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Classification of fire resistance

In accordance with PN-EN 13501-2:2016-07

(EN 13501-2:2016)

No. 946/SIA BRODOOR/2020-1/K/1

Test sponsor:

SIA "Brodoor"


Pils rajons 44, Jekabpils, Latvija, LV-5202



Date of issue: 09.04.2021.....

Specimen no.: 1.....

Signed by /
Podpisano przez:

 Maciej Jaśpiński

Date / Data:
2021-04-09 13:51



CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH PN-EN 13501-2:2016-07 (EN 13501-2:2016)

Sponsor: SIA "Brodoor"
Pils rajons 44, Jekabpils, Latvija, LV-5202

Prepared by: Laboratoria Badawcze i Wzorcujące
ul. Bukowiecka 92, 03-893 Warszawa

Product names: Brodoor AF01

Classification report No.: 946/SIA BRODOOR/2020-1/K/1

Issue number: 1

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1. Introduction

This classification report defines the resistance to fire classification assigned to element: Brodoor AF01, in accordance with the procedures given in PN-EN 13501-2:2016-07 (EN 13501-2:2016).

2. Details of classified product

2.1 General

The element, Brodoor AF01 is defined as a fire doors.

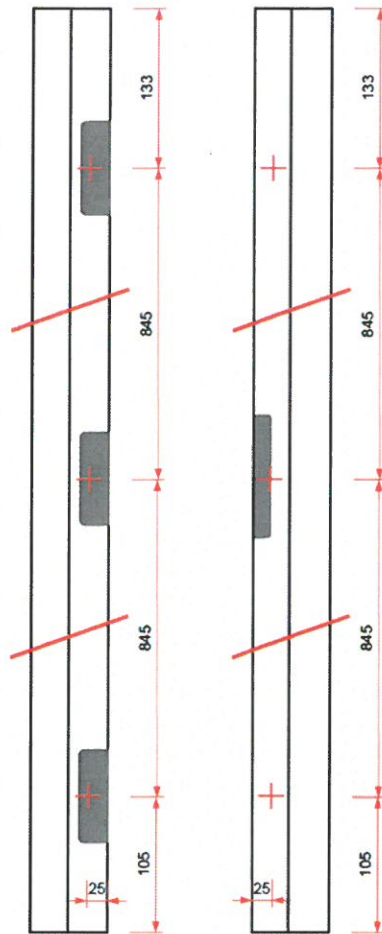
2.2 Description

The element, Brodoor AF01 is briefly described below. Full description of the element is located in the test report(s) and/or extended application report(s) in support of classification listed in section 3.1.

2.2.1 Mounting structure

Type	Minimal thickness [mm]	Minimal density [kg/m ³]	Mounting	Finish
Standard rigid mounting structure	115	600	3 screws on the left and right side according to client's scheme below	gap between doorframe and supporting construction filled with Fire Rated Gunfoam B1 Penosil Premium

Fig. 1. Method of mounting



2.2.2 Door frame structure

Photograph: Door frame
main view

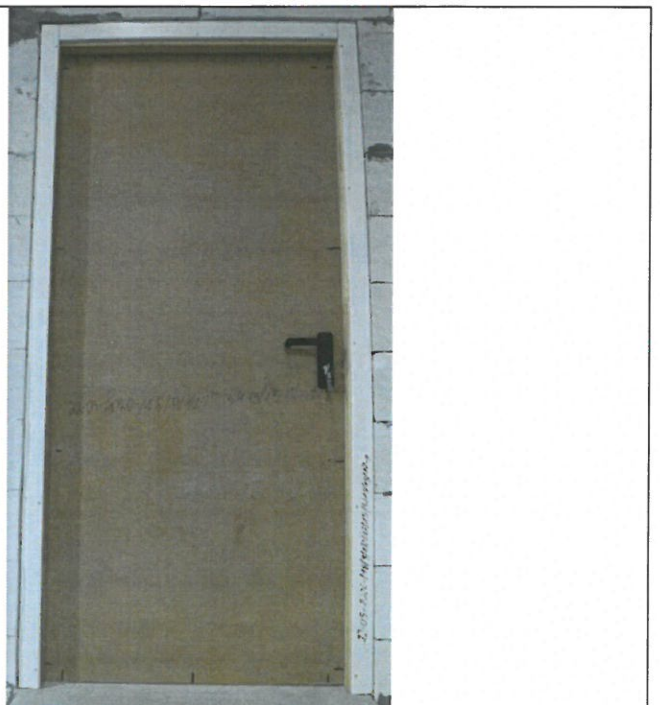


Figure: Door frame main view

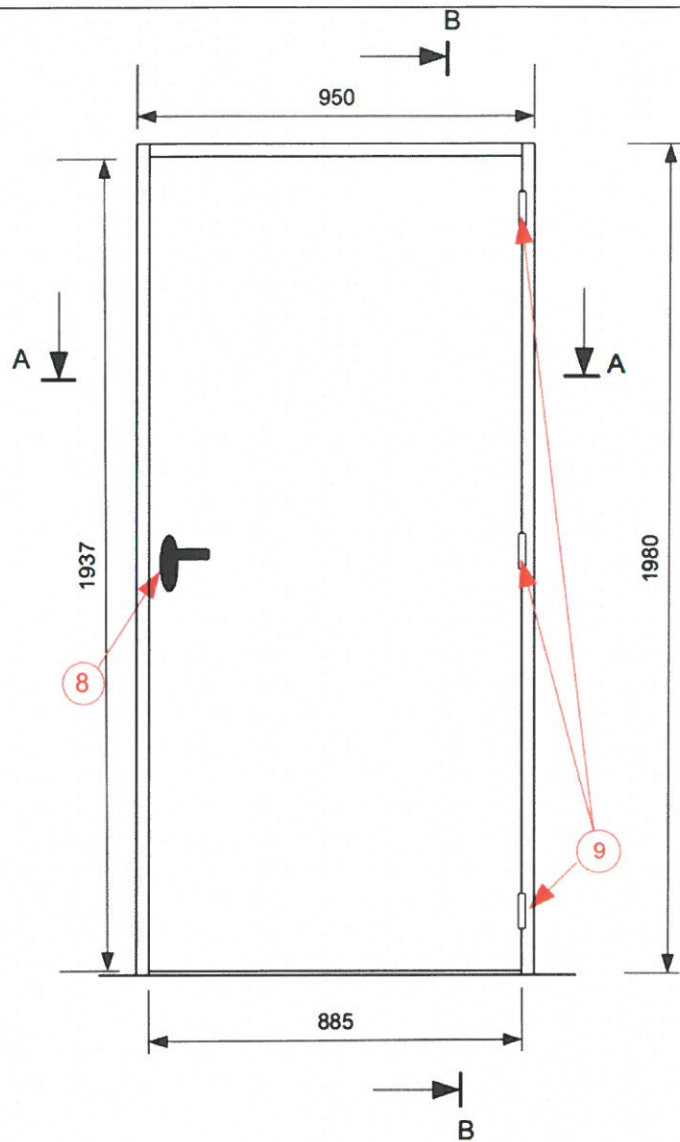
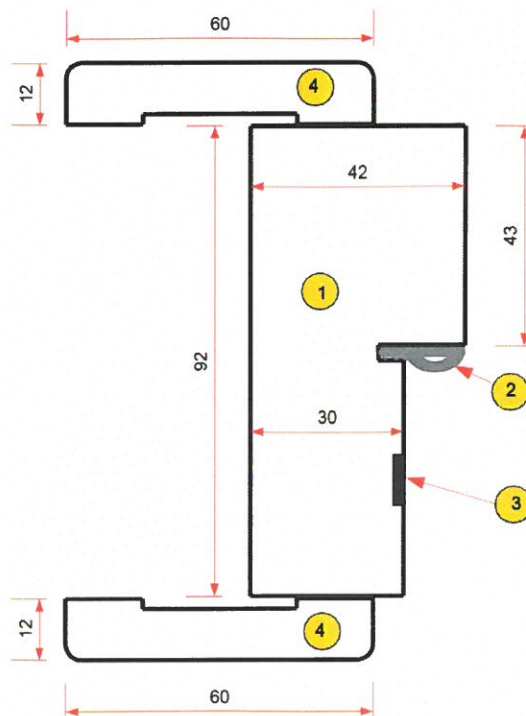


Figure: Door frame cross-section „I”



Photograph: Door frame cross-section „I”

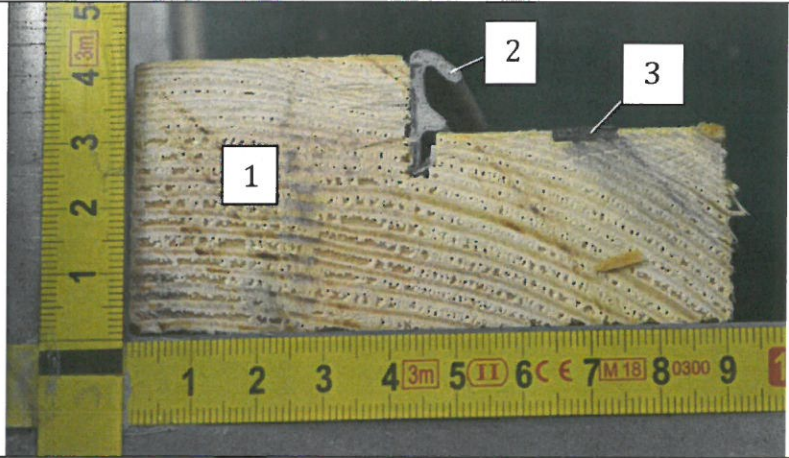
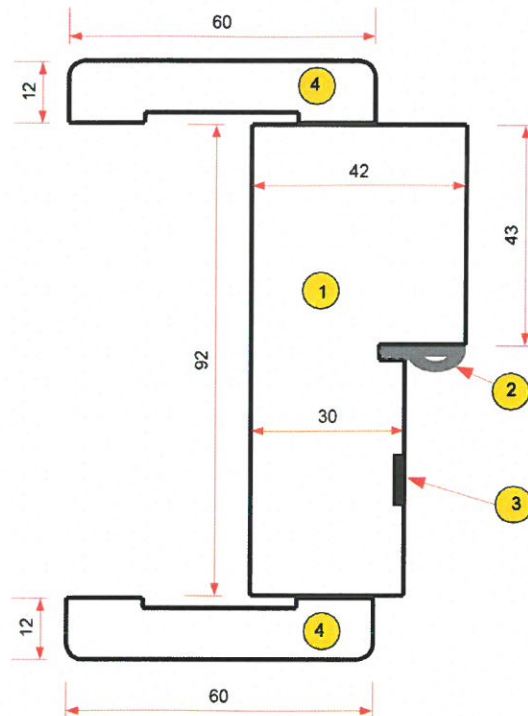
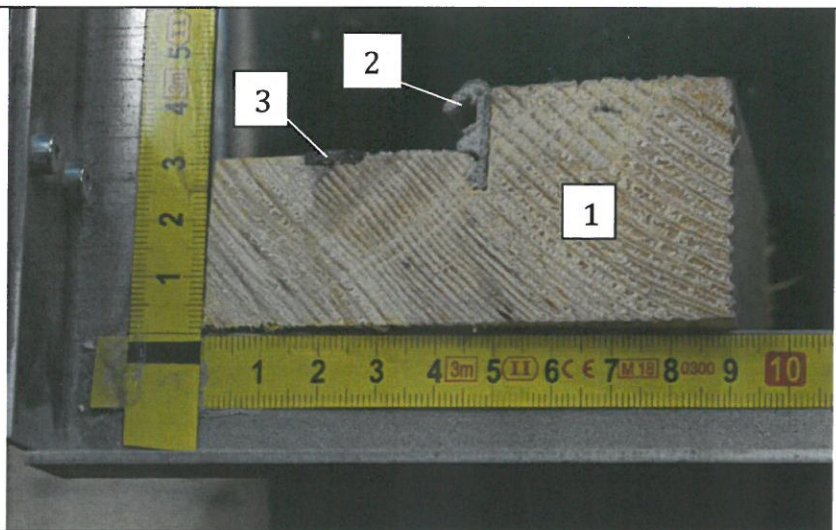






Figure: Door frame cross-section „II”

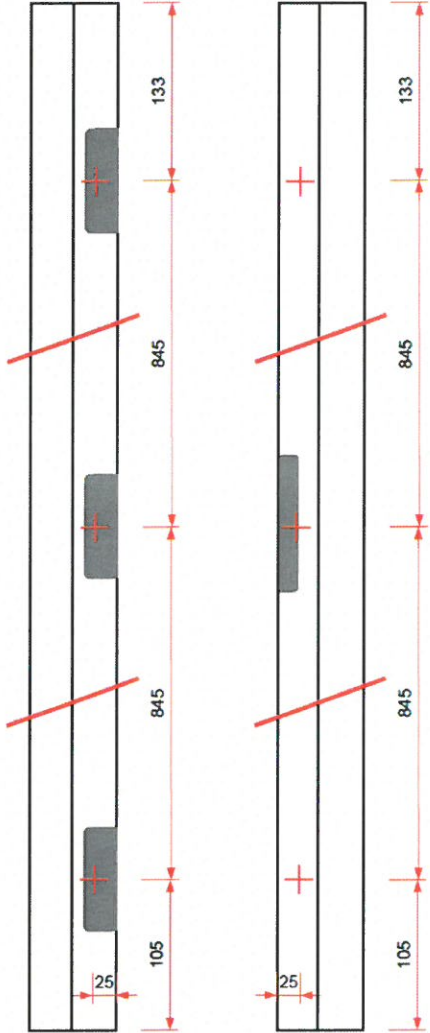


Photograph: Door frame cross-section „II”

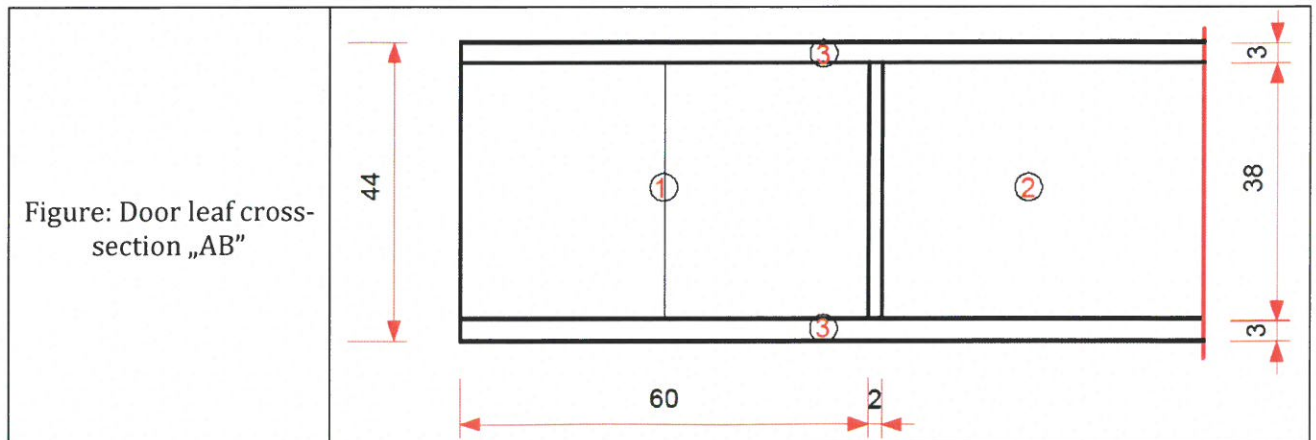


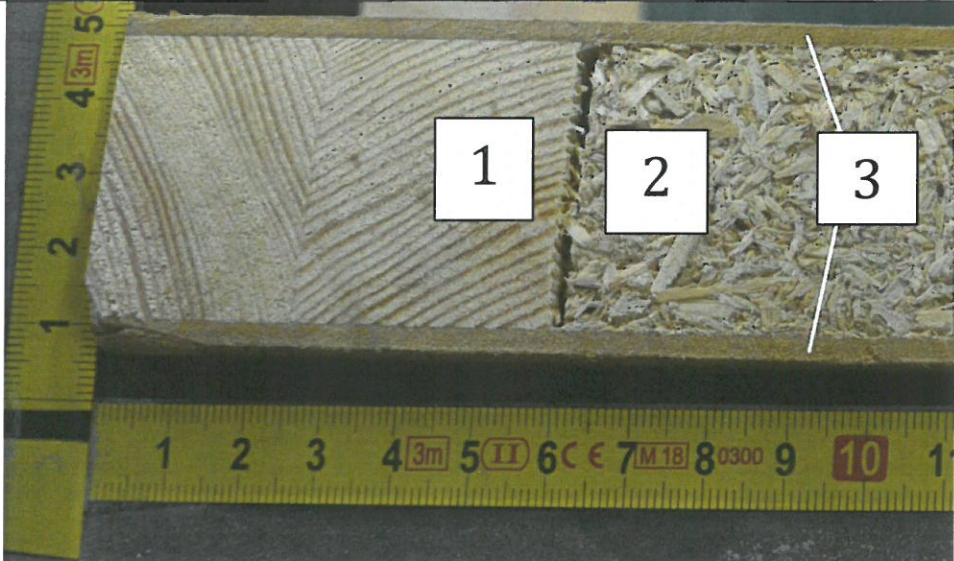
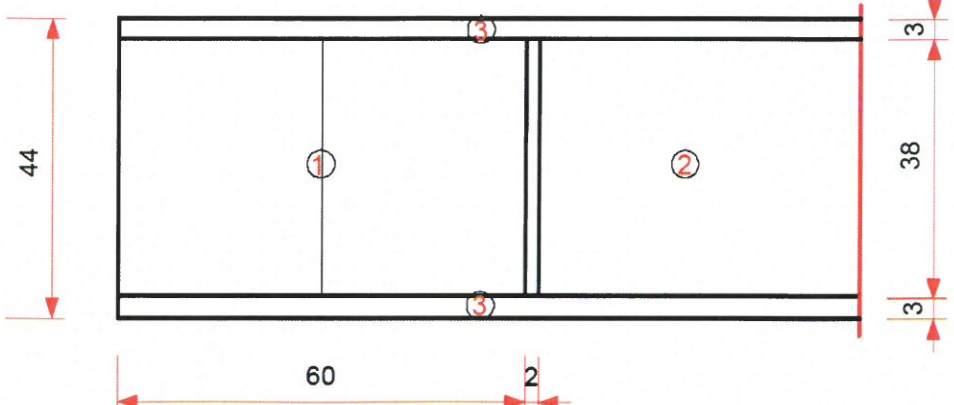
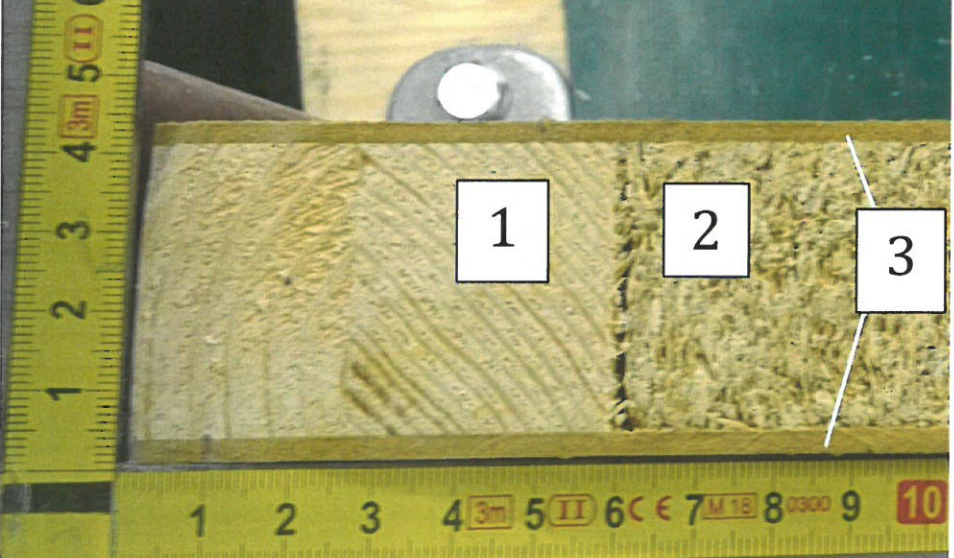
<p>Figure: Door frame cross-section „IV”</p>	
<p>Photograph: Door frame cross-section „IV” (through the hinge)</p>	
<p>Door frame section description</p>	<ol style="list-style-type: none"> 1. Door frame 42 x 92 mm, made from pine wood, density 485 kg/m³, manufacturer Brodoor 2. Draught seal Schlegel QL 3096 8x18.5 mm 3. Intumescent seal Marvon - Tecnoflame rubber profile 10x2 mm. 4. Cover made from MDF, density 700 kg/m³, supplier Attels R, painted with white paint, usage 0.3 l/m², manufacturer Teknos Group, OU
<p>Type of layer connection</p>	<p>Finger-jointed pine wood glued with PVA D3 glue, manufacturer UAB DANA LIM</p>

<p>Photograph: Corner connection</p>	
<p>Description of corner connection</p>	<p>Corners are connected with 2 screws L=79,2 mm \varnothing 4,4 mm</p>
<p>Cuts out in door frame</p>	<p>3 cuts for each hinge, 1 cut for lock's catch plate</p>
<p>Photograph: cuts in intumescent seals for hinges</p>	
<p>Photograph: cuts in intumescent seals for lock's catch plate</p>	
<p>Intumescent seals of door frame - description</p>	<p>Marvon -Tecnoflame rubber profile 10 x 2 mm, quantity 1 pcs, position - 20 mm from the doorframe edge.</p>
<p>Cuts in door frame intumescent seals</p>	<p>Hinges: length 112 mm, seal fully removed Lock's catch plate: length 170 mm, seal fully removed</p>
<p>Photograph: Door frame draught seal</p>	

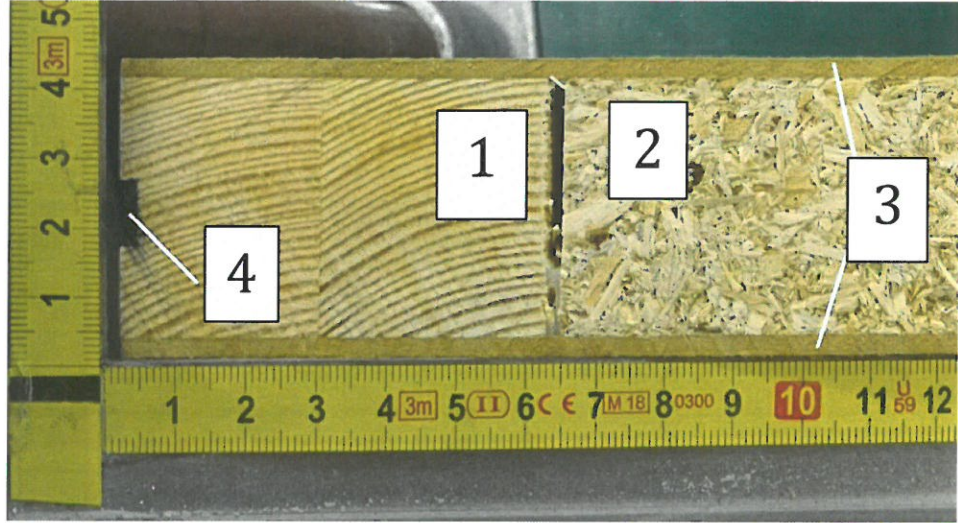
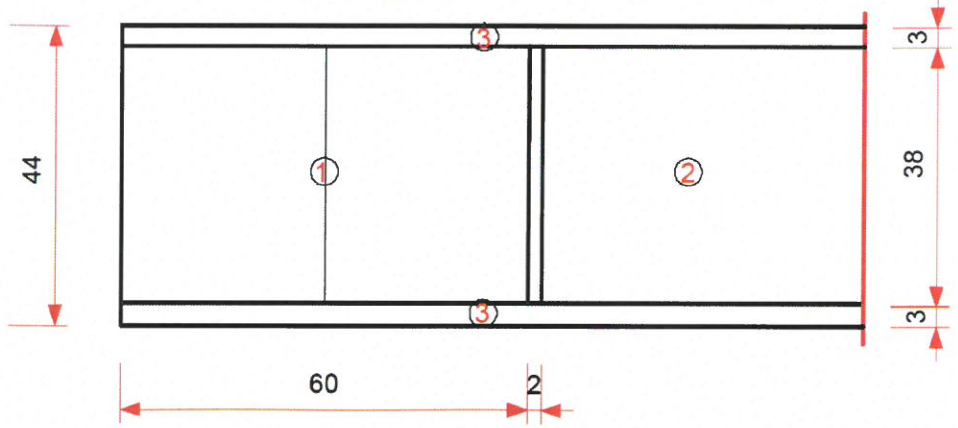
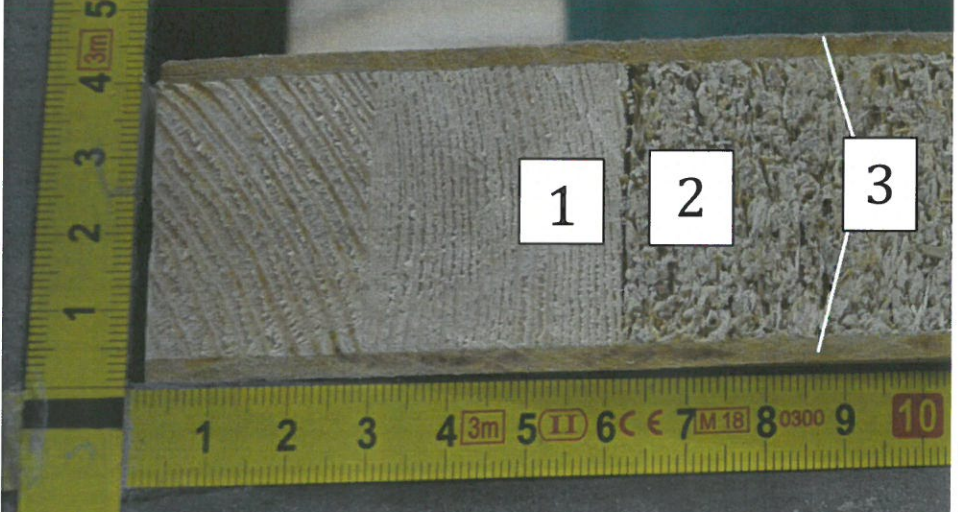
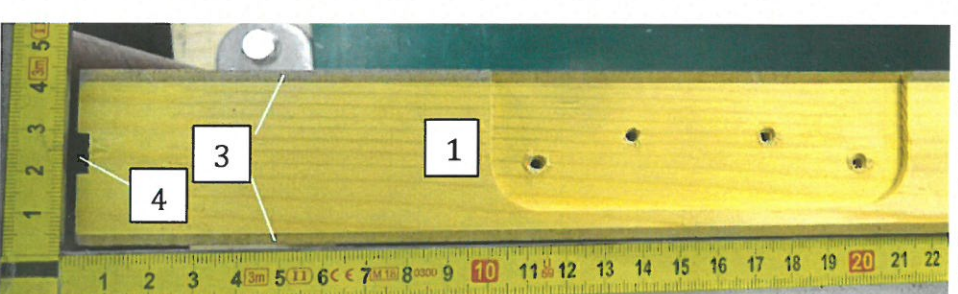
Description of door frame draught seal	Schlegel QL 3096 8x18.5 mm
Draught seal of the door - reaction to fire	Unknown
Door frame assembly with supporting construction	<p>3 screws on the left and right side according to client`s scheme, gap between doorframe and supporting construction filled with Fire Rated Gunfoam B1 Penosil Premium</p> 

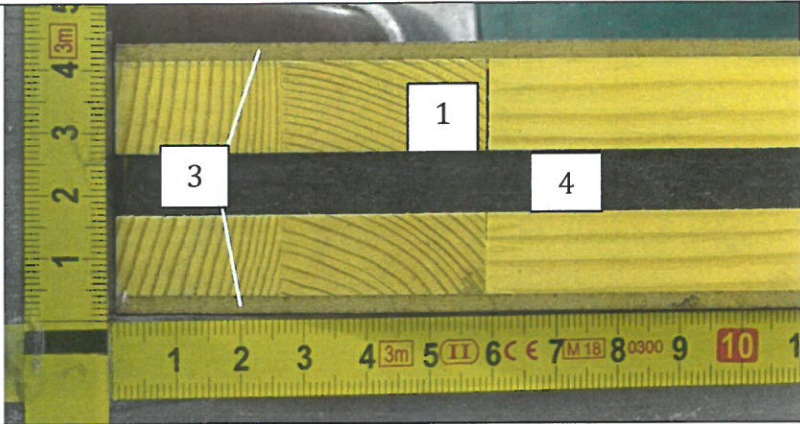
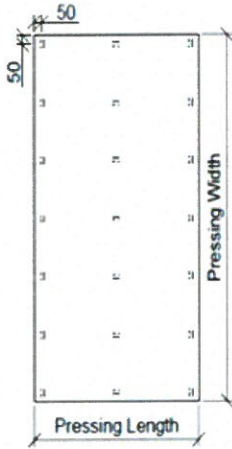

2.2.3 Door leaf structure

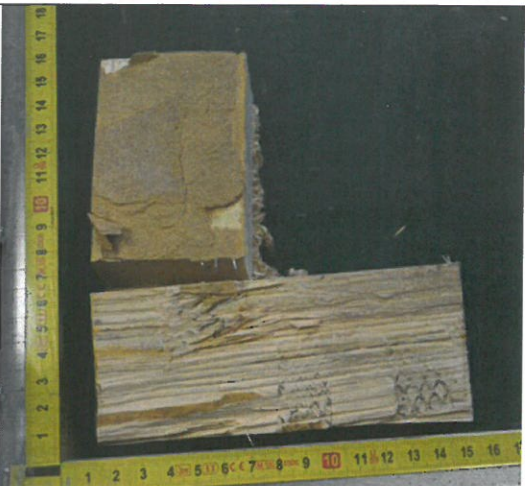


<p>Photograph: Door leaf cross-section „AB”</p>	 <p>A photograph showing a cross-section of a door leaf. On the left is a solid wood layer with a visible grain, labeled '1'. This is followed by a thin vertical line representing a joint, labeled '2'. To the right is a particleboard core, labeled '3'. A yellow measuring tape is visible at the bottom and left, showing measurements in centimeters.</p>
<p>Figure: Door leaf cross-section „BC”</p>	 <p>A technical drawing of the door leaf cross-section. The total height is 44 units. The width of the main body is 60 units. The thickness of the top and bottom layers is 3 units each. The distance between the inner vertical lines is 38 units. The thickness of the central joint is 2 units. Circled numbers 1, 2, and 3 correspond to the layers in the photograph above.</p>
<p>Photograph: Door leaf cross-section „BC”</p>	 <p>A photograph showing another cross-section of the door leaf. It features a wood layer on the left (labeled '1'), a joint (labeled '2'), and a particleboard core (labeled '3'). A yellow measuring tape is visible at the bottom and left, showing measurements in centimeters.</p>

<p>Photograph: Door leaf view „6C”</p>	
<p>Photograph: Door leaf view „6A”</p>	
<p>Figure: Door leaf cross-section „DE”</p>	

<p>Photograph: Door leaf section „DE”</p>	
<p>Figure: Door leaf cross-section „EF”</p>	
<p>Photograph: Door leaf cross-section „EF”</p>	
<p>Photograph: Door leaf view „7F”</p>	

<p>Photograph: Door leaf view „7D”</p>	
<p>Door leaf elements description</p>	<p>1. Door leaf frame with external cross section dimensions: top rail – 38 x 60 mm, bottom rail – 38 x 60 mm, lock stile – 38 x 60 mm, hinge stile – 38 x 60 mm, made from pine wood, density 485 kg/m³, manufacturer Brodoor. 2. Three beaverboard Sauerland, with thickness 13 mm each VL, density 515 kg/m³. 3. Fireproof MDF thickness 6 mm, density 790-830 kg/m³, supplier Attels R, SIA. 4. Intumescent seal Marvon - Tecnoflame rubber profile 10 x 2 mm.</p>
<p>Type of door leaf elements connection</p>	<p>Glue and staples connections Scheme of staples connections:</p> 
<p>Glue usage</p>	<p>PVA D3 glue used evenly on surfaces of core materials, usage 130g/m² PVA D3 glue used evenly on surfaces of door frame, usage 130g/m²</p>
<p>Type of bonding connection</p>	<p>evenly</p>
<p>Door leaf width [mm]</p>	<p>44</p>
<p>Photograph: Door leaf section „4”</p>	

<p>Photograph: elements in leaf perimiter framing</p>	
<p>Leaf perimiter framing connection</p>	<p>By 3 staples</p>

2.2.4 Fittings

<p>Hinges</p>	<p>Type: NTR 110x30 T ZN, manufacturer: ABLOY, supplier: Fiskostar OU</p> <ul style="list-style-type: none"> • 3 pcs per door leaf • Distance from top of upper hinge to top of door leaf: 98 • Distance from bottom of lower hinge to bottom of door leaf: 96 • Distance from top of lower hinge to the middle of intermediate hinge: 758
<p>Lock</p>	<p>Type: BMH 1000, manufacturer: Beyer Muller GmbH</p> <ul style="list-style-type: none"> • Operated from both sides by a handle • 1 pcs per door leaf • Distance between latch bottom edge and door leaf bottom edge: 1002
<p>Lock insert</p>	<p>Type Cilindra 35x35 – nikelis, manufacturer: Razots ES Izplatitajs SIA "Eurolocks"</p>
<p>Door handle</p>	<p>Type: Nylon-FS-Druckergarnitur, manufacturer: Erich Dieckmann GmbH</p>
<p>Self-closing devise</p>	<p>Type: Unik3600 AS36459S.PL, manufacturer: TELESCO UCEM Sistemas de Seguridad, S.A.</p>

A detailed description of the door with the trade name: AF01 is presented in the test reports described in point 3 and in the supplementary information provided by the Manufacturer, attached to these reports.

3. Test reports/extended application reports and test results in suport of the classification

3.1 Test reports/extended application reports

Name of laboratory	Test sponsor	Report ref. no	Test standard and date/field of extended application standards and date of test
<p>CERTBUD Sp. z o. o. Testing and Calibration Laboratories ul. Bukowiecka 92, 03-893 Warszawa</p>	<p>SIA "Brodoor" Pils rajons 44, Jekabpils, Latvija, LV-5202</p>	<p>946/SIA-BRODOOR/ 2020-1/S5A/1</p>	<p>PN-EN 1634-1+A1:2018-03 (EN 1634-1:2014+A1:2018). 23.06.2020</p>

3.2 Tested samples

Report ref. no	Sampling procedure	Conditioning	Number of samples taken
946/SIA-BRODOOR/2020-1/S5A/1	The selection and verification method described in the PN-EN 1634-1+A1:2018-03 (EN 1634-1:2014+A1:2018) standard, point 6.6 in variant b) was used.	The mounting structure was prepared at least 7 days before the installation of the test specimen and kept at a temperature of 10°C to 30°C and relative humidity of 25% to 75% for pre-test conditioning. The test specimen was fitted into the mounting structure 24 hours prior to testing and kept for 24 hours at a temperature of 10°C to 30°C and relative humidity of 25% to 75% for pre-test conditioning until the specimen achieved thermal and moisture content equilibrium.	2 (one for test, one for verification)

3.3 Results

Test method, number and date	Parameter	Results
946/SIA-BRODOOR/2020/S5B/1-2	Supporting construction	The test specimen was mounted in a standard supporting structure made from autoclaved cellular concrete of density 600 kg/m ³ and 115 mm thickness
	Integrity	E 30
	Thermal insulation	EI ₁ 30 EI ₂ 30
	Radiation	EW 30
	Self-closing	25 cycles
	Overrun	For E 7 minutes 20 seconds (category "B") For EI ₁ 4 minutes 49 seconds (category "A") For EI ₂ 7 minutes 20 seconds (category "B")
	effective depth of rebate	8 % (low deflections)

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7 of PN-EN 13501-2:2016-07 (EN 13501-2:2016).

4.2 Classification

The element, Brodoor AF01 is classified according to the example of the following combinations of performance parameters and classes as appropriate.

R	E	I	W	t	t	-	M	S	C	IncSlow	sn	ef	r	G	K
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Fire resistance classification:

EI₁ 30/EI₂ 30/EW 30/E 30

4.3 Field of application

This classification is valid for the following end use applications according to PN-EN 1634-1+A1:2018-03 (EN 1634-1:2014+A1:2018).

Table 1: Changes specific to direct application of test results.

Parameter	Factor	Standard section (PN-EN 1364-1)
Changes in door leaf	Thickness/density of the door panel	13.2.2.1
	Density of core material boards	13.2.2.1
	Decorative finishes - paint	13.2.3.1
	Decorative laminates	13.2.3.2
Changes in door frame	Density of timber frame	13.2.2.1
	Cross-section dimensions of frame (including rebates)	13.2.2.1
	Decorative finishes - paint	13.2.3.1
Building hardware	Positioning of movement restrictors	13.3.3.2.2
	Number of hinges	13.2.5
Gaps	Change	13.3.3.2.5
Fixing	Number of fixings	13.2.4
	Distance between fixings	13.2.4
Size	Change	13.3

Table 2. Changes specific to direct application

Parameter	Factor	Description of change
Changes in door leaf	Thickness/density of the door panel	Increasing of door panel thickness and/or density is permitted provided that the total increase in weight is not greater than 25% (maximal weight: 54.5 kg)
	Density of core material boards	Increasing core material boards density is permitted provided that the total increase in weight is not greater than 25% (maximal weight: 54.5 kg)
	Decorative finishes - paint	Adding paint to unfinished surfaces of tested specimen door leaf is permitted
	Decorative laminates	Adding decorative laminates and timber veneers up to 1,5 mm thickness to door faces are permitted
Changes in door frame	Density of timber frame	Increasing of the density of the timber frames (including rebates) is permitted
	Cross-section dimensions of frame (including rebates)	Increasing cross-sectional dimensions is permitted
	Decorative finishes - paint	Change of paint used for door frame covers is permitted. Adding paint to unfinished surfaces of tested specimen frame is permitted

Building hardware	Positioning of movement restrictors	Relative positioning of movement restrictors shall remain the same as tested. For smaller doorset size relative positioning of movement restrictors shall remain the same as tested or any change to the distances between them will be limited to the same percentage reduction as the decrease of the test specimen size
	Number of hinges	The number of hinges may be increased
Gaps	Change	Maximal value of gap on hinge side: 5.0 mm Maximal value of gap on lock side: 4.0 mm Maximal value of gap on top rail side: 3.5 mm Maximal value of gap on threshold side: 5.0 mm
Fixing	Number of fixings	Number of fixings per unit length used to attach doorsets to supporting constructions may be same or higher than tested
	Distance between fixings	Distance between fixings may be reduced
Size	Change	Unlimited reductions from the tested specimen are permitted For E and EI ₂ doorsets only size reduction and increase are permitted. Maximal external dimensions of door leaf are: Maximal width: 1016 mm Maximal height: 2242 mm Maximal area: 2.06 m ²

5 Limitations

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

6 Term of validity

09.04.2024

SIGNED

MACIEJ JAŚPIŃSKI
KIEROWNIK
Laboratorium Badawczych i Wzorniczych
CERTIBUD Sp. z o.o.

The above signature is a scan. This document was signed using the electronic signature found on the first page.

APPROVED

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