

Frame of product is made of timber slabs, with dimensions (170 x 18) mm (width x thickness) with bulk density 520 kg/m³ (manufacturer: OMAN Sp. Z o. o., Poland).

Dimensions of rebate (10 x 23) mm and milled groove (3,2 x 7) mm for sealing gasket, type S7442 (manufacturer: Inter-Deventer Sp. z o.o.), around perimeter of the shutter frame.

Frame of shutter leaf

Frame of shutter leaf is made of timber slabs, with dimensions (50 x 40) mm (width x thickness) with bulk density 520 kg/m³ (manufacturer: OMAN Sp. Z o. o., Poland). Dimensions of rebate (10 x 28) mm. Milled groove with dimensions (20 x 2) mm for intumescent tape is made around perimeter of the shutter leaf frame.

Core of shutter leaf

Mineral wool board, type Isover TT 700, 40 mm thick, with bulk density 90-132 kg/m³ (manufacturer: Saint-Gobain Construction Products Polska Sp. Z o. o. , Poland).

Casing of shutter leaf

Construction of the shutter leaf including the core is covered from both faces by layer of HDF board, type LHDF 3, 3 mm thick, with bulk density 800 kg/m³ (manufacturer: Kronospan Szczecinek Sp.z o.o., Poland).

Intumescent tape

Intumescent tape (20 x 2) mm (width x thickness), type Promaseal LFC SK (manufacturer: Promat GmbH) is placed in milled groove around perimeter of shutter leaf frame.



Hinges

Lever mechanism with spring, type 46mm/18mm (manufacturer: OMAN Sp. Z o. o., Poland).

Ladder

Shutter ladder, type 07 (manufacturer: OMAN Sp. Z o. o., Poland) placed on shutter leaf surface from top side. Static load is applied on product surface by means of loft ladder of maximal weight 11,0 kg.

Product fixation

Product should be fixed to horizontal supporting construction in horizontal position; in ceiling construction made of aerated concrete, at minimal 150 mm of thickness and with minimal bulk density 613 kg/m³.

Fixation into supporting construction is by means of steel screws (Ø6 x 80) mm, maximum distance 400 mm.

Gap between shutter frame and supporting construction is filled by mineral wool with bulk density 60 kg/m³ and sealed from exposed side by PROMASEAL®-A (manufacturer: Promat GmbH).

More detailed information, about product construction, is shown in drawings which form an integral part of report [1].

3. TEST REPORTS AND EXTENDED APPLICATION REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS AND EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	FIRES, s.r.o., Batizovce, SR	OMAN Sp. z o.o. Racibórz, Poland	FIRES-FR-029-17-AUNE	02.02.2017	EN 1634-1: 2014

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test

3.2 TEST RESULTS

No./ Test method	Parameter	Results	
[1] EN 1634-1: 2014	supporting construction	Horizontal rigid supporting construction made by aerated concrete blocks of thickness 150 mm and with bulk density 613 kg/m ³	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	52 minutes
		gap gauges	52 minutes with no failure
		sustained flaming	52 minutes
	thermal insulation	I ₁	52 minutes
		I ₂	52 minutes
	radiation		- *
self-closing		-	
specimen orientation		opening of shutter towards test furnace (fire from bottom side)	

[1] The fire test was terminated in the 72nd minute. The test continued after the specimen integrity failure in the 53rd minute at request of the sponsor

* Regarding to low temperatures on unexposed specimens' surface below 300 °C the performance criteria of radiation is to be complied as satisfied.



4. CHANGES OF THE PRODUCT OR END USE CONDITIONS OUTSIDE OF THE FIELD OF DIRECT OR EXTENDED APPLICATION

Following changes of the product or end use conditions were permitted:

1. EN 1634-1: 2014 used as a test method during test [1]. Field of application of test results determined acc. to EN 1634-1: 2014 + A1: 2018, paragraph 13.

5. ARGUMENTS IN FAVOR OF THE EXTENSION

1. As there is no test method to determine the fire resistance of non-loadbearing horizontally oriented shutters, FIRES, s.r.o. chose EN 1634-1: 2014, a standard which deals with fire resistance of door and shutter assemblies and openable windows designed for installation within openings incorporated in vertical separating elements. Also, field of application of test results defined in this fire resistance expert judgement report is elaborated in compliance with EN 1634-1: 2014 + A1: 2018, paragraph 13. On the base of long-term experience, FIRES, s.r.o. does not suppose that product changes (described in paragraph 6.2 of the document) allowed by EN 1634-1: 2014 + A1: 2018, paragraph 13 could lead to the decrease in fire resistance of product.

The standard EN 1634-1: 2014 was superseded by EN 1364-1:2014 + A1: 2018 which has no affect to used test method and the tests are deemed to fulfil requirements of EN 1634-1: 2014 + A1: 2018.

6. CLASSIFICATION AND FIELD OF APPLICATION

6.1 CLASSIFICATION

The element, Horizontal fire-resistant shutter with loft ladder, type EI45 – 46 mm / 18 mm, is classified according to the following combinations of performance parameters and classes as appropriate.

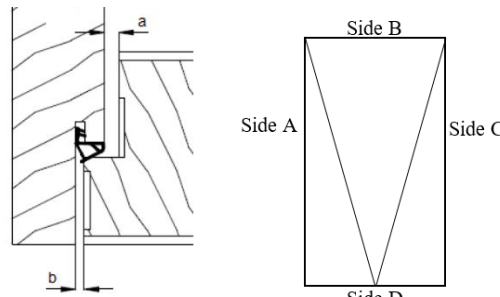
**Fire resistance classification:
E 45 / EI₁ 45 / EI₂ 45 / EW 45**

Note: Classification is valid for product where a retractable ladder is on unexposed side.



6.2 FIELD OF APPLICATION

This classification is valid for the following end use applications:

Materials and construction	<ul style="list-style-type: none"> - Thickness and/or density of shutter leaf shall not be reduced but should be increased provided the total increase in weight is not greater than 25%. - Stronger springs (of the same type as tested ones) are fitted to the product in order to ensure that force applied by springs responsible for closing the product (and also responsible for its remaining in closing position) is equal or higher than the force during the test [1]. - For timber-based board products (e.g. particle board, blockboard etc.), the composition (e.g. type of resin) shall not change from that tested; the density shall not be reduced but may be increased. - The cross-sectional dimensions and/or the density of the timber frames (including rebates) shall not be reduced but may be increased. - The number, size, location and orientation of any joints in the timber framing shall not be changed. 															
Decorative finishes	<ul style="list-style-type: none"> - It is acceptable apply paint finish. - Decorative laminates or timber veneers up to 1,5 mm of thickness are acceptable on faces but not the edges. 															
Fixings	<ul style="list-style-type: none"> - The number of fixings used to attach the product to supporting constructions may be increased but shall not be decreased and the distance between fixings may be reduced but shall not be increased. - Fixation into supporting construction shall be by means of steel screws (Ø6 x 80) mm in maximal distance of 400 mm. 															
Permissible size variations	<ul style="list-style-type: none"> - It is permitted to increase product dimension to maximally up to: <ul style="list-style-type: none"> o 15% length of shutter leaf (maximal length is 1412 mm); o 15% width of shutter leaf (maximal width is 780 mm); o 20% area of shutter leaf (maximal area is 1,0 m²). 															
Supporting constructions	<ul style="list-style-type: none"> - Product should be mounted in horizontal position to rigid horizontal supporting construction with minimal 150 mm of thickness and with minimal bulk density 613 kg/m³. - Gap between shutter frame and supporting construction has to be filled by mineral wool with minimal bulk density 60 kg/m³ and sealed from exposed side by PROMASEAL®-A (manufacturer: Promat GmbH). 															
Gaps	<ul style="list-style-type: none"> - The maximum size of primary gaps “a” and “b” for product is restricted to the following sizes: <table border="1" data-bbox="392 1473 1497 1644" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 30%;">“a” [mm]</th> <th style="width: 30%;">“b” [mm]</th> </tr> </thead> <tbody> <tr> <td>Gap on side A</td> <td>7,3</td> <td>5,2</td> </tr> <tr> <td>Gap on side B</td> <td>7,3</td> <td>4,6</td> </tr> <tr> <td>Gap on side C</td> <td>4,8</td> <td>4,7</td> </tr> <tr> <td>Gap on side D</td> <td>6,2</td> <td>4,7</td> </tr> </tbody> </table> <div style="margin-top: 10px;">  </div>		“a” [mm]	“b” [mm]	Gap on side A	7,3	5,2	Gap on side B	7,3	4,6	Gap on side C	4,8	4,7	Gap on side D	6,2	4,7
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Gap on side D	6,2	4,7														



7. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The classification is valid until 23. 02. 2027 provided that the product, field of application and standards and regulations are not changed.

Approved by:

Ing. Štefan Rástocký
Head of the testing laboratory

Prepared by:

Ing. Martin Huf
Technician of the testing laboratory

