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Classification of fire restistance

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

(EN 13501-2:2016)

No. 946/SIA BRODOOR/2020-2/K/1

Test sponsor:
SIA "Brodoor"

Pils rajons 44, Jekabpils, Latvija, LV-5202

LABORATORIA BADAWCZE I WZORCUJĄCE CERTBUD

Date of issue: 09.04.2021

Specimen no.: 1

Signed by /
Podpisano przez:
Maciej Jaśpiński

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

CERTBUD

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 AF02
Classification report No.:	946/SIA BRODOOR/2020-2/K/1
Issue number:	1
Date of issue:	09.04.2021

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1. Introduction

This classification report defines the resistance to fire classification assigned to element: Brodoor AF02 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 AF02 is defined as a fire doors.

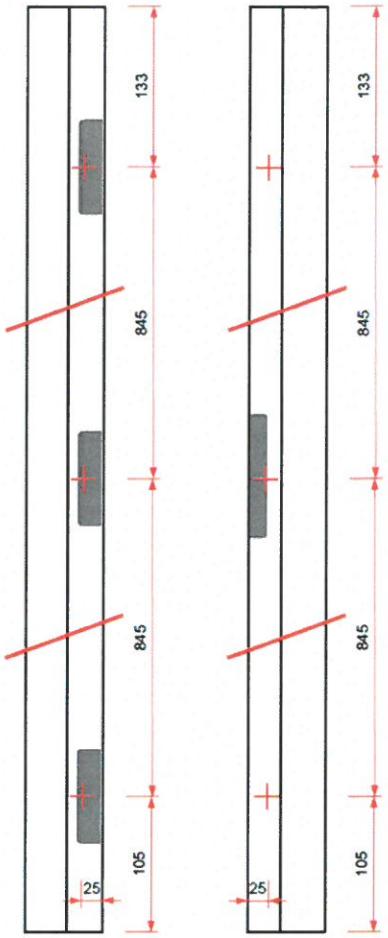
2.2 Description

The element, Brodoor AF02 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/m³]	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

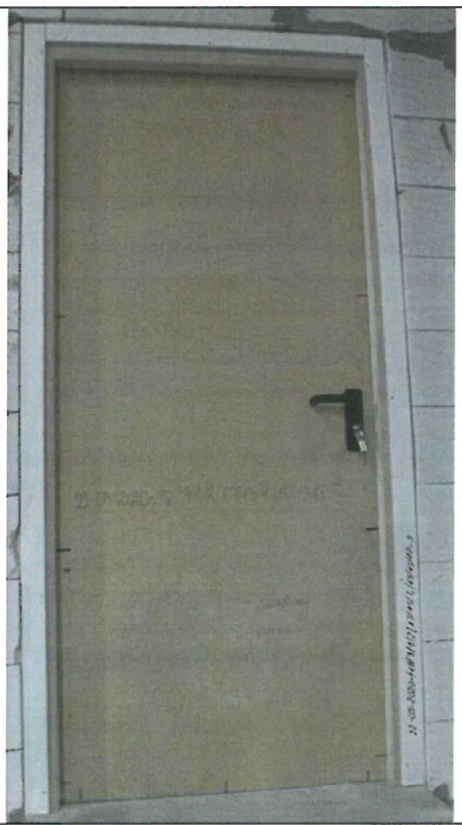
Photograph: Door frame main view	

Figure: Door frame main view

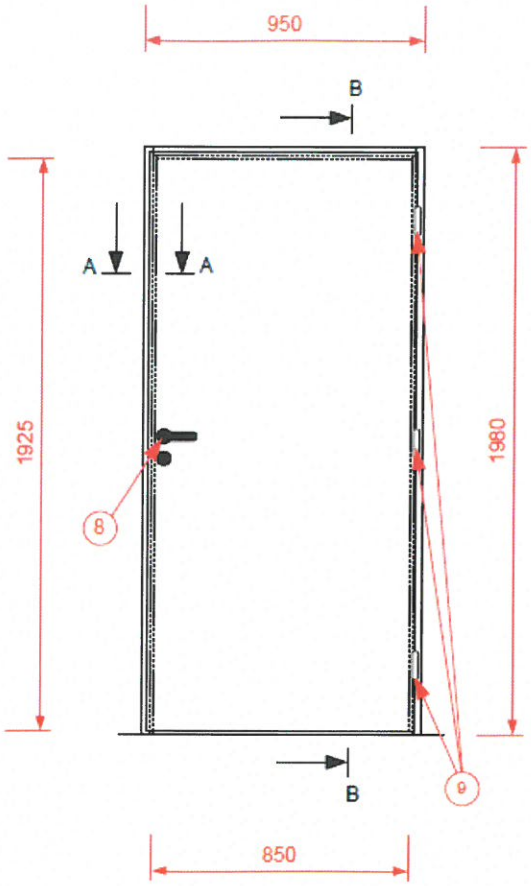
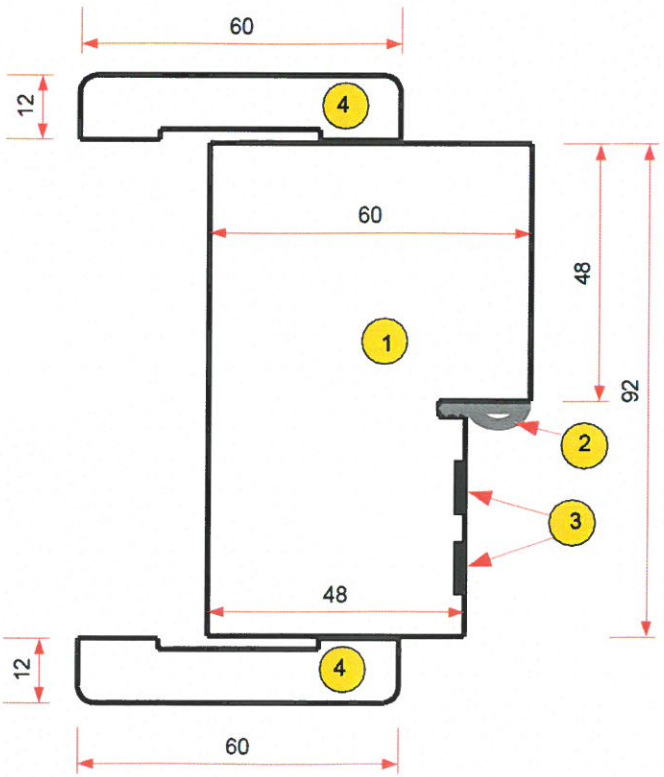


Figure: Door frame cross-section „I"



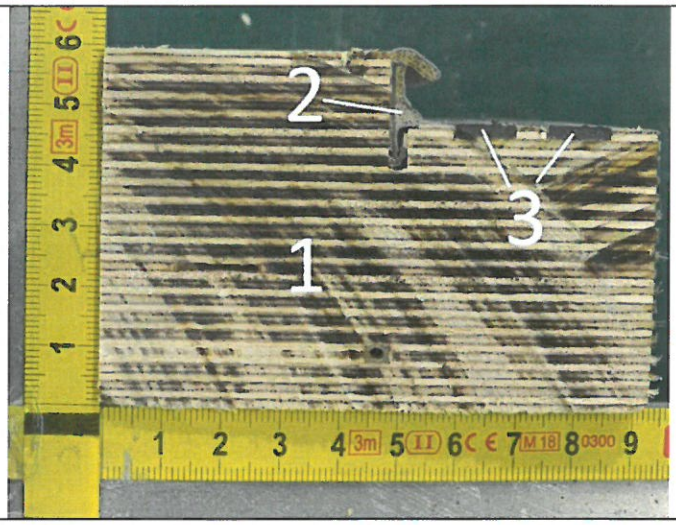
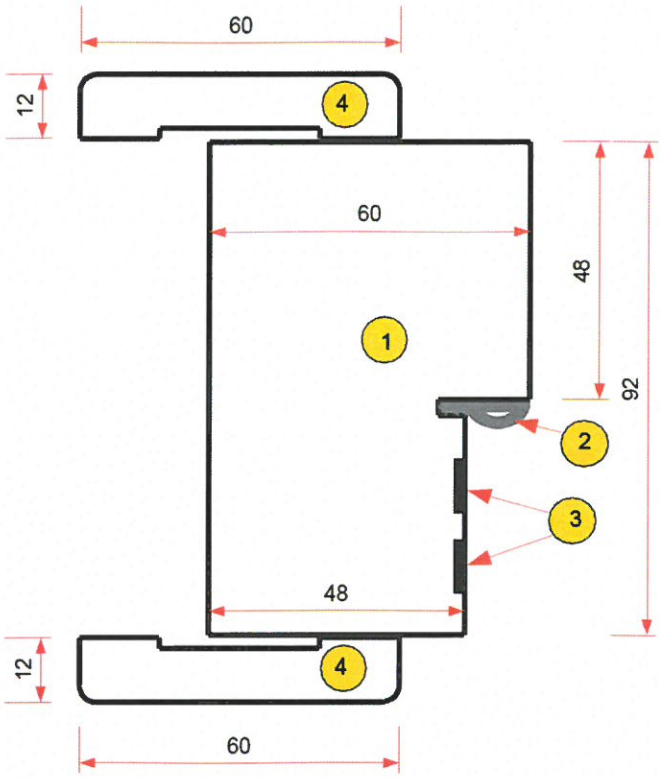
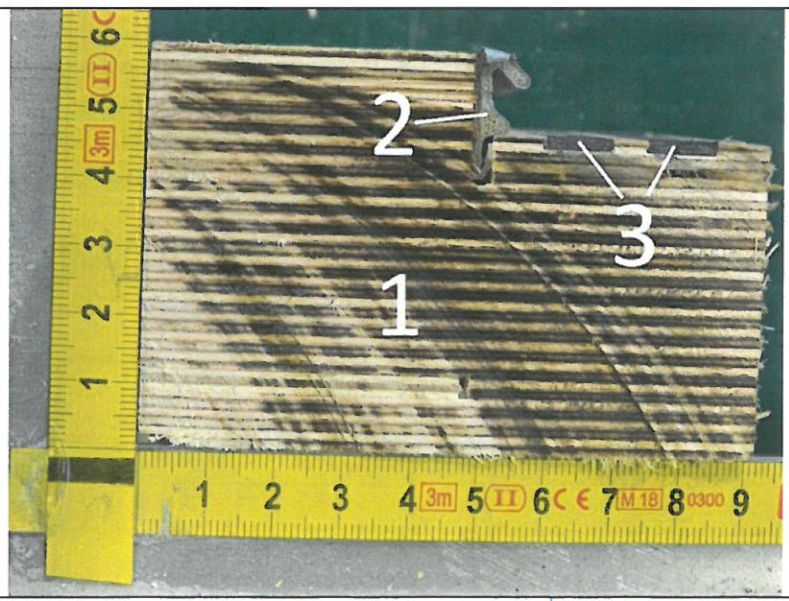
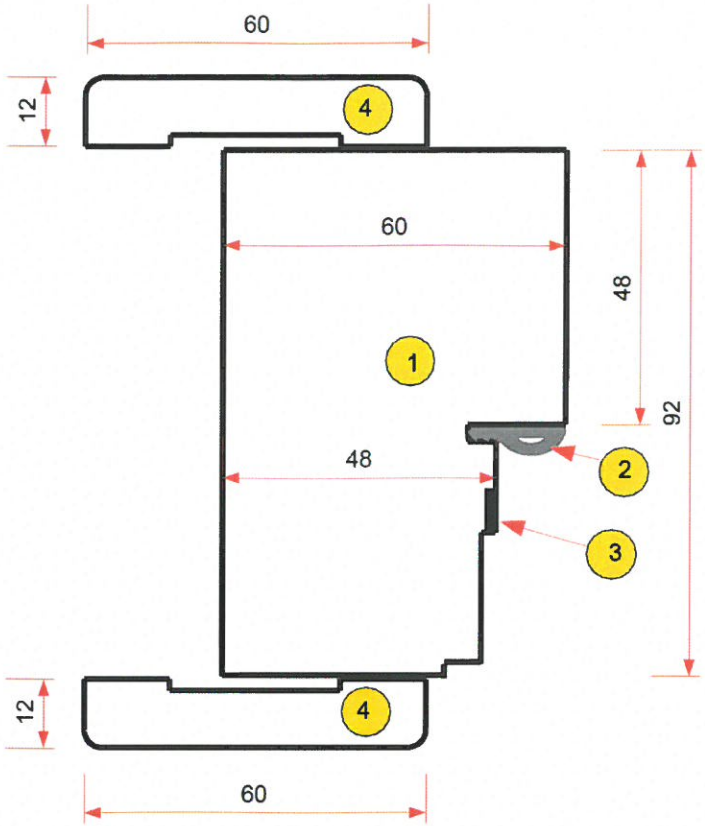
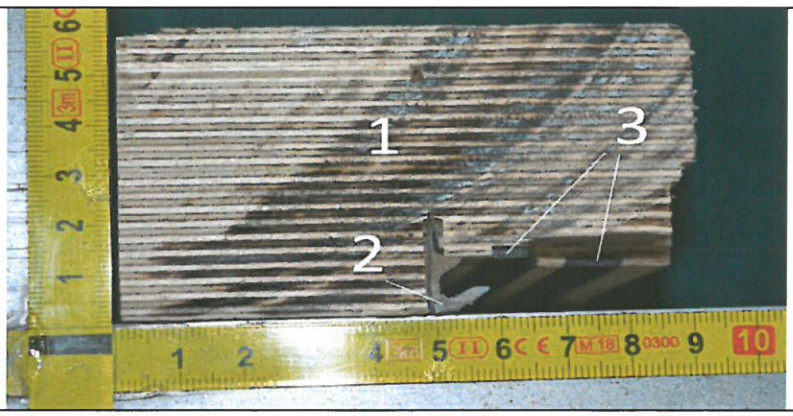
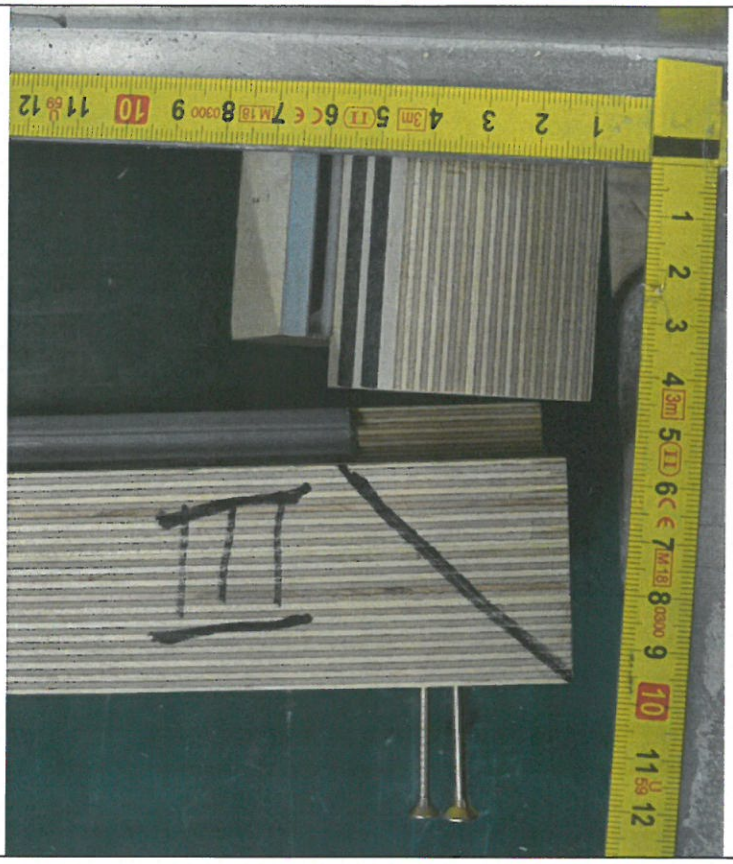
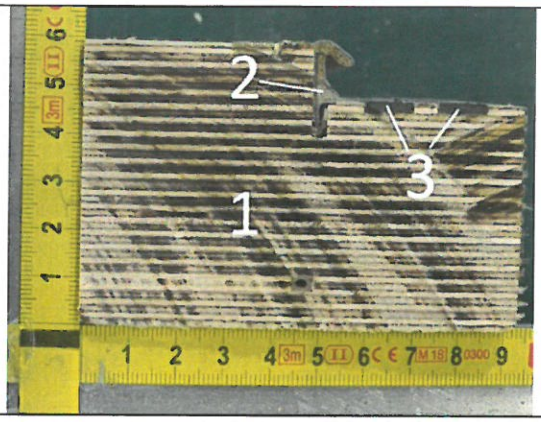
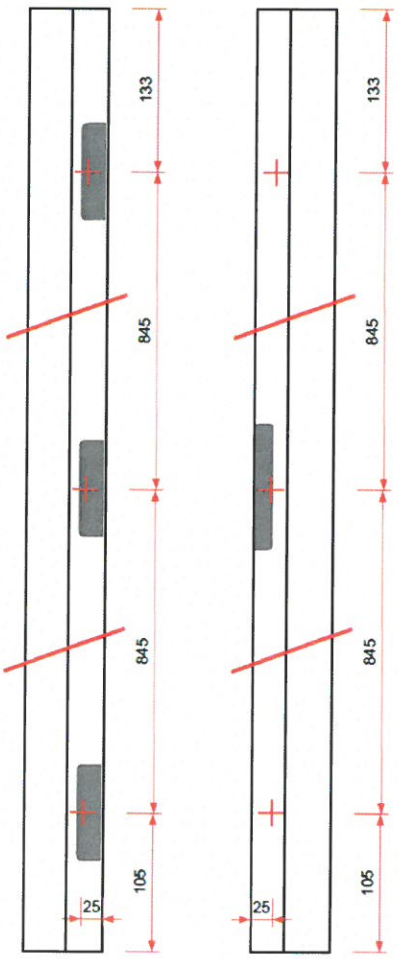
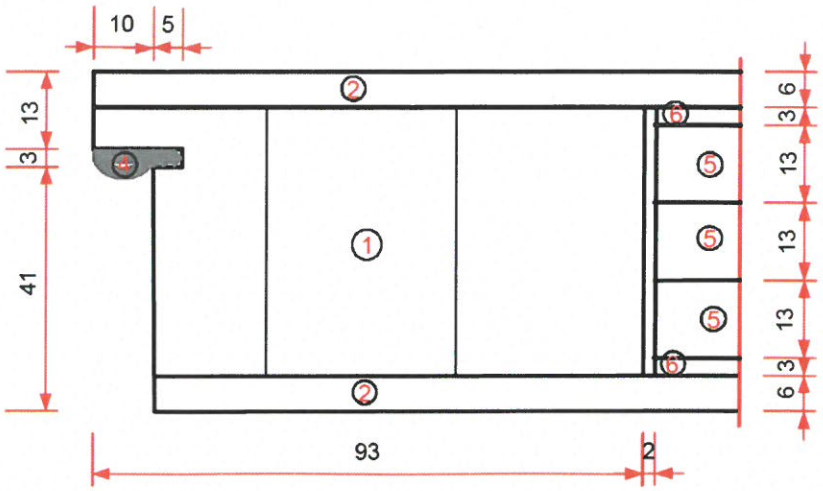
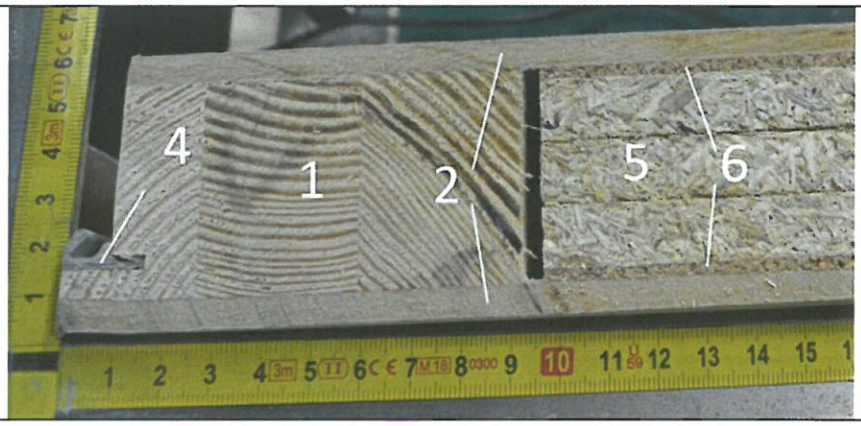
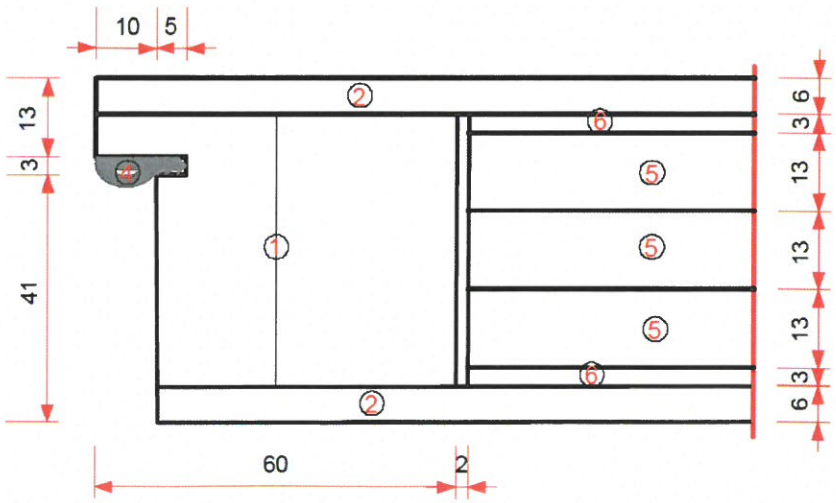
Photograph: Door frame cross-section „I”	
Figure: Door frame cross-section „II”	
Photograph: Door frame cross-section „II”	

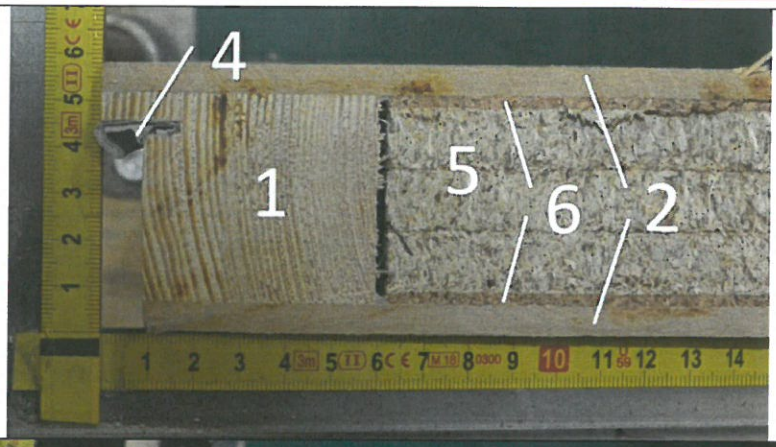
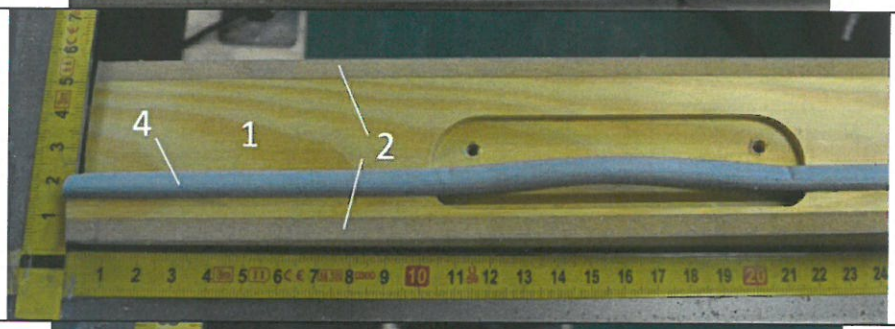
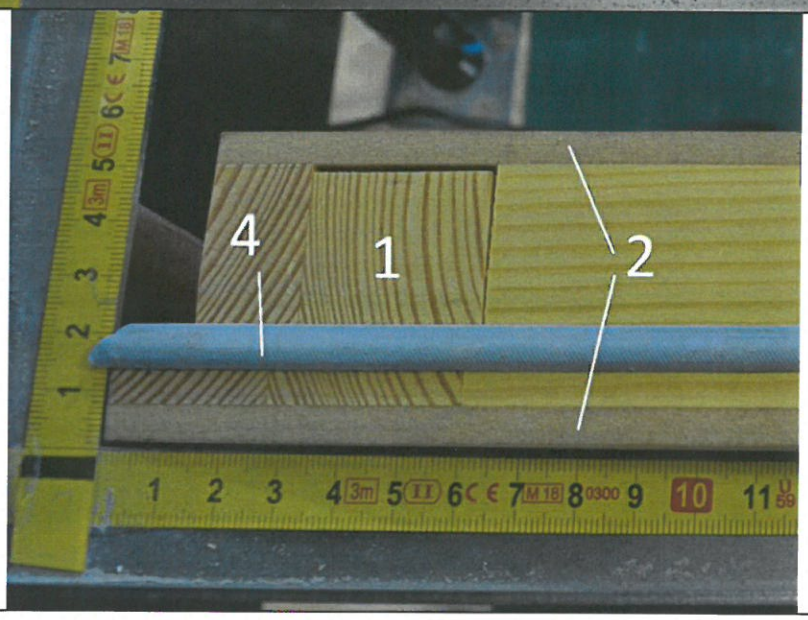
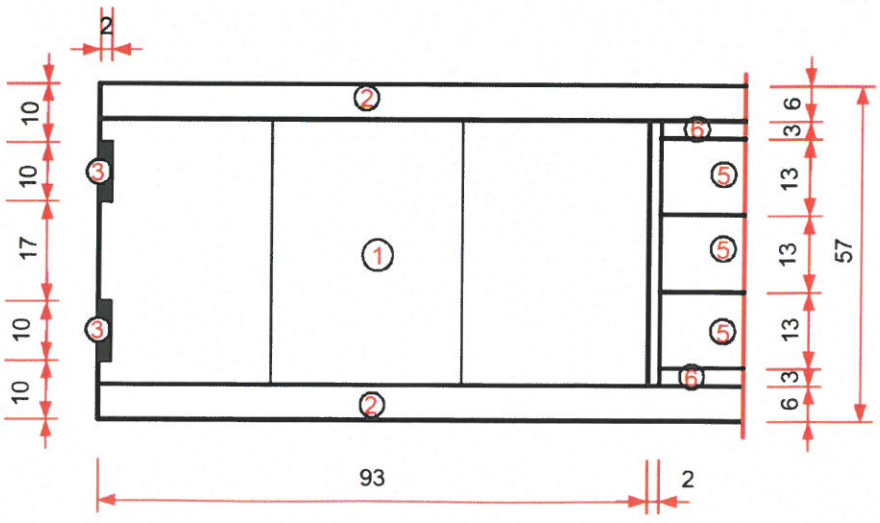
Figure: Door frame cross-section „IV"	
Photograph: Door frame cross-section „IV" (through the hinge)	
Door frame section description	1. Door frame 60 x 92 mm (measurement), 57 x 92 mm (declared) (BIRCH PLYWOOD) density 670-720 kg/m³, manufacturer Latvijas Finieris 2. Draught seal Schlegel QL 3096 8x18.5 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
Type of layer connection	The plywood is glued with a waterproof phenolic formaldehyde resin glue. Bond strength values comply with: EN 314/3 class; BS 1203 / H4 (WBP); DIN 68705 Part 3 / type BFU 100

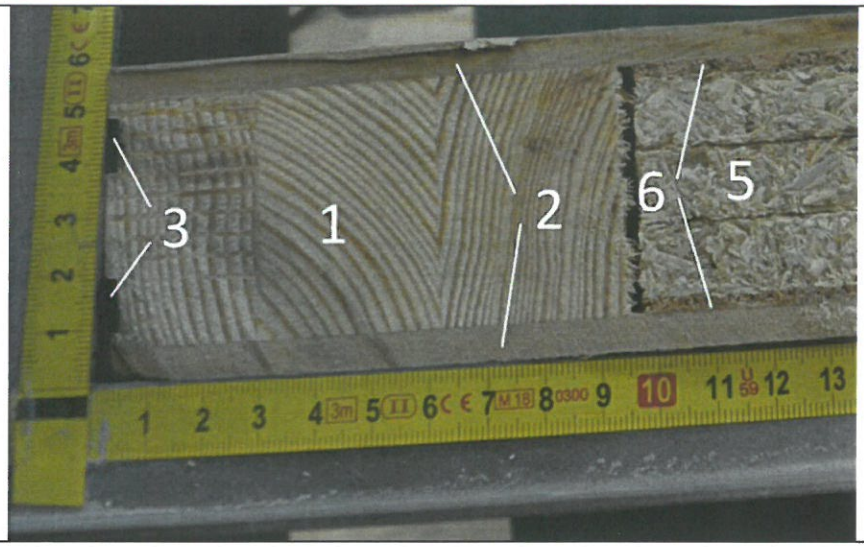
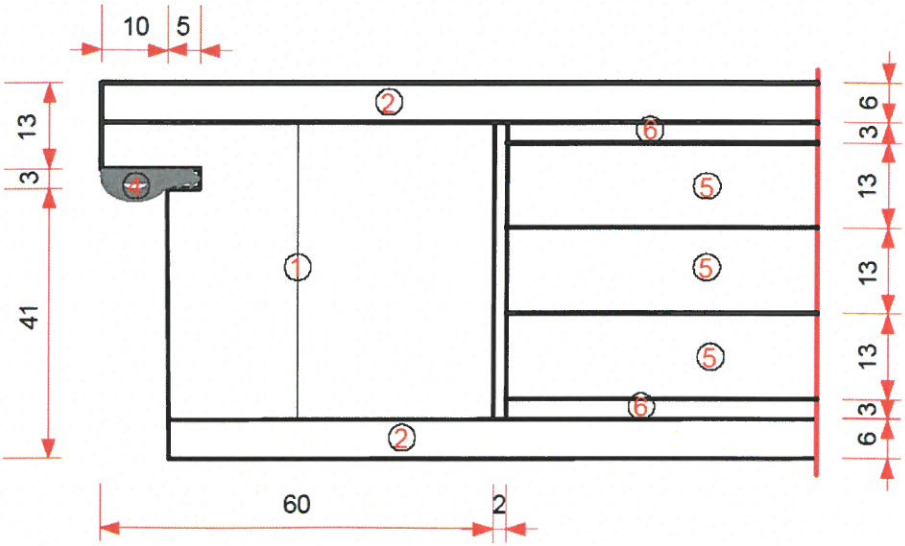
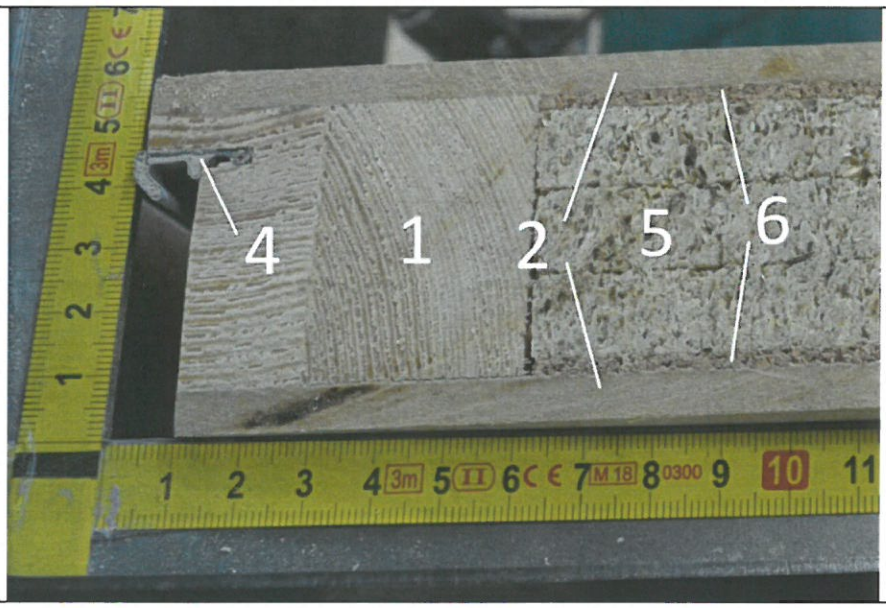
Photograph: Corner connection	
Description of corner connection	Corners are connected with 2 screws L=79,2 mm ø 4,4 mm
Cuts out in door frame	3 cuts for each hinge, 1 cut for lock`s catch plate
Photograph: cuts in intumescent seals for hinges	
Photograph: cuts in intumescent seals for lock`s catch plate	
Intumescent seals of door frame - description	Marvon -Tecnoflame rubber profile 10 x 2 mm, quantity 2 pcs, position – 8 mm and 23 mm from the doorframe edge.
Cuts in door frame intumescent seals	Hinges: length 112 mm, first seal fully removed, second seal – 5 mm width removed. Lock`s catch plate: length 170 mm, first seal fully removed, second seal – 7.5 mm width removed.

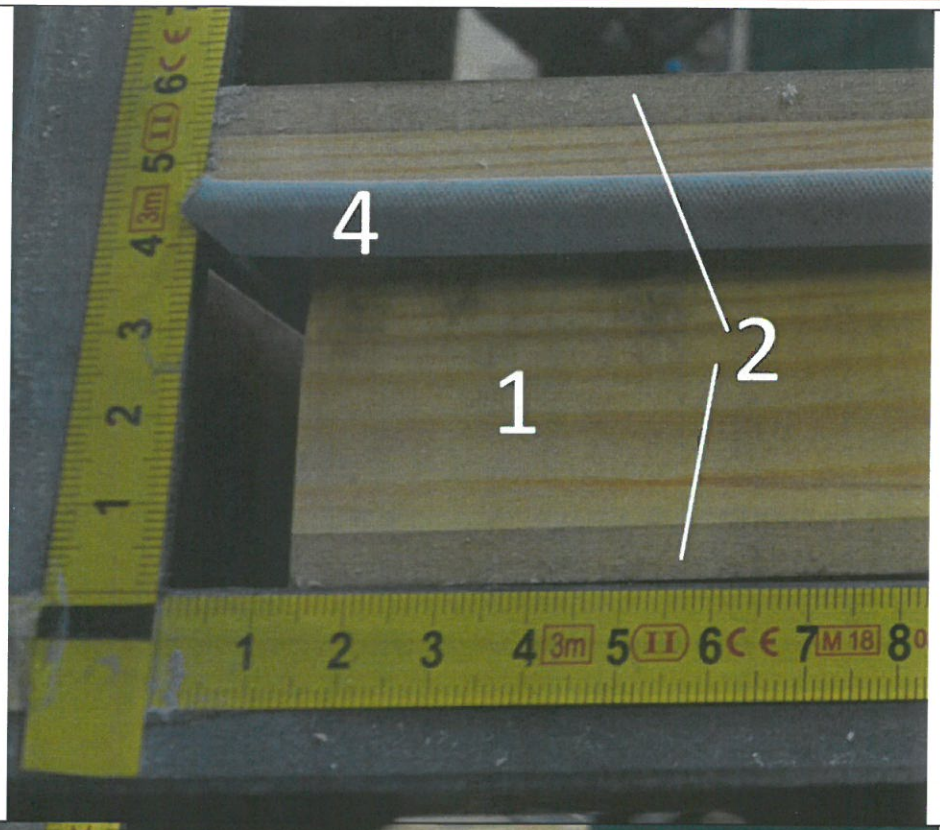
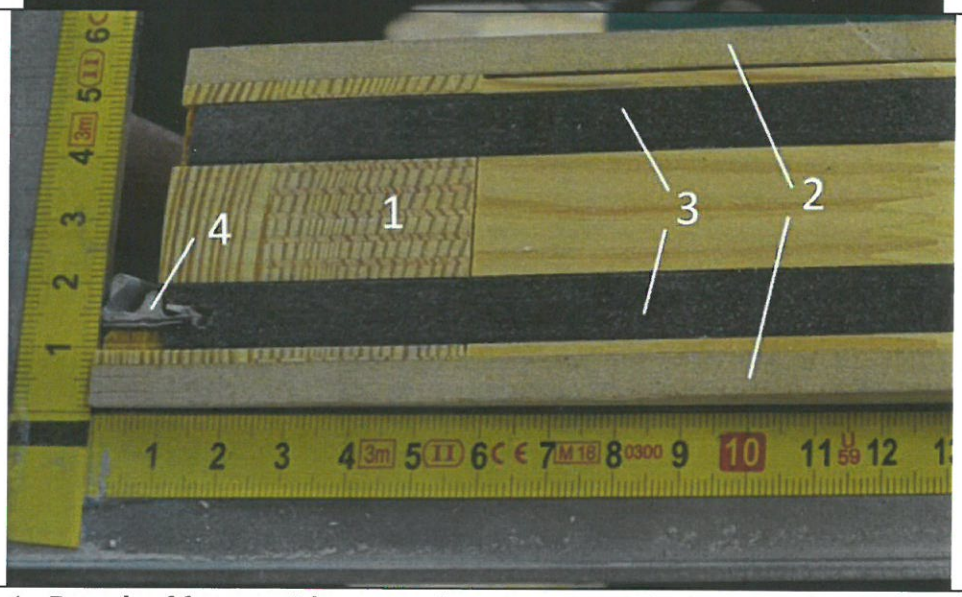
Photograph: Door frame draught seal	
Description of door frame draught seal	Schlegel QL 3096 8x18.5 mm
Draught seal of the door - reaction to fire	Unknown
Door frame assembly with supporting construction	3 screws on the left and right side according to client`s scheme, gap between doorframe and supporting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

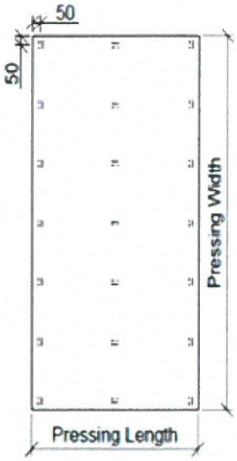
2.2.3 Door leaf structure

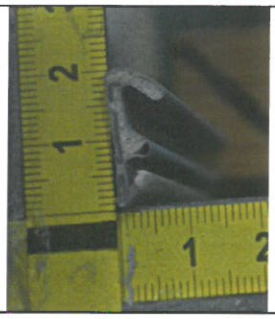
Figure: Door leaf cross-section „AB”	
Photograph: Door leaf cross-section „AB”	
Figure: Door leaf cross-section „BC”	

Photograph: Door leaf cross-section „BC"	
Photograph: Door leaf view „6C"	
Photograph: Door leaf view „6A"	
Figure: Door leaf cross-section „DE"	

Photograph: Door leaf section „DE”	
Figure: Door leaf cross-section „EF”	
Photograph: Door leaf cross-section „EF”	

Photograph: Door leaf view „7F"	
Photograph: Door leaf view „7D"	
Door leaf elements description	1. Door leaf frame with external cross section dimensions: top rail – 45 x 93 mm, bottom rail – 45 x 93 mm, lock stile – 45 x 60 mm, hinge stile – 45 x 60 mm, made from pine wood, density 485 kg/m^3, manufacturer Brodoor. 2. Fireproof MDF thickness 6 mm, density 790-830 kg/m^3, supplier Attels R, SIA. 3. Intumescent seal Marvon - Tecnoflame rubber profile 10 x 2 mm. 4. Draught seal Schlegel QL 3096 8x18.5 mm. 5. Three beaverboard Sauerland, with thickness 13 mm each VL, density 515 kg/m^3. 6. Corkboard Sauerland Cork 3 mm, density 200 kg/m^3.

Type of door leaf elements connection	Glue and staples connections Scheme of staples connections: 
Glue usage	PVA D3 glue used evenly on surfaces of core materials, usage 130 g/m^2 PVA D3 glue used evenly on surfaces of door frame, usage 130 g/m^2
Type of bonding connection	evenly
Door leaf width [mm]	57
Photograph: Door leaf section „4”	
Photograph: elements in leaf permiter framing	
Leaf permiter framing connection	By 2 staples

Photograph: draught seal of the door leaf	
Draught seal of the door leaf - description	Schlegel QL 3096 8x18.5 mm
Draught seal of the door leaf – reaction to fire	Unknown

2.2.4 Fittings

Hinges	Type: NTR 110x30 T ZN, manufacturer: ABLOY, supplier: Fiskostar OU • 3 pcs per door leaf • Distance from top of upper hinge to top of door leaf: 102 • Distance from bottom of lower hinge to bottom of door leaf: 92 • Distance from top of lower hinge to the middle of intermediate hinge: 765
Lock	Type: BMH 1000, manufacturer: Beyer Muller GmbH • Operated from both sides by a handle • 1 pcs per door leaf • Distance between latch bottom edge and door leaf bottom edge: 1006
Lock insert	Type Cilindra 35x35 – nikelis, manufacturer: Razots ES Izplatitajs SIA "Eurolocks"
Door handle	Type: Nylon-FS-Druckergarnitur, manufacturer: Erich Dieckmann GmbH
Self-closing devise	Type: Unik3600 AS36459S.PL, manufacturer: TELESCO UCEM Sistemas de Seguridad, S.A.

A detailed description of the door with the trade name: AF02 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 aplication standards and date of test
CERTBUD Sp. z o. o. Testing and Calibration Laboratories ul. Bukowiecka 92, 03-893 Warszawa	SIA "Brodoor" Pils rajons 44, Jekabpils, Latvija, LV-5202	946/SIA-BRODOOR/ 2020-2/S5A/1	PN-EN 1634-1+A1:2018-03 (EN 1634-1:2014+A1:2018). 23.06.2020

3.2 Tested samples

Report ref. no	Sampling procedure	Conditioning	Number of samples taken
946/SIA-BRODOOR/ 2020-2/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/ 2020-2/S5A/1	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 5 minutes 22 seconds (category "A") For EI_2 5 minutes 22 seconds (category "A")
	effective depth of rebate	58 % (medium 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 AF02 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	IncSIow	sn	ef	r	G	K

Fire resistance classification:

EI_1 30/EI_2 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 grater than 25% (maximal weight: 69.75 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: 69.75 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: 6.5 mm Maximal value of gap on lock side: 5.0 mm Maximal value of gap on top rail side: 6.0 mm Maximal value of gap on threshold side: 4.5 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 doorsets only size reduction and increase are permitted. Maximal external dimensions of door leaf are: Maximal width: 1000 mm Maximal height: 2225 mm Maximal area: 2.02 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 Wyrobów Budowlanych

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

APPROVED

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