ESL

مختبر الإمارات للسلامة
EMIRATES SAFETY LABORATORY

TEST REPORT

No. 0054-25-TR-01

Fire resistance of **Latched, Single Action, Single Door Fire-Rated PSB Wooden door with hard wood frame – Laidlaw Hardware set** made according to technical documentation No. ABS00084-STD-FR-60-PSB-137 R02 (dated 11-12-2024).

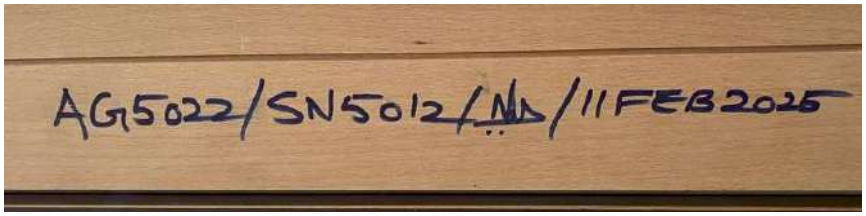
according to:
- EN 1363-1:2020
- EN 1634-1:2014+A1:2018

Date of issue: 19 March 2025

ilac-MRA

IAS ACCREDITED Testing Laboratory TL-1038

1 EXCLUSIVE SUMMARY

Test method:	EN 1363-1:2020 – *Fire resistance tests - Part 1: General requirements*. EN 1634-1:2014+A1:2018– *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows.*
Name and address of the testing laboratory:	Emirates Safety Laboratory Al Warsan III, Dubai United Arab Emirates
Date of specimen(s) delivery:	The test element with the technical documentation was delivered by the manufacturer to the laboratory on 13 February 2025.
Date of specimen(s) installation:	13 to 15 February 2025
Date of testing:	17 February 2025
Name and address of the test sponsor:	Abanos Furniture and Decoration Industries LLC P.O. Box 114480 Dubai, United Arab Emirates
Name and address of the manufacturer/supplier:	Abanos Furniture and Decoration Industries LLC P.O. Box 114480 Dubai, United Arab Emirates
Name of the test specimen: (product name)	Latched, Single Action, Single Door Fire-Rated PSB Wooden door with hard wood frame
Identification of the test specimens:	Two single-leaf wooden doorset were installed in a vertical rigid supporting construction, Door 1 – opening towards the furnace Door 2 – opening away from the furnace *Both door sets were of the same design and only the opening direction was different to test from both sides of the door*.
ESL identification number:	0054-25-01 - opening towards the furnace 0054-25-02 - opening away from the furnace
Description of sampling procedure including date if applicable:	Test specimens were selected by ESL Certification (sampling acknowledgement dated 11 February 2025) and delivered to ESL by the test sponsor. The Laboratory Team was not involved in the sampling process. 

2 TEST CONDITIONS

Heating temperature of the test element:	The standard temperature-time curve was maintained within its allowable limits according to EN 1363-1. Thea temperature inside the furnace during the test was measured at a distance of 140mm from the surface of the test construction. Heating conditions are shown in Graphs 1 and 2.
Furnace pressure:	Differential pressure in the furnace measured at a height of 500mm above the level of furnace floor was maintained according to EN 1363-1. The pressure probe was located at 385mm above the door sill level of the specimen. The pressure level during the test is shown in Graph 3.
Ambient temperature:	Measured during the test at a distance of 1900mm away from the unexposed face of the specimen, at the commencement of each test was 22.8°C

3 DESCRIPTION OF THE TEST SPECIMEN

Constructional details of the single leaf doorset are presented in the technical documentation enclosed with this report.

Table 1

Measurement	Nominal (mm)		Measured by ESL (mm)	
	Door 1	Door 2	Door 1	Door 2
Overall door frame size (h x w)	2185 x 1090	2185 x 1090	2185 x 1092	2183 x 1094
Overall door leaf size (h x w)	2147 x 1024	2147 x 1024	2148 x 1025	2148 x 1024
Overall architrave size – unexposed side(h x w)	2225 x 1170	2225 x 1170	2224 x 1175	2221 x 1171
Overall architrave size – exposed side(h x w)	2225 x 1170	2225 x 1170	2225 x 1172	2221 x 1169
Door frame clear opening (w x h)	2140 x 1000	2140 x 1000	2134 x 1002	2133 x 1000
Thickness of the door leaf	55	55	54.55	54.90
Door leaf Weight (kg)	-	-	109.29	109.32

3.1 Description of the Doorset (Door 1 & Door 2)

3.1.1 Description of the Door Frame

The doorset consisted of a door frame with a cross-section of 45 x 150 mm, as shown in Figures 2 and 3. The frame was made of Beechwood hardwood with a stated density of 670 kg/m³ and a stated moisture content of 9.2%, manufactured from European Beech Wood and supplied by Florian Legno, S.P.A. The frame was composed of two (2) parts, which were joined together using Kleiberit PUR 501.0 adhesive, manufactured by Klebchemie M.G. Becker GmbH & Co. The door frame jambs and head were connected by means of a miter joint at the corners, using one (1) Ø6 x 48 mm long and one (1) Ø8 x 76 mm fine thread SS drywall screw fixed at each frame head. The frame members were glued using wood glue manufactured by Ritver Paints & Coatings.

An architrave with cross-sections of 18 x 60 mm and 15 x 60 mm was manufactured and supplied by Al Talah Board Manufacturing Co. Ltd. This architrave was constructed from Desert Board PSB FR, with a stated density of 870 kg/m³ and a stated moisture content of 12%. The installation used Tritosil Montage sealant/adhesive, produced by Triton Middle East.

The 18 x 60 mm architrave was installed on both sides of the door frame jambs using five (5) Ø1.5 x 22 mm nails, with a center-to-center spacing of 550 mm. Additionally, the 15 x 60 mm architrave was affixed to the top of the frame with three (3) Ø1.5 x 22 mm nails on each side, positioned approximately 120 mm from both edges, along with an additional nail at the center. The architrave on the unexposed side had an extension designed for a pressure fit, ensuring a secure attachment to the frame, as shown in Figures 2 and 3.

3.1.2 Description of the Door Leaf

The door leaf was constructed from a 54 mm thick Desert Board PSB FR, which featured 3 mm thick Mahogany wood lipping on all sides. The Desert Board PSB FR, produced by Al Talah Board Manufacturing Co. LTD, had a stated density of 870 kg/m³ and a stated moisture content of 12%. It was composed of three (3) 18 mm layers that were bonded together using Kleiberit 501.0 PUR adhesive, manufactured by Klebchemie M.G Becker GmbH & Co., as shown in Figure 2 and 3.

Additionally, the 3 mm thick African Mahogany wood lipping, supplied by Danube Building Materials FZCO, had a stated density of 750 kg/m³ and a stated moisture content of 10.2%. It was securely attached to the edges of the core using Kleiberit reactive PUR Hotmelt 707.9, manufactured by Klebchemie M.G Becker GmbH & Co., as shown in Figure 2 and 3.

3.1.3 Doorset Gaskets:

Door Frame

- Two (2) 15 x 6 mm thick intumescent seals (Athmer FP 1506 - brown color), manufactured by Athmer, were installed 7mm from the opening edge and 29mm apart. (see Figures 2 and 3).
- A single winged corner seal (PS1212P – brown color) produced by Athmer has been installed on all three sides of the frame. (see Figures 2 and 3).

Door Leaf

- One (1) 15 x 4mm thick, intumescent seal (Athmer FP1504 – brown color), manufactured Athmer was installed centrally along the vertical edge and the top edge of the door leaf (see Figures 2 and 3).

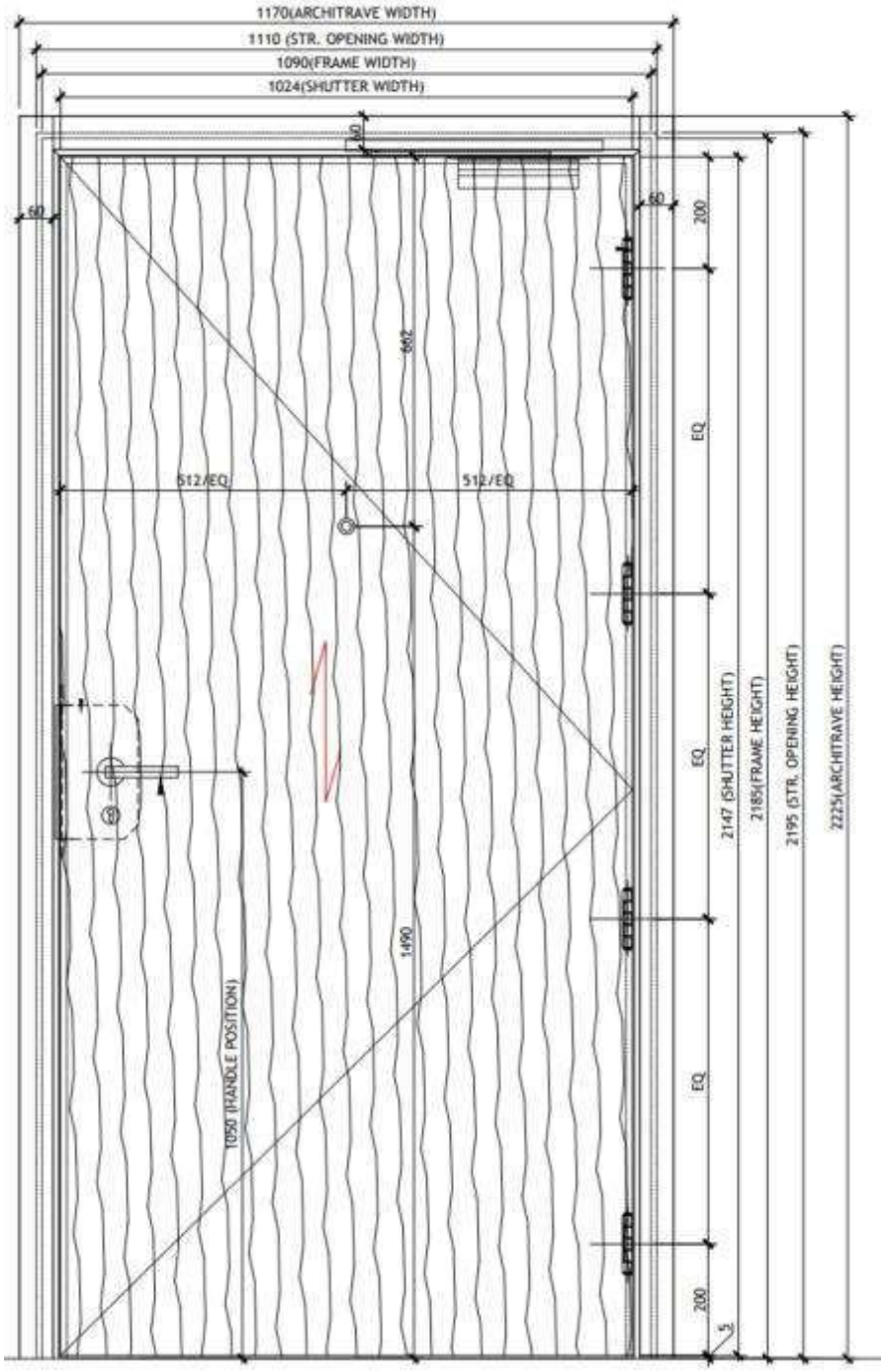


Figure 1. Elevation View of the Test Specimen

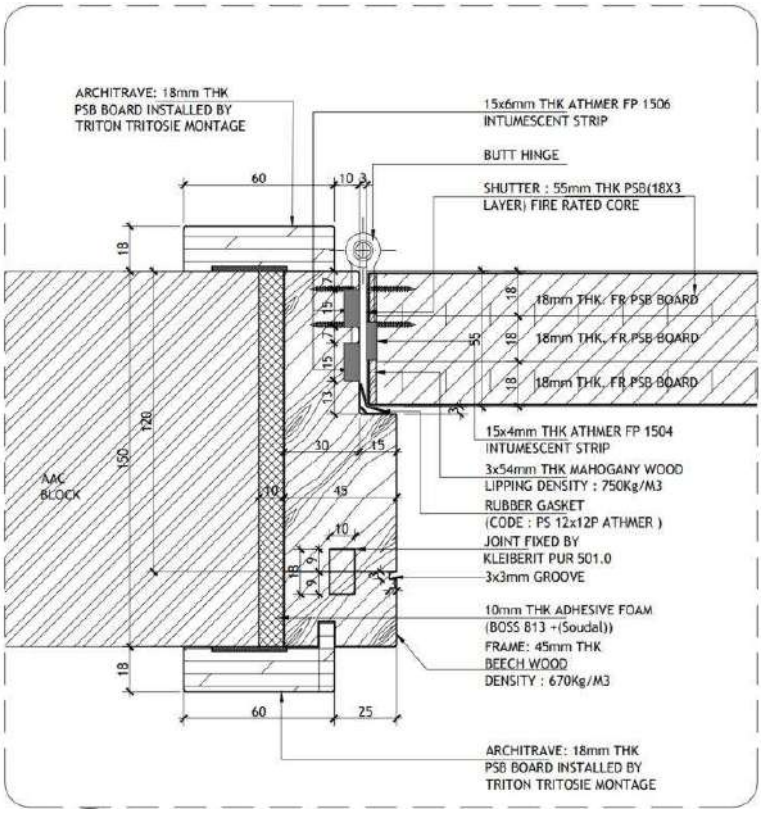


Figure 2. Vertical Jamb Details

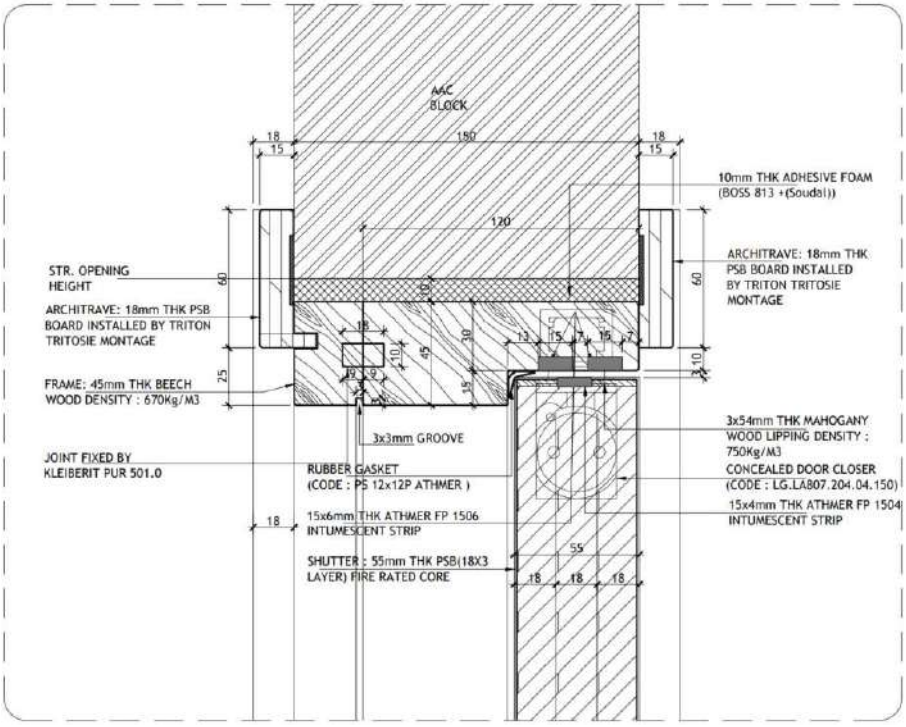


Figure 3. Horizontal Top Details

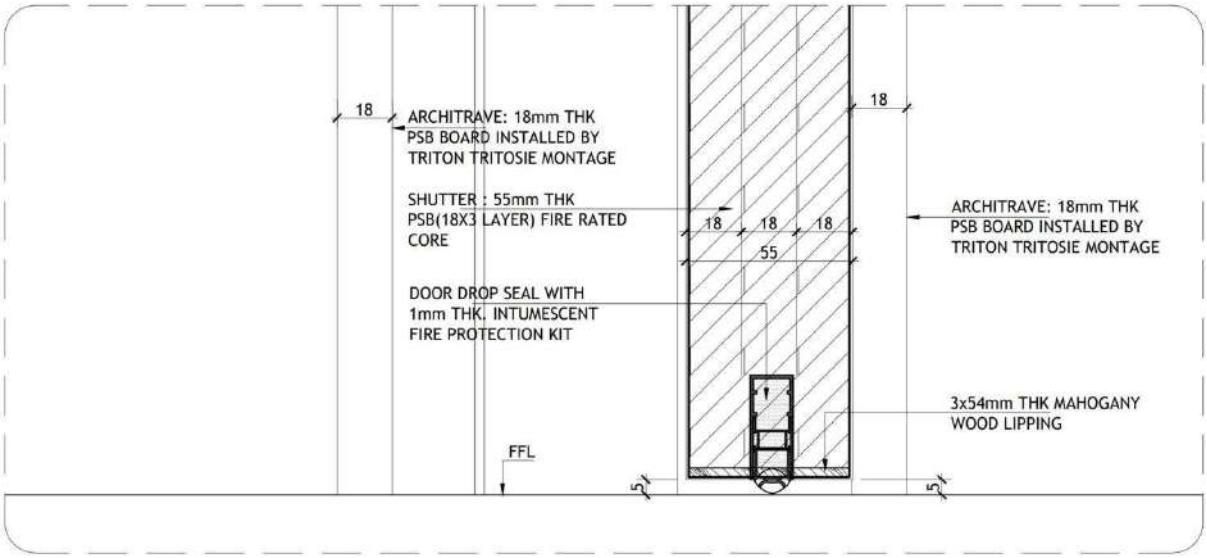


Figure 4. Bottom Door Leaf Detail

3.1.4 Door Hardware (Door 1 & Door 2)

Table 2

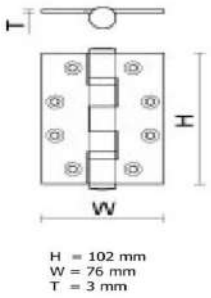
Hinge		
Manufacturer	Laidlaw Gulf LLC	
Type	Two Ball Bearing Butt Hinge	
Reference	LG.LA160.102.01.153W	
Dimensions	 H = 102 mm W = 76 mm T = 3 mm	
Quantity	Four on each specimen	
Fixing (hinge CL)	200mm and 785mm from the top of the leaf. 200mm and 785mm from the bottom of the leaf (measured by ESL).	
Protection	Manufacturer	Laidlaw Gulf LLC
	Reference	ITH-102x76
	Thickness	1mm

Table 3

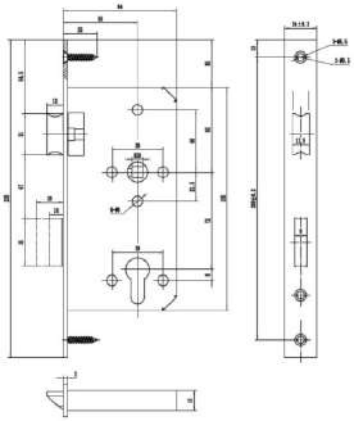
Door Lock		
Manufacturer	Laidlaw Gulf LLC	
Type	LGAI Mortice Sashlock, 55mm Backset	
Reference	LG.LA60.5572.01.153	
Latch Throw	12.03mm (verified by ESL)	
Dimensions	 Backset: 55mm depth, 165mm height and Lockset Keep: 24mm wide, 235mm height and 3mm thick	
Quantity	One on each specimen	
Fixing (CL)	1030mm from the bottom edge of each door leaf (measured by ESL).	
Protection	Manufacturer	Laidlaw Gulf LLC
	Reference	ITL-160X90
	Thickness	1mm

Table 4

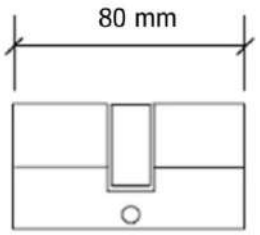
Door Lock Cylinder	
Manufacturer	Laidlaw Gulf LLC
Type	LGAI Double Cylinder
Reference	LG.LA212E.80.6.04
Dimensions	
Quantity	One on each specimen
Fixing	970mm from the bottom edge of each door leaf (measured by ESL).
Protection	Not applicable

Table 5

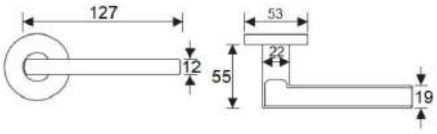
Door Handle & Escutcheon		
	Door Handle	**Escutcheon**
Manufacturer	Laidlaw Gulf LLC	Laidlaw Gulf LLC
Type	LGAI Range Lever Handle	Escutcheon
Reference	LG.LA 54 204.6	Comes in lever handle
Dimensions		Ø53mm x 8mm thick
Quantity	One on each specimen	One pair on each specimen
Fixing (CL)	1035mm from the bottom edge of each door leaf (measured by ESL).	Fixed on either face of each door leaf (verified by ESL).
Protection	Not applicable	

Table 6

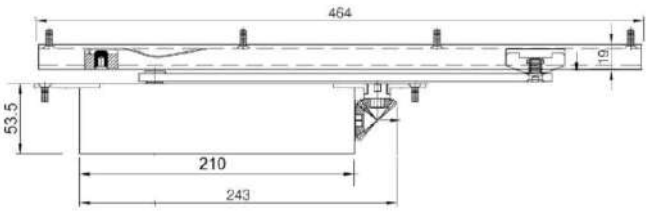
Door Closer		
Manufacturer	Laidlaw Gulf LLC	
Type	LGAI Overhead Concealed Door Closer	
Reference	LG.LA807.204.04.150	
Dimensions		
Quantity	One on each specimen	
Fixing	83mm from the top edge of each door leaf (measured by ESL).	
Protection	Manufacturer	Laidlaw Gulf LLC
	Reference	ITD-LA807
	Thickness	1mm

Table 7

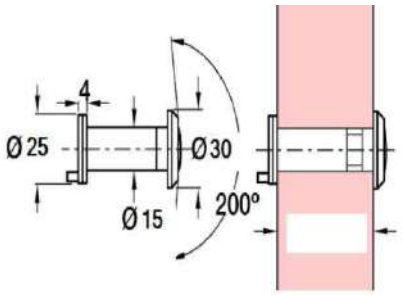
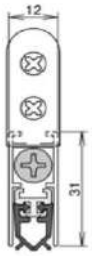
Door Viewer		
Manufacturer	Laidlaw Gulf LLC	
Type	Door Viewer	
Reference	LG.LA407.60.04.150	
Dimensions		
Quantity	One on each specimen	
Fixing	1485mm from the bottom edge of each door leaf (measured by ESL).	
Protection	Manufacturer	Athmer
	Reference	Graphite Intumescent Liner
	Thickness	1mm

Table 8

Drop Down Seal	
Manufacturer	Athmer
Type	Drop seal
Reference	AD-153-1030
Dimensions	
Quantity	One on each specimen
Fixing	At the bottom center of each door leaf (measured by ESL).
Protection	Not applicable

3.2 Components Photographs

Door Handle and Lock

Door Closer

Hinge

Corner Seal & Intumescent at Door Fame

Drop Down Seal

Door Viewer

Intumescent at Door Leaf

Foam used to fill the gap between supporting construction and frame

3.3 Installation

A 10mm gap between the door frame and the supporting structure was filled with Boss813+ Firestop foam manufactured by Soudal NV, Belgium. Additionally, Ø8 x 100mm self-tapping screws with Klimax plastic anchors were installed approximately 500mm apart, in five (5) vertical locations on both jambs as shown in Figure 2.

Calcium silicate board of 12mm thickness constituted a simulation of the floor.

3.4 Description of the supporting construction

The doorset was installed in rigid standard supporting construction (according to EN 1363-1 standard). Supporting construction of 150mm thick autoclaved aerated concrete blocks with a nominal density of 500 ± 50kg/m^3 was filling the mounting frame of dimensions 4240 x 4240mm, made of a steel H-profile. The whole construction was used to close the furnace. Supporting construction was conditioned until it was deemed satisfactory by the Laboratory as per relaxation given in Appendix A of EN 1634-1.

3.5 Verification

Verification of the test elements was performed before the test, during the assembly and after the test. It included visual inspection of constructional details and its assembly method as well as assessment of dimensions' conformity with technical documentation.

Note: the information provided in section 3.1 has been compiled based on information received from the Test Sponsor unless stated differently. When the method of construction precluded a detailed survey of the test specimen then laboratory relied on verification by the Certification body which has overseen (during the sampling process) the manufacture of the doorset which is to be the subject of the test";"

4 PRE-TEST PREPARATION

4.1 Conditioning

The doorset was installed by the test sponsor from 13 to 15 February 2025 in the previously conditioned supporting construction. The test element was conditioning for 1 day afterwards under following conditions:

- relative humidity: min RH (%): 32.3, max RH (%): 73.4
- temperature: min temp. (°C): 19.1, max temp. (°C): 73.4

4.2 Operability test

The test element prior to the fire resistance test and after conditioning was submitted to operability according to EN 16034:2014, by operating 25 cycles of opening to 90° and fully closed the door leaves.

4.3 Closing force measurements

The maximum closing force for each door leaf measured prior to the test, during the opening at a distance of 100mm was:

- Door 1: 71.3N
- Door 2: 63.3N

4.4 Gaps measurements

Gaps measurements made in ESL laboratory are shown in Table 9.

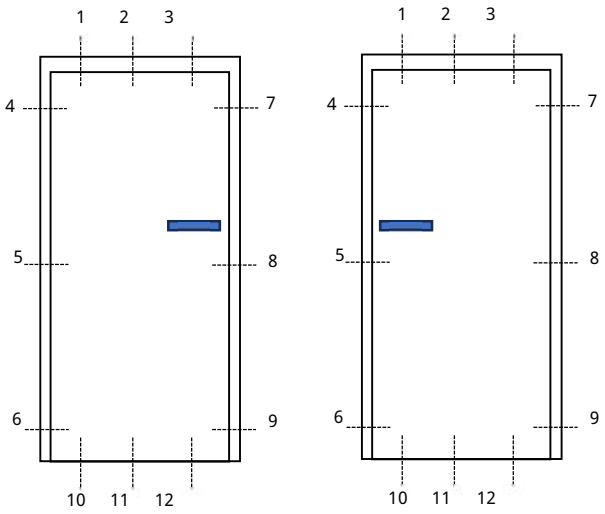


Figure 5. Gap measurement location

Table 9

No.	Door 1 Exposed side (mm)	Door 2 Unexposed side (mm)
1	3.31	2.31
2	3.73	2.26
3	3.12	2.61
4	2.7	2.58
5	2.34	2.7
6	2.48	2.24
7	3.37	1.94
8	2.33	1.86
9	2.77	1.91
10	1.87	3.95
11	1.57	3.49
12	2.78	3.82

Permitted gap sizes are shown in Table 10.

Table 10

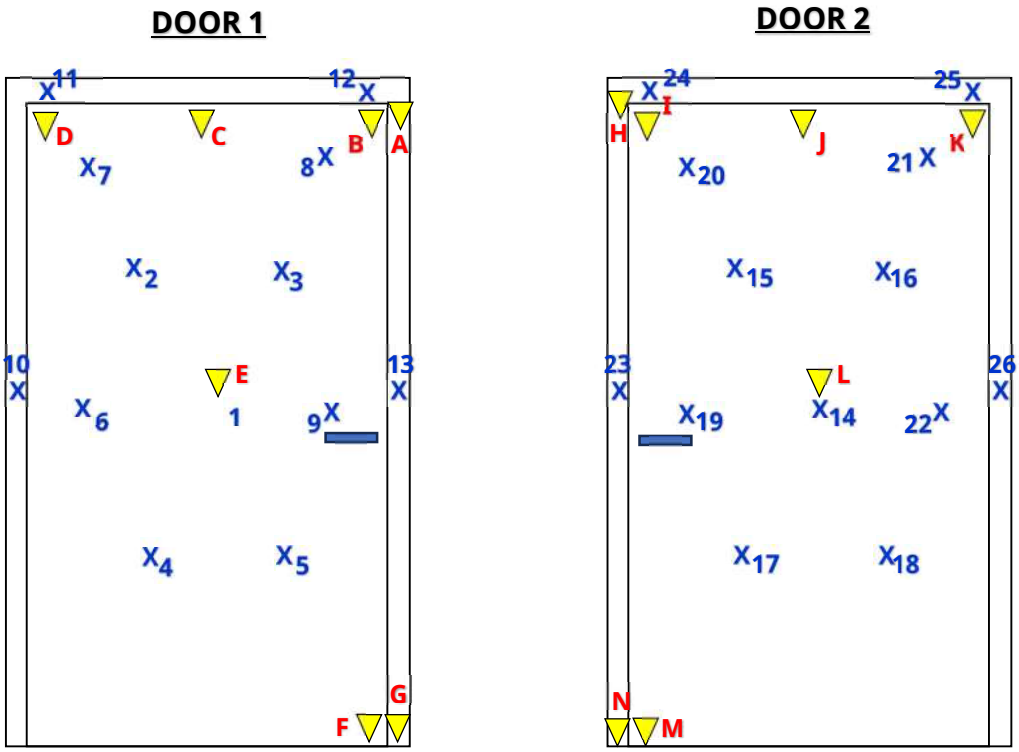
GAPS			***Measurements, mm***		
			Average	***Maximum***	***Permitted gap size***
Door 1 & 2	Along the horizontal edges	At the top	2.9	3.7	5.0
		At the bottom	2.9	4.0	5.1
	Along the vertical edges	Hinge side	2.7	3.4	4.9
		Lock side	2.2	2.7	4.3

4.5 Final settings

Prior to the fire resistance test, the test specimens were subjected to a final closing involving opening the leaves to a distance of approximately 300 mm and returning it to the closed position.
The doors were latched, and the key was removed from the lock. The door closer was connected.

4.6 Arrangement of temperature and defection measurement points

The positioning scheme of the temperature and deflection measuring points is shown in Figure 6.

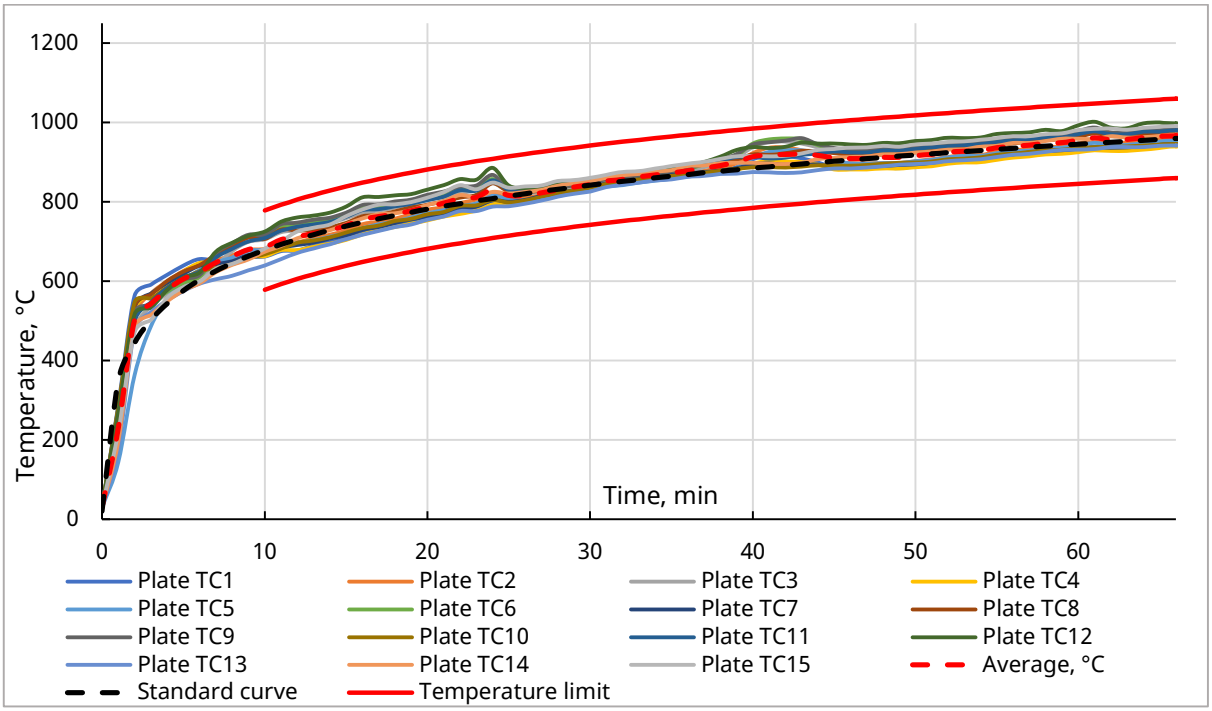


x – temperature measuring point (standard procedure)
▽ – deflection measuring point

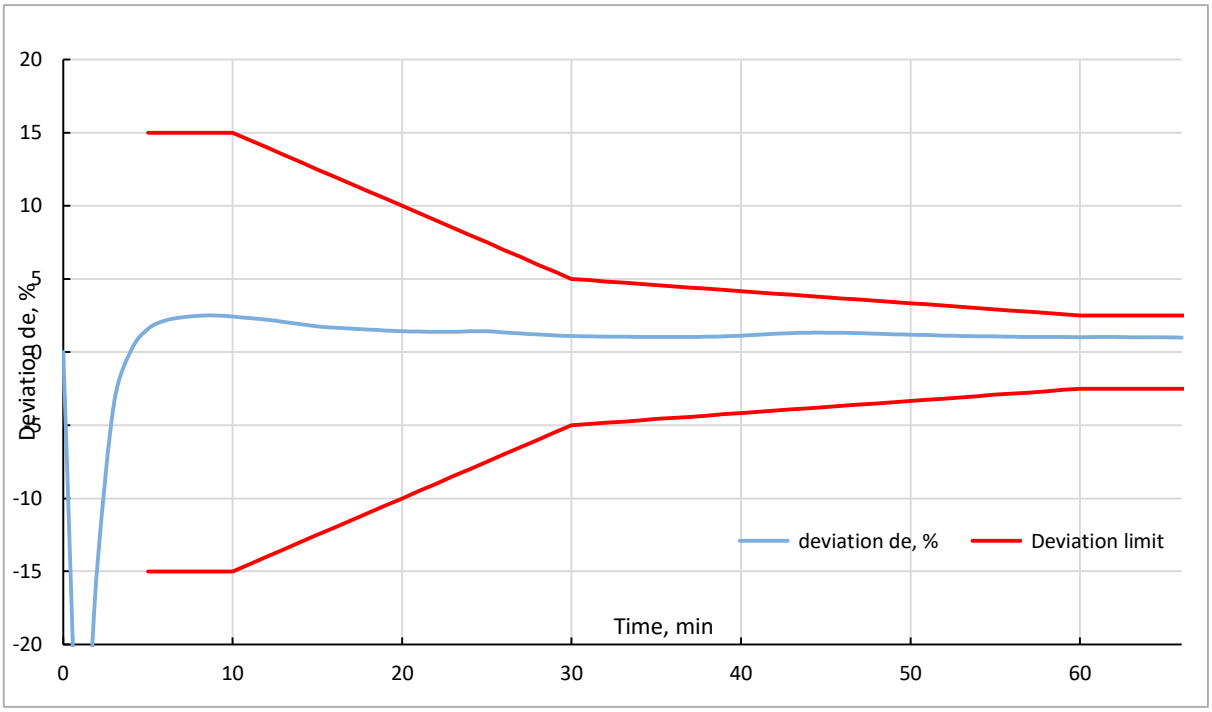
Figure 6. Scheme of the temperature and deflection measuring points on the unexposed side of the door

5 TEST RESULTS

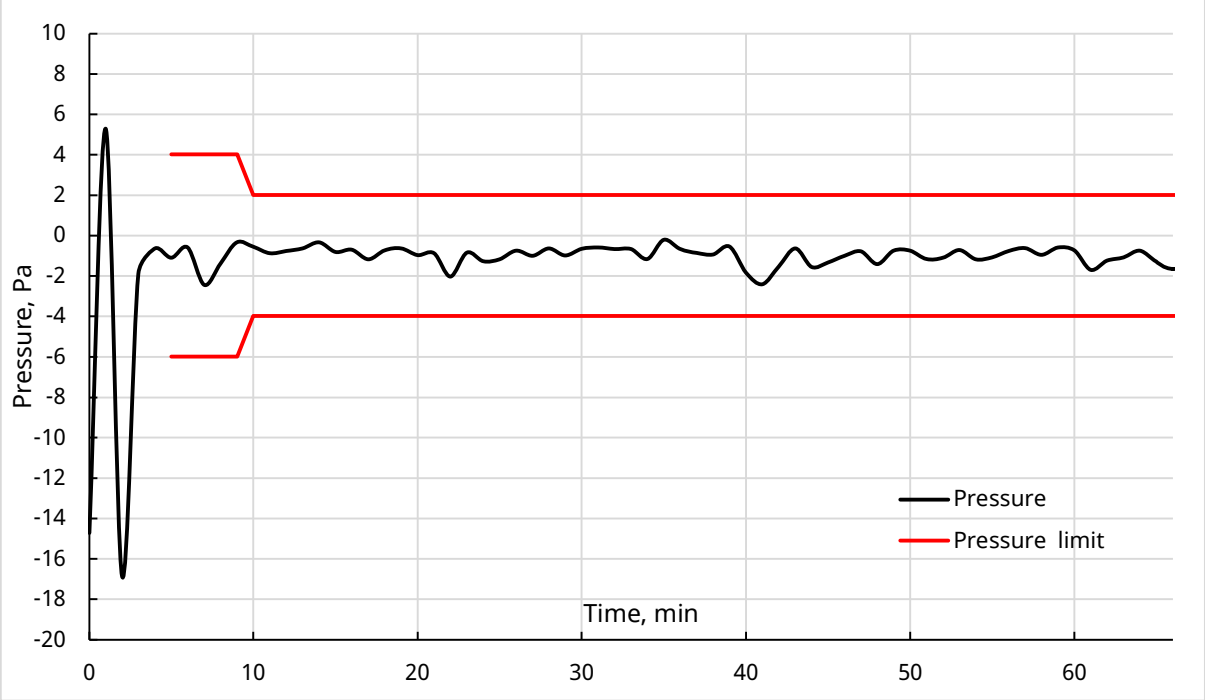
5.1 Furnace conditions



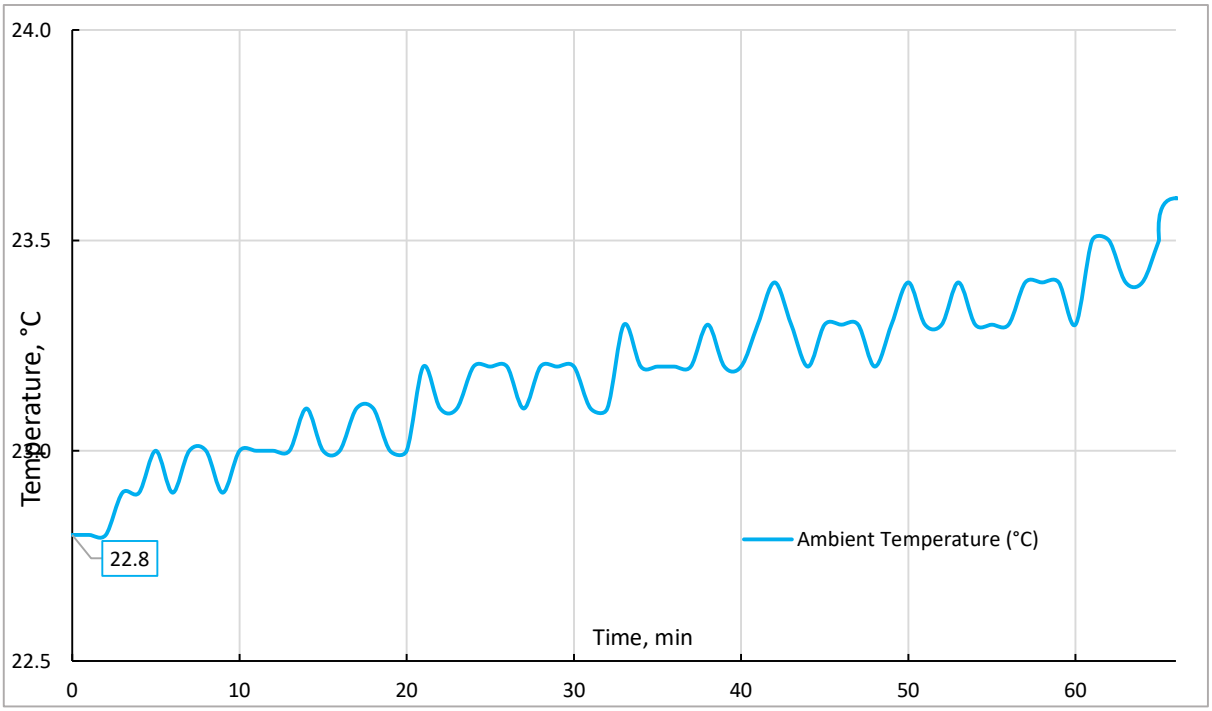
Graph 1. Temperature in the furnace during the test



Graph 2. Deviation d_e and tolerance limits of heating deviation during the test



Graph 3. Pressure inside the furnace during the test.



Graph 4. Ambient temperature during the test

5.2 Fire test results

5.2.1 Observations

Table 11

Elapsed time, min	OBSERVATION
0	Commencement of Test.
8	Discoloration on the architrave near the door closer – Door 2.
17	Discoloration the architrave adjacent to the door closer – Door 1.
22	Intumescent strip on the door viewer has been activated– Door 2.
23	Smoke is emanating from the keyhole – Door 1.
24	Discoloration on the leaf adjacent to the lockset. – Door 2.
27	Discoloration on the door viewer – Door 2.
31	Discoloration on the door viewer. – Door 1.
50	Discoloration on the escutcheon and door handle – both doors.
61	Cotton pad application on the top right corner of the leaf – Door 1. No ignition or charring.
62	Glowing at the upper left vertical edge of the leaf. – Door 2.
62[57]	**Integrity failure. Cotton pad ignition at the upper left vertical edge of the leaf – Door 2.**
64	Cotton pad application at the upper left vertical edge of the leaf – Door 2. Visible charring and no ignition.
64[58]	**Integrity failure. Sustained flaming at the upper left vertical edge of the leaf – Door 2.**
65	Glowing at the bottom right corner – Door 1.
66[14]	**Integrity failure. Cotton pad ignition at the bottom right vertical edge of the leaf – Door 1**
66	End of the test, as per test sponsor request.

5.2.2 Deflection measurements

Deflection measurements are shown in Table 12.

Table 12

	Time, min.	***Deflection at the measuring point, mm***													
		Door 1							**Door 2**						
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**
„+" Deflection towards the furnace *„-" Deflection outwards the furnace*	***0***	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	-1	0	0	0	+1	+1	0	+2	+1	+2	+1	+1	0	0
	20	-1	+1	+2	0	+2	+3	0	+2	+5	+3	+2	+1	0	0
	30	-1	+1	+1	0	0	+2	0	+2	+5	+4	+4	0	0	0
	40	-1	-1	0	0	-6	+2	0	+2	+5	+2	+6	+3	0	0
	50	+2	-2	+5	0	-13	+9	0	+3	-5	-8	+5	-18	-3	0
	55	+4	-2	+8	0	-20	+11	0	+3	-8	-14	+5	-29	-6	0
	60	+5	-5	+14	0	-29	+17	0	/1	/1	/1	/1	**-46**	/1	/1

/1 – measurements omitted due to safety reasons.

5.2.3 Temperature rise on the unexposed side of the door

Temperature rise on the unexposed side of the Specimen in Table 13 & 14.

Table 13. Door 1

Elapsed time	*TEMPERATURE RISE AT POINTS, °C*													ΔT_{avg} *pts.: 1-5,*	ΔT_{max} *pts.: Std. 1-9*	$\Delta T_{max\ frame}$ *pts.: 10-13*
	Standard procedure															
	Doorset									*Frame*						
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*°C*	*°C*	*°C*
0	0.5	0.0	0.0	0.0	0.2	-0.2	0.1	0.1	0.3	-0.1	-0.3	-0.2	0.1	0.1	0.5	0.1
1	0.5	0.2	0.1	0.1	0.2	-0.2	7.1	0.2	0.3	-0.2	0.2	-0.2	0.1	0.2	7.1	0.2
2	0.6	0.1	0.1	0.0	0.2	-0.1	7.3	0.3	0.3	-0.1	0.8	-0.2	0.1	0.2	7.3	0.8
3	0.5	0.0	0.0	0.0	0.2	-0.1	13.4	0.5	0.4	-0.2	1.5	-0.3	0.1	0.1	13.4	1.5
4	0.6	0.0	0.0	-0.1	0.1	-0.1	18.0	0.4	0.4	-0.2	2.7	-0.1	0.1	0.1	18.0	2.7
5	0.7	0.1	0.1	0.0	0.2	-0.1	22.1	0.5	0.5	-0.2	3.5	0.0	0.0	0.2	22.1	3.5
6	0.7	0.1	0.1	0.0	0.2	-0.1	23.7	0.6	0.4	-0.2	3.9	-0.1	0.2	0.2	23.7	3.9
7	0.7	0.1	0.1	0.0	0.2	0.0	23.8	0.6	0.4	-0.2	5.2	-0.1	0.1	0.2	23.8	5.2
8	0.7	0.2	0.2	0.0	0.3	0.0	23.0	0.6	0.5	-0.1	5.9	-0.1	0.2	0.3	23.0	5.9
9	0.8	0.2	0.3	0.2	0.4	0.1	22.5	0.6	0.6	-0.2	6.0	-0.2	0.2	0.4	22.5	6.0
10	0.8	0.3	0.3	0.1	0.3	0.0	20.6	0.6	0.7	-0.1	6.1	0.0	0.3	0.3	20.6	6.1
11	0.7	0.2	0.3	0.2	0.3	0.1	18.8	0.6	0.6	-0.2	6.0	0.0	0.3	0.3	18.8	6.0

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	$\Delta T_{max\ frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	1	2	3	4	5	6	7	8	9	10	11	12	13	°C	°C	°C
12	0.9	0.3	0.4	0.2	0.4	0.1	15.2	0.6	0.7	0.0	6.2	-0.1	0.2	0.4	15.2	6.2
13	0.8	0.2	0.4	0.2	0.3	0.1	13.1	0.8	0.8	0.0	6.3	-0.1	0.2	0.4	13.1	6.3
14	0.8	0.3	0.4	0.2	0.4	0.2	10.2	0.7	0.8	-0.1	6.7	-0.1	0.2	0.4	10.2	6.7
15	0.8	0.4	0.4	0.3	0.5	0.2	8.1	0.8	0.9	-0.1	7.1	-0.1	0.2	0.5	8.1	7.1
16	1.0	0.5	0.5	0.4	0.6	0.2	7.0	0.9	0.9	-0.1	7.3	0.0	0.2	0.6	7.0	7.3
17	1.1	0.6	0.6	0.5	0.7	0.3	6.0	0.9	1.1	-0.1	7.3	-0.1	0.3	0.7	6.0	7.3
18	1.2	0.8	0.8	0.6	0.8	0.5	5.7	1.2	1.2	0.0	7.3	0.0	0.2	0.8	5.7	7.3
19	1.4	0.9	0.9	0.7	0.9	0.6	5.2	1.5	1.4	-0.1	7.6	-0.1	0.3	1.0	5.2	7.6
20	1.7	1.2	1.3	1.0	1.2	0.8	5.0	1.6	1.7	-0.1	8.1	0.0	0.2	1.3	5.0	8.1
21	1.8	1.5	1.5	1.2	1.4	1.0	4.9	1.9	2.1	0.0	7.2	0.0	0.3	1.5	4.9	7.2
22	2.0	1.7	1.8	1.4	1.6	1.3	4.8	2.1	2.3	0.0	6.8	0.0	0.3	1.7	4.8	6.8
23	2.3	1.9	2.0	1.6	2.0	1.5	4.7	2.4	2.7	-0.1	6.9	0.1	0.3	2.0	4.7	6.9
24	2.6	2.3	2.3	1.9	2.2	1.9	4.9	2.8	3.2	0.0	6.6	0.0	0.3	2.3	4.9	6.6
25	2.9	2.7	2.8	2.2	2.6	2.3	5.0	3.4	3.6	0.1	5.8	0.1	0.3	2.6	5.0	5.8
26	3.2	3.0	3.1	2.5	2.9	2.6	5.2	3.6	4.0	0.0	5.0	0.2	0.3	2.9	5.2	5.0

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	$\Delta T_{max\ frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	1	2	3	4	5	6	7	8	9	10	11	12	13	°C	°C	°C
27	3.6	3.4	3.6	2.9	3.3	2.9	5.3	4.1	4.5	0.0	4.6	0.4	0.3	3.4	5.3	4.6
28	3.9	3.9	4.1	3.4	3.7	3.3	5.6	4.5	5.0	0.0	4.0	0.5	0.3	3.8	5.6	4.0
29	4.4	4.4	4.6	3.8	4.2	3.8	6.0	5.1	5.6	0.1	3.5	0.6	0.3	4.3	6.0	3.5
30	4.8	4.9	5.1	4.2	4.7	4.3	6.5	5.6	6.2	0.1	3.0	0.8	0.2	4.7	6.5	3.0
31	5.3	5.5	5.7	4.6	5.3	4.9	6.9	6.4	7.0	0.2	2.8	1.0	0.3	5.3	7.0	2.8
32	6.1	6.2	6.5	5.3	6.0	5.6	7.4	6.9	7.6	0.3	2.6	1.1	0.4	6.0	7.6	2.6
33	6.6	6.9	7.3	5.9	6.9	6.3	8.2	7.9	8.7	0.2	2.5	1.3	0.4	6.7	8.7	2.5
34	7.3	7.8	8.2	6.5	8.0	7.1	8.9	9.0	10.0	0.3	2.5	1.5	0.4	7.6	10.0	2.5
35	8.2	8.7	9.4	7.6	9.2	8.4	9.9	9.9	10.8	0.4	2.4	1.7	0.4	8.6	10.8	2.4
36	8.9	9.8	10.5	8.6	10.4	9.6	10.9	11.0	12.1	0.5	2.6	2.0	0.5	9.7	12.1	2.6
37	9.8	11.0	11.7	9.7	11.5	11.0	12.0	12.1	13.4	0.5	2.5	2.2	0.4	10.8	13.4	2.5
38	10.8	12.1	13.0	10.9	12.7	12.4	13.0	13.2	14.5	0.5	2.5	2.4	0.4	11.9	14.5	2.5
39	12.1	13.4	14.2	12.3	13.9	13.7	14.1	14.3	15.8	0.4	2.6	2.5	0.5	13.2	15.8	2.6
40	13.0	14.4	15.4	13.2	15.0	15.0	15.0	15.7	17.3	0.3	2.7	2.6	0.5	14.2	17.3	2.7
41	13.7	15.6	16.6	13.9	15.9	16.4	16.2	16.7	18.3	0.5	2.6	2.8	0.5	15.2	18.3	2.8

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	$\Delta T_{max\ frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	1	2	3	4	5	6	7	8	9	10	11	12	13	°C	°C	°C
42	14.7	16.7	17.7	14.9	17.1	17.5	17.1	17.8	19.5	0.4	2.6	2.9	0.6	16.2	19.5	2.9
43	15.7	17.7	18.7	15.9	18.1	18.8	18.2	19.1	21.0	0.4	2.6	3.2	0.6	17.3	21.0	3.2
44	16.6	18.8	20.0	17.1	19.2	19.9	19.3	20.2	22.4	0.4	2.9	3.8	0.5	18.4	22.4	3.8
45	17.7	19.8	20.9	18.0	20.3	21.0	20.3	21.2	23.6	0.4	2.8	3.8	0.6	19.4	23.6	3.8
46	18.7	20.9	21.9	19.1	21.3	22.0	21.3	22.3	24.9	0.3	2.9	4.0	0.4	20.4	24.9	4.0
47	19.6	21.7	22.8	20.2	22.3	22.9	22.3	23.5	26.1	0.4	3.1	4.5	0.5	21.4	26.1	4.5
48	20.5	22.7	23.8	21.1	23.0	24.0	23.5	24.4	27.1	0.4	3.0	4.6	0.6	22.3	27.1	4.6
49	21.4	23.5	24.7	21.7	24.1	24.8	24.6	25.3	28.3	0.5	3.1	4.9	0.6	23.1	28.3	4.9
50	22.2	24.3	25.7	22.9	25.3	25.8	25.6	26.4	29.9	0.4	3.3	5.3	0.6	24.1	29.9	5.3
51	23.0	25.3	26.6	23.2	26.1	26.9	26.7	27.4	31.0	0.5	3.2	5.4	0.7	24.8	31.0	5.4
52	24.1	26.1	27.6	24.1	27.6	28.7	27.7	28.4	32.9	0.6	3.7	5.9	0.9	25.9	32.9	5.9
53	25.1	27.0	28.7	25.2	29.5	32.2	28.9	29.5	34.9	0.5	4.2	5.8	0.9	27.1	34.9	5.8
54	26.3	27.8	29.9	26.1	32.3	37.7	30.0	30.6	37.2	0.5	4.6	6.3	0.9	28.4	37.7	6.3
55	27.7	28.8	31.7	26.6	36.7	48.3	31.5	32.0	40.8	0.5	5.2	5.9	1.0	30.3	48.3	5.9
56	30.4	29.8	34.4	27.5	44.4	62.7	33.7	33.3	46.8	0.7	5.7	6.7	1.0	33.3	62.7	6.7

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	$\Delta T_{max\ frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	1	2	3	4	5	6	7	8	9	10	11	12	13	°C	°C	°C
57	35.0	31.0	38.9	28.7	54.6	70.4	37.1	35.1	53.8	0.7	7.0	7.2	1.1	37.6	70.4	7.2
58	51.3	32.2	48.0	29.3	59.1	71.3	46.9	38.3	60.0	0.7	8.1	7.6	1.3	44.0	71.3	8.1
59	63.6	33.9	62.6	30.1	62.3	67.9	63.9	44.1	62.9	0.9	8.8	8.7	1.6	50.5	67.9	8.8
60	67.7	35.9	69.1	31.7	64.0	66.0	70.3	56.0	62.9	0.9	8.9	9.7	1.5	53.7	70.3	9.7
61	70.5	39.0	69.8	33.3	65.4	67.9	71.5	68.6	63.1	0.9	9.8	10.9	1.7	55.6	71.5	10.9
62	70.9	43.1	69.9	35.3	66.0	70.3	70.8	71.4	64.2	1.1	10.3	13.9	1.7	57.0	71.4	13.9
63	71.3	48.3	69.9	37.9	66.0	70.7	65.3	73.1	65.9	1.2	10.8	15.1	1.8	58.7	73.1	15.1
64	70.8	53.5	69.9	41.5	66.5	69.9	66.5	76.3	68.4	1.3	12.7	24.0	2.1	60.4	76.3	24.0
65	67.5	58.1	69.6	47.2	66.4	69.0	69.6	104.1	68.4	1.6	15.3	25.4	2.3	61.8	104.1	25.4
66	66.8	61.0	69.9	54.3	67.2	69.0	70.3	99.5	69.2	1.8	21.7	39.3	2.3	63.9	99.5	39.3

Table 14. Door 2

Elapsed time	*TEMPERATURE RISE AT POINTS, °C*													ΔT_{avg} *pts.: 14-18,*	ΔT_{max} *pts.: Std. 14-22*	$\Delta T_{ma\ frame}$ *pts.: 23-26*
	Standard procedure															
	Doorset									*Frame*						
	14	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*°C*	*°C*	*°C*
0	-0.1	0.2	0.2	0.5	-0.2	-0.1	0.0	0.0	-0.1	0.0	-0.3	0.1	-0.3	0.1	0.5	0.1
1	-0.1	0.3	0.3	0.4	-0.1	0.0	0.1	0.0	-0.2	0.0	-0.4	0.8	-0.2	0.2	0.4	0.8
2	-0.1	0.2	0.1	0.5	-0.1	0.0	0.1	0.1	-0.1	0.0	-0.4	0.8	-0.2	0.1	0.5	0.8
3	-0.1	0.3	0.4	0.4	-0.1	0.0	0.2	0.2	-0.1	0.0	-0.4	0.8	-0.2	0.2	0.4	0.8
4	0.0	0.3	0.3	0.6	-0.1	0.0	0.1	0.1	0.0	0.0	-0.2	0.7	-0.2	0.2	0.6	0.7
5	-0.1	0.2	0.4	0.5	-0.1	0.1	0.2	0.3	0.0	0.0	-0.3	1.0	-0.1	0.2	0.5	1.0
6	0.0	0.2	0.3	0.5	-0.1	0.0	0.2	0.2	-0.1	0.2	-0.2	2.1	-0.2	0.2	0.5	2.1
7	0.0	0.3	0.3	0.6	-0.1	0.1	0.2	0.2	0.0	0.1	0.0	4.4	-0.2	0.2	0.6	4.4
8	0.2	0.5	0.5	0.6	-0.1	0.1	0.3	0.3	0.0	0.1	0.4	7.7	-0.2	0.3	0.6	7.7
9	0.0	0.3	0.3	0.6	0.0	0.1	0.2	0.3	0.0	0.5	0.4	6.7	0.0	0.2	0.6	6.7
10	0.1	0.5	0.3	0.7	0.0	0.2	0.3	0.3	0.1	0.5	0.6	7.5	-0.1	0.3	0.7	7.5
11	0.1	0.5	0.4	0.5	0.0	0.2	0.3	0.4	0.0	0.3	0.6	7.4	-0.1	0.3	0.5	7.4
12	0.1	0.5	0.5	0.7	0.0	0.2	0.4	0.3	0.0	0.2	0.6	5.5	-0.2	0.4	0.7	5.5
13	0.1	0.5	0.5	0.8	0.1	0.4	0.4	0.4	0.1	0.3	0.5	6.9	-0.1	0.4	0.8	6.9

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 14-18,	ΔT_{max} pts.: Std. 14-22	$\Delta T_{max\ frame}$ pts.: 23-26
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
14	0.1	0.5	0.5	0.7	0.2	0.7	0.4	0.4	0.2	0.3	0.5	7.1	-0.1	0.4	0.7	7.1
15	0.3	0.7	0.7	0.8	0.1	0.9	0.5	0.4	0.2	0.2	0.5	6.3	-0.2	0.5	0.9	6.3
16	0.3	0.7	0.7	0.8	0.2	1.0	0.4	0.6	0.3	0.2	0.4	7.8	-0.1	0.5	1.0	7.8
17	0.4	0.8	0.7	0.9	0.4	1.2	0.7	0.7	0.4	0.2	0.4	7.0	-0.1	0.6	1.2	7.0
18	0.6	0.9	0.8	1.0	0.5	1.3	0.8	0.8	0.5	0.2	0.4	6.3	-0.1	0.8	1.3	6.3
19	0.8	1.1	1.1	1.1	0.7	1.6	1.0	1.0	0.7	0.2	0.5	5.9	-0.1	1.0	1.6	5.9
20	1.0	1.3	1.3	1.3	0.8	1.8	1.2	1.3	0.9	0.2	0.8	5.6	0.0	1.1	1.8	5.6
21	1.1	1.5	1.4	1.4	1.0	2.3	1.4	1.5	1.2	0.3	0.8	5.4	-0.1	1.3	2.3	5.4
22	1.6	1.8	1.8	1.7	1.3	2.7	1.7	1.7	1.4	0.4	1.1	5.0	0.0	1.6	2.7	5.0
23	1.9	2.0	2.0	1.8	1.6	3.2	2.1	2.1	1.7	0.3	1.1	4.4	-0.1	1.9	3.2	4.4
24	2.1	2.5	2.4	2.1	1.9	3.8	2.4	2.5	2.0	0.3	1.5	4.8	0.0	2.2	3.8	4.8
25	2.4	2.8	2.7	2.1	2.2	4.3	2.8	2.8	2.4	0.4	1.7	4.6	-0.1	2.4	4.3	4.6
26	3.0	3.2	3.1	2.6	2.7	4.8	3.0	3.3	2.9	0.9	2.0	5.2	0.0	2.9	4.8	5.2
27	3.4	3.6	3.7	3.0	3.1	5.5	3.6	3.8	3.3	0.9	2.2	5.5	-0.1	3.4	5.5	5.5
28	3.8	4.1	4.1	3.2	3.5	6.1	4.2	4.3	3.7	0.7	4.5	6.1	0.0	3.7	6.1	6.1

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 14-18,	ΔT_{max} pts.: Std. 14-22	$\Delta T_{max\ frame}$ pts.: 23-26
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
29	4.5	4.6	4.5	3.5	4.0	6.9	4.7	4.8	4.3	0.7	4.9	6.2	0.0	4.2	6.9	6.2
30	5.0	5.1	5.0	3.9	4.6	7.8	5.3	5.5	4.9	0.6	6.3	6.2	0.2	4.7	7.8	6.3
31	5.6	5.8	5.7	4.0	5.1	8.7	5.6	6.0	5.6	2.2	6.3	6.8	0.2	5.2	8.7	6.8
32	6.5	6.5	6.5	4.7	5.8	9.6	6.3	6.8	6.5	1.5	6.3	6.3	0.2	6.0	9.6	6.3
33	7.4	7.3	7.3	5.5	6.7	10.8	7.1	7.6	7.3	1.3	6.5	6.6	0.2	6.8	10.8	6.6
34	8.5	8.3	8.3	6.1	7.7	11.8	8.0	8.6	8.4	1.3	7.3	6.8	0.3	7.8	11.8	7.3
35	9.6	9.3	9.4	6.6	8.6	13.1	9.0	9.6	9.7	1.4	8.3	6.8	0.6	8.7	13.1	8.3
36	10.7	10.3	10.4	7.5	9.7	14.3	9.8	10.7	10.8	1.5	9.5	7.1	0.7	9.7	14.3	9.5
37	12.0	11.3	11.3	8.5	11.1	15.8	10.8	12.0	12.0	1.6	10.0	7.2	0.5	10.9	15.8	10.0
38	13.0	12.4	12.4	9.1	12.2	17.1	11.8	13.1	13.2	1.8	10.6	7.4	0.6	11.8	17.1	10.6
39	14.3	13.5	13.5	10.1	13.3	18.5	12.9	14.3	14.3	1.7	10.3	8.0	0.8	13.0	18.5	10.3
40	15.5	14.5	14.7	10.7	14.4	19.8	14.1	15.6	15.6	1.8	10.1	8.3	1.2	14.0	19.8	10.1
41	16.5	15.4	15.7	10.9	15.6	21.3	14.8	16.7	16.7	2.1	10.1	9.0	1.1	14.8	21.3	10.1
42	17.7	16.6	16.6	12.0	16.5	22.9	15.9	17.7	17.9	2.1	9.7	9.3	1.6	15.9	22.9	9.7
43	18.8	17.4	17.7	11.9	17.7	24.5	17.0	18.9	19.0	2.1	9.3	9.7	1.9	16.7	24.5	9.7

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 14-18,	ΔT_{max} pts.: Std. 14-22	$\Delta T_{max\ frame}$ pts.: 23-26
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
44	19.9	18.3	18.6	12.9	18.7	25.8	17.7	19.9	20.1	2.8	10.7	10.2	1.5	17.7	25.8	10.7
45	21.0	19.3	19.6	13.8	19.7	27.0	18.7	20.8	21.0	2.8	12.3	10.3	1.6	18.7	27.0	12.3
46	22.0	20.2	20.8	14.5	20.7	28.6	19.7	21.8	22.1	2.7	12.3	10.7	1.6	19.7	28.6	12.3
47	23.2	21.1	21.9	15.1	21.9	30.2	20.7	22.7	23.1	3.0	13.1	10.9	1.7	20.7	30.2	13.1
48	24.3	22.0	22.9	15.5	22.9	31.5	21.5	23.7	24.1	3.6	12.5	11.5	1.7	21.5	31.5	12.5
49	25.3	22.9	23.9	15.7	23.7	32.8	22.4	24.8	25.1	3.9	13.8	11.6	1.6	22.3	32.8	13.8
50	26.4	24.0	25.0	16.8	24.7	34.5	23.5	25.9	26.2	3.7	15.7	12.0	2.0	23.4	34.5	15.7
51	27.6	24.9	25.8	18.4	25.8	36.0	24.4	26.8	27.2	4.0	16.6	12.3	2.3	24.5	36.0	16.6
52	29.0	26.0	26.8	15.7	26.7	37.3	25.3	27.8	28.4	4.5	17.8	12.6	2.3	24.8	37.3	17.8
53	30.7	27.0	27.9	17.9	27.9	38.7	26.4	28.7	29.8	4.6	18.8	12.8	2.4	26.3	38.7	18.8
54	32.9	28.7	28.7	19.7	29.0	40.7	27.5	29.8	31.9	4.7	20.7	12.9	2.7	27.8	40.7	20.7
55	37.1	30.3	29.9	21.5	30.3	42.5	28.8	31.0	34.9	5.1	20.6	13.3	2.8	29.8	42.5	20.6
56	45.3	32.1	31.3	27.3	32.0	44.8	30.7	32.6	40.4	5.4	20.3	13.5	3.1	33.6	45.3	20.3
57	55.8	34.6	32.9	30.5	34.2	47.7	33.3	35.2	48.3	6.0	20.0	14.5	3.2	37.6	55.8	20.0
58	64.9	36.6	35.1	36.0	36.9	52.9	35.5	38.3	54.6	6.0	24.9	16.6	3.7	41.9	64.9	24.9

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 14-18,	ΔT_{max} pts.: Std. 14-22	$\Delta T_{max\ frame}$ pts.: 23-26
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
59	69.1	39.2	40.0	36.3	40.3	58.6	38.1	39.7	60.2	6.8	21.9	17.3	3.6	45.0	69.1	21.9
60	71.0	42.2	49.7	38.3	44.2	66.1	40.0	42.5	64.7	7.0	22.5	19.3	3.7	49.1	71.0	22.5
61	72.0	45.9	57.5	38.5	50.7	74.0	42.8	45.5	70.4	7.9	22.1	20.9	4.3	52.9	74.0	22.1
62	72.2	51.6	61.4	40.6	60.0	75.8	46.2	48.7	72.3	8.4	22.9	21.0	4.5	57.2	75.8	22.9
63	72.6	56.9	63.4	38.9	65.4	76.0	52.9	55.0	73.4	9.8	26.1	22.8	5.4	59.4	76.0	26.1
64	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
65	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
66	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/

*Note: */ - Thermocouples were disconnected at 64 minutes due to integrity failure.*

6 PHOTOGRAPHS

6.1 Unexposed side view of the test specimens

Photo 1. Before the test.

Photo 2. Test specimen at 10-minutes

Photo 3. Test specimen at 20-minutes

Photo 4. Test specimen at 30-minutes

Photo 5. Test specimen at 40-minutes

Photo 6. 50-minutes of the test

Photo 7. 60-minutes of the test

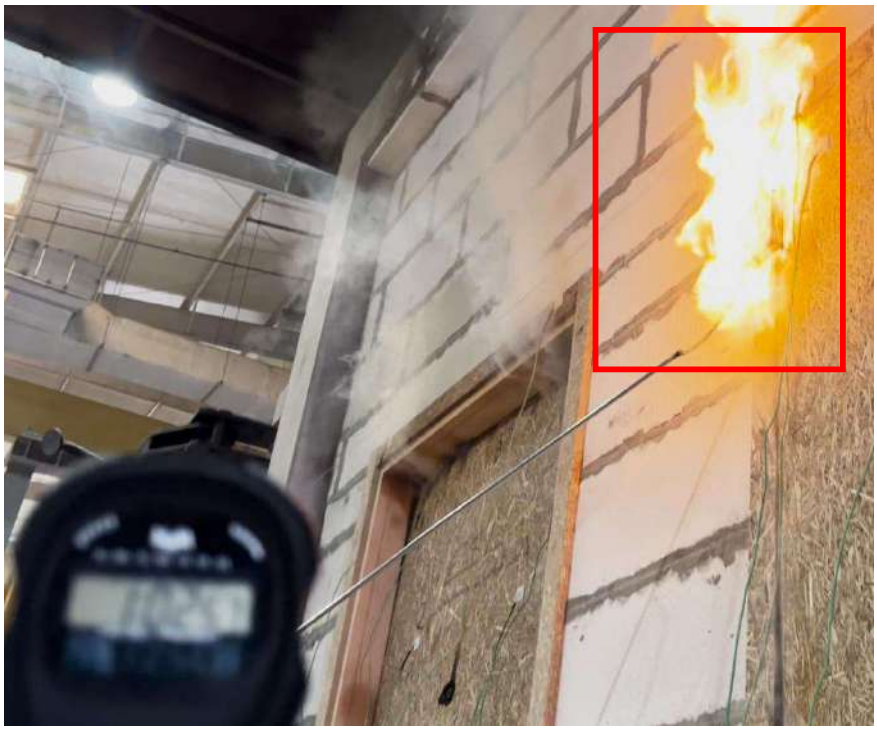


Photo 8. 62[57] minutes of the test. Cotton pad ignition at the upper left vertical edge of the leaf – Door 2.

Photo 9. 64[58] minutes of the test. Sustained flaming at the upper left vertical edge of the leaf – Door 2.

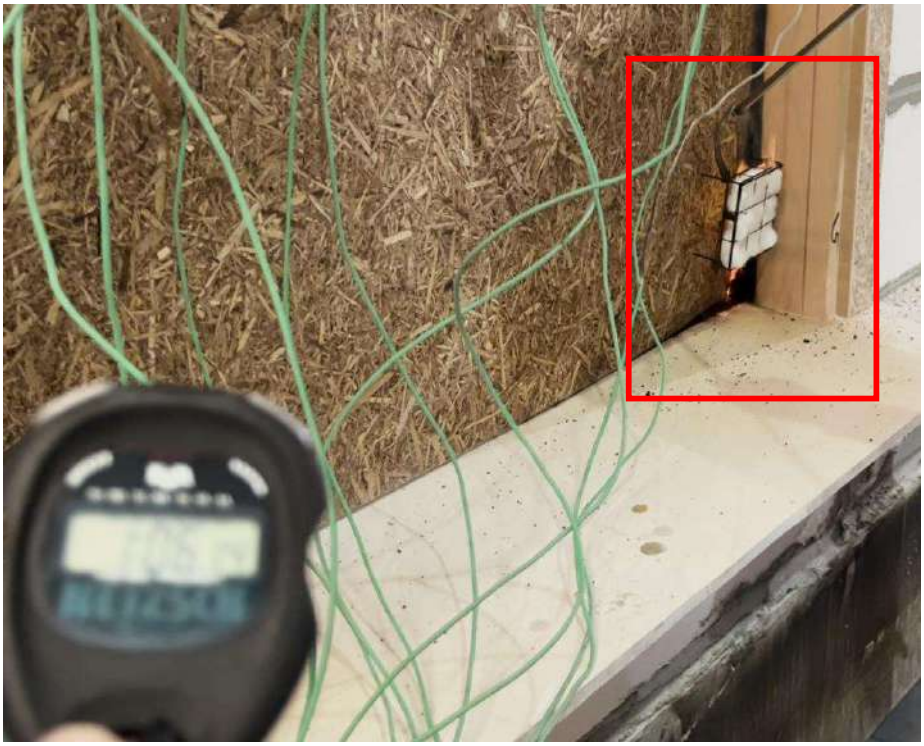


Photo 10. 66[14] minutes of the test. Cotton pad ignition at the bottom right vertical edge of the leaf – Door 1.

Photo 11. End of the test

6.2 Exposed side view of the test specimens

Photo 12. Before the test

7 SUMMARY OF TEST RESULTS

Results of fire resistance test of the "Latched, Single-Leaf, fire-rated PSB wooden door with hardwood frame – EuroArt Hardware set" type presented in Tables 1-15, Graphs 1-4, Figures 1-6, and Photo 1-12 refer only to the construction described in clause 3 of herein test report.

Table 15. Summary of the test results

Performance criteria	Description of the criterion requirements	Time and location of criterion failure		Test result	
		Door 1	Door 2	Door 1	Door 2
Integrity	Sustained flaming	No failure	No failure	**66 minutes**	**62 minutes**
	Gaps disqualifying the product	No failure	No failure		
	Ignition of the cotton pad	**66[14]** Cotton pad ignition at the bottom right vertical edge of the leaf.	**62[57]** Cotton pad ignition at the upper left vertical edge of the leaf.		
Insulation *(Standard procedure)*	Average temperature rise (≤140 °C)	No failure	No failure	**66 minutes** [(1)]	**62 minutes** [(1)]
	Maximum temperature rise (≤180°C)	No failure	No failure		
	Maximum temperature rise at the door frame (≤360°C)	No failure	No failure		
Maximum Deflection				**-29mm in Point E at 60th minute**	**-46mm in Point L at 60th minute**
Duration of the test: 66 minutes					

[(1)] EN 1363-1 describes the privilege of the integrity failure against the insulation: insulation" shall automatically be assumed not to be satisfied when the "integrity" criterion ceases to be satisfied (EN 1363-1; Clause 11.4.2.).

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of the measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

This report details the method of construction, the test conditions, and the results obtained when the specific element of construction described herein was tested following the procedure outlined in EN 1363-1. Any significant deviation with respect to size, constructional details, loads, stresses, edge, or end conditions other than those allowed under the field of direct application contained in the EN 1634-1 standard is not covered by this test report.

8 FIELD OF DIRECT APPLICATION OF TEST RESULTS

8.1 General

This is valid for the direct field of application of the test results Latched, Single Action, Single Door Fire-Rated PSB Wooden door with hard wood frame – Laidlaw Hardware set, in which the following changes can be made, according to clause 13 of EN1634-1:2014+A1: 2018. The field of direct application defines the allowable changes to the test specimens following a successful fire resistance test. These variations can be applied automatically without the need for the sponsor to seek additional evaluation, calculation, or approval.

8.2 Materials and construction

8.2.1 General

Unless otherwise stated in the following text, the materials and construction of the doorset or openable window shall be the same as that tested. The number of leaves and the mode of operation (e.g. sliding, single action or double action) shall not be changed.

8.2.2 Specific restrictions on materials and construction

8.2.2.1 Timber construction

The thickness of the door panels shall not be reduced but may be increased.

The door panel thickness and/or density may be increased provided the total increase in weight is not greater than 25 %.

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.

8.2.3 Decorative finishes

8.2.3.1 Paint

Where the paint finish is not expected to contribute to the fire resistance of the door, alternative paints are acceptable and may be added to door leaves or frames for which unfinished test specimens were tested. Where the paint finish contributes to the fire resistance of the door (e.g. intumescent paints) then no change shall be permitted.

8.2.3.2 Decorative laminates

Decorative laminates and timber veneers up to 1,5 mm thickness may be added to the faces (but not the edges) of doors that satisfy the insulation criteria (normal or supplementary procedure).

Decorative laminates and timber veneers applied to door leaves that do not satisfy the insulation criteria (normal or supplementary procedure) and/or those in excess of 1,5 mm thickness shall be tested as part of the test specimen. For all doorsets tested with decorative laminate faces, the only variations possible shall be within similar types and thicknesses of material (e.g., for color, pattern, and supplier).

8.2.3.3 Fixings

The number of fixings per unit length used to attach doorsets to supporting constructions may be increased but shall not be decreased and the distance between fixings may be reduced but shall not be increased.

8.2.4 Building hardware

The number of hinges may be increased but shall not be decreased.
NOTE 1: The number of movement restrictors such as locks and latches are not covered by direct application.

The doorset may be installed only with the door closer fixed to each door leaf.
NOTE 2: Interchange of building hardware is not covered by the field of direct application.

8.3 Permissible size variations

8.3.1 General

Doorsets of sizes different from those of tested specimens are permitted within certain limitations, but the variations are dependent on product type and the length of time that the performance criteria are fulfilled.

The increase and decrease of dimensions permitted by the field of direct application are applicable to the overall size and to each door leaf, each side panel and each over panel independently.

The dimensions (width and height) of any glass pane cannot be increased.

8.3.2 Test periods

The amount of variation of size permitted is dependent on whether the classification time was just reached (Category 'A') or whether an extended time (Category 'B') in accordance with the values shown Table 16.

Table 16 —Overrun time requirements

Classification time **Category A**	**Overrun time** *(all criteria must be fulfilled)* **Category B**
60min.	68min.

The Test Element fulfilled integrity criteria for **62 minutes only** (as a product tested from both sides). The tested doorset was opening inside and outside the furnace.

Therefore, the Test Specimen achieved Category A classification time and did not fulfill the criteria Category B as per Table 16.

8.3.3 Size variation of hinged and pivoted doorsets and openable window

Unlimited size reduction is permitted for all types except insulated metal doors where a reduction to 50 % width and 75 % height of the tested specimen is the limit of variation.

Size increase is not permitted.

8.3.4 Other changes

For smaller doorset sizes, the relative positioning of movement restrictors (e.g., hinges and security pin) 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 test specimen size.

8.3.5 Timber constructions

The number, size, location and orientation of any joints in the timber framing shall not be changed.

Where decorative veneers of 1,5 mm or greater thickness, or other claddings which themselves provide constructive benefits, are part of the test specimen, they shall not be substituted with alternatives of lesser thickness or strength.

8.3.6 Gaps

The maximum size of the primary gaps is restricted to the following sizes in practice:

Table 17

GAPS			*Measurements, mm*		
			Average	***Maximum***	***Permitted gap size***
Door 1 & Door 2	Along the horizontal edges	At the top	2.9	3.7	5.0
		At the bottom	2.9	4.0	5.1
	Along the vertical edges	Hinge side	2.7	3.4	4.9
		Latch edge	2.2	2.7	4.3

8.4 Supporting constructions

8.4.1 General

The Fire resistance of a doorset tested in 150mm thick low-density rigid standard supporting construction (autoclaved aerated concrete blocks), as specified in EN 1363-1, can be applied to a doorset mounted in the same manner in a wall provided the density and the thickness of the wall are equal to or greater than that in which the door was tested.

8.4.2 Specific rules for hinged or pivoted doorsets

For timber door leaves hung in timber frames, the result of a test in a rigid standard supporting construction applies to that door assembly mounted in a flexible construction.

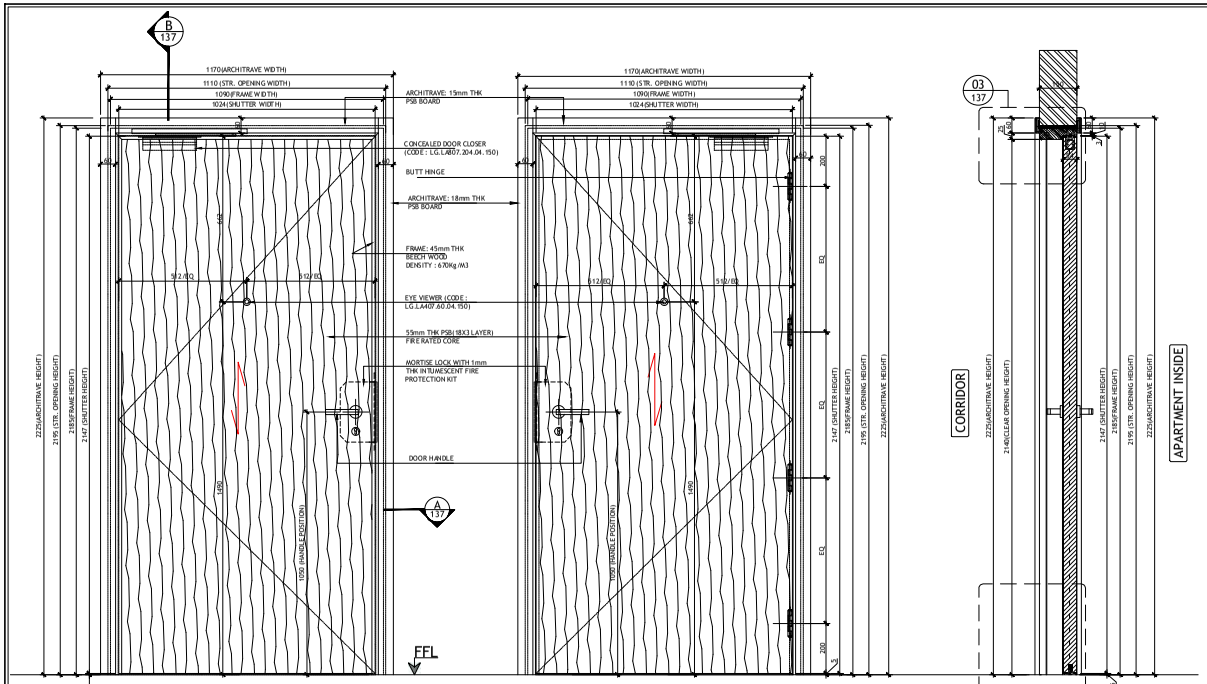
Note: The rules above assume that the fixing methods used in each type of supporting construction are appropriate to that construction.

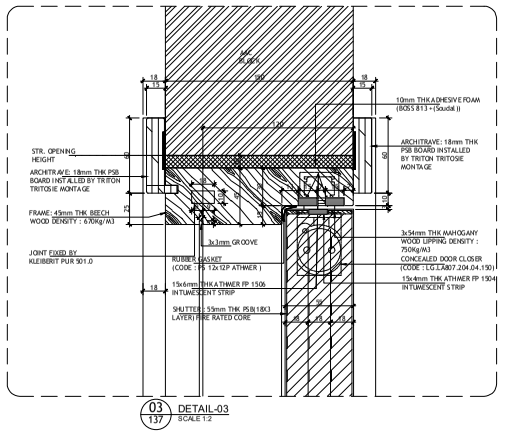
Further details of the field of direct application of test results are described in EN 1634-1:2014+A1:2018.

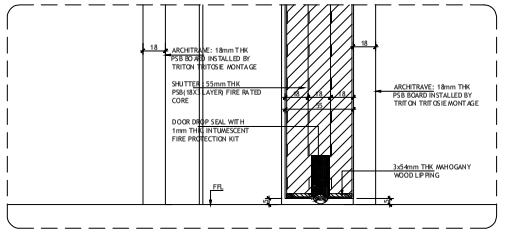
9 DRAWINGS

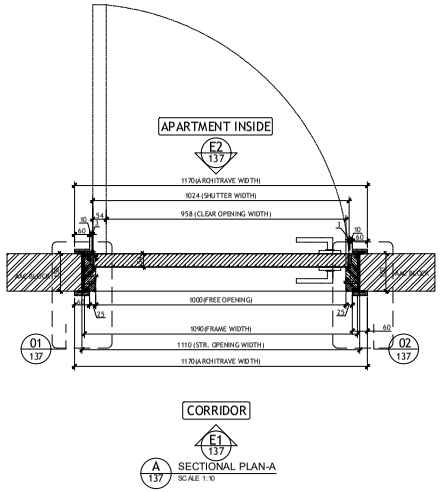
The unpaginated document is a copy of the drawings from Abanos Furniture and Decoration Industries LLC, specifically the drawing reference ID:

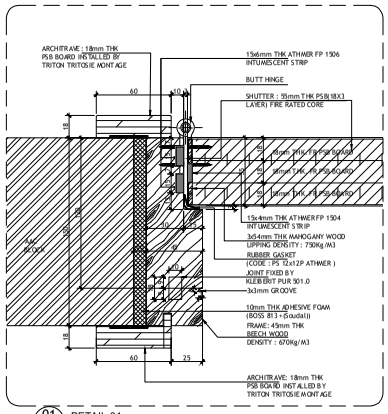
- No. ABS00084-STD-FR-60-PSB-137 R02 (dated 11-12-2024)

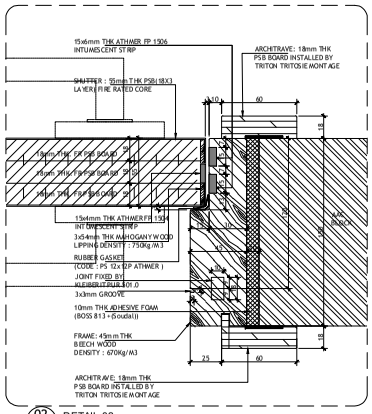












HARDWARE Set

Qty	UOM	Ref. No.	Size / Material & Finishes / Description / Fixing	Source	Finish	U. Price	Image
4	pc	LG.LA160.102.01.183W	LGAI 2-Ball Bearing Butt Hinge, size 102 x 76 x 3mm, 5 knuckles square corner. Tested and Certified to BS EN 1935 Grade 13, with classification code 4-7-5-1-4-4-0-13. CE marked, with Certifire Certificate no. CPR456, suitable for use on fire rated doors, 120 min. for Timber and 240 min. for steel. Supplied with fixing screws for wood door. Stainless Steel Grade 304, Satin finish.	Laidlaw Gulf	SSS		
4	pc	ITH-102x76-1mm	Intumescent Kit for Butt Hinge size 102mm x 76mm (supplied as 2 pcs 100mm x 30mm x 1mm). Self adhesive. White color	Laidlaw Gulf	White		
1	set	LG.LA807.204.04.150	LGAI Overhead Concealed Door Closer, power size EN 2 to 4, CAM Action mechanism, adjustable closing speed and latching action, non handed, suitable for minimum 40mm door thickness. Certified to BS EN 1154, Tested to BS EN 1634-1. Supplied with Slide Channel and Arm in Satin Nickel Plated finish	Laidlaw Gulf	SNP		
1	set	ITD-LA807-1mm	Intumescent Kit suitable for LA807 concealed closer size EN 2-4. Supplied as 2 part kit 1mm thick around closer body and guide rail. Self adhesive. White color	Laidlaw Gulf	White		
1	pc	LG.LA60.5572.01.150	LGAI Mortise Sashlock, 55mm backset, 72mm europrofile centres, 20mm double throw deadbolt, 24mm single piece square forend, non-handed, with quick reversible latchbolt. Certified and tested to BS EN 12209, CE marked, suitable for fire rated doors. Supplied with strike plate and bolt through hardware fixings. Stainless Steel Grade 304, Satin finish.	Laidlaw Gulf	SSS		
1	set	ITL-160X90-1mm	Intumescent Kit for standard DIN upright mortise Lock case size 160mm X 90mm with 55mm backset and 72mm centres. Supplied as 1 part kit 1mm thick around lock body and strike plate. Self adhesive. White color	Laidlaw Gulf	White		
1	pc	LG.LA212E.60.E.04	LGAI Double Cylinder, 60mm length (40/40mm), Euro-profile 6 pins, for standard or Fire Rated cylinder locks. With Anti-Pick, Anti-Bump, Anti-Drill, and Anti-Plug features. Tested to BS EN 1303. Standard differ. Supplied with 3 differ keys (dimpled). Satin Nickel plated finish	Laidlaw Gulf	SNP		
1	pr	LG.LA 54 204.6	LGAI Range Lever Handle on round rose, size 19mm X 127mm, "FLAT" investment cast, with concealed bolt through fixings, with sprung roses and escutcheon size 53mm diameter X 8mm depth. Stainless steel Grade 304, Satin finish.	Laidlaw Gulf	SSS		
1	pc	LG.LA407.60.04.150	LGAI Door Viewer, 200 degree with glass lens and cover cap. Suit doors up to 60mm. Satin Nickel Plated finish.	Laidlaw Gulf	SNP		
1	set	PS 1212 P-Single Leaf(Light Brown)	Perimeter Seal set for single leaf door, flexible and rigid PVC, self adhesive, size 12mm X 12mm, Light Brown color, consisting of 2 pcs 2200mm length and 1 pc 1100mm length.	Athmer	Light Brown		
1	pc	AD-153-1030	Isolporte Standard Silicone single action Automatic Drop Seal 1030mm length (can be cut back to 905mm)	Athmer	Alum		
1	pc	1mm Graphite Liner	1mm Intumescent kit with self adhesive tape back	Athmer			

KEY PLAN

NAKKAH | NORTH

NOTES:

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CONSULTANT STATUS:

Approved	A
Approved as noted	B
Not Approved - Resubmit	C
Information Record	E

REFERENCE DOCUMENT:

SN	DATE	DRAWING / DOCUMENT NO.	REV.

REVISION SCHEDULE

Rev	Date	Description	By
02	10.02.2025	ISSUED FOR APPROVAL	AJ
01	17.12.2024	ISSUED FOR APPROVAL	AJ
00	11.12.2024	ISSUED FOR APPROVAL	AJ

Sub-Contractor :

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Purpose of Issue: **SHOP DRAWING**

Drawing Title:

TYPICAL DETAIL OF ENTRANCE DOOR TYPE-D01 (60Min. FIRE RATED DOOR)

DRAWING NUMBER				Revision
ABS00084-STD-FR-60-PSB-137				02
Project No.	Date	Scale	Drawn	Checked
-	11-12-2024	@ 1 : 10	AJ	AS

Ver-1.2

10 ATTACHMENTS

Technical documentation

- Beechwood Hardwood
- Desert Board, PSB
- African Mahogany wood
- Kleiberit reactive PUR Hotmelt 707.9
- Kleiberit 501.0 PUR adhesive
- Atmer PS1212P - Corner seal
- Atmer FP 1506 Intumescent seal
- Atmer FP 1504 Intumescent seal
- Boss 813+
- Ritver wood glue
- Trisol Montage sealant/adhesive
- Ironmongery

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PRODUCT SHEET

SAWN LUMBER

BEECH

GENERAL DESCRIPTION	
Merchandize Category	Lumber
Timber Species	Beech (Fagus Sylvatica L.)
Unit of Measurement	Cubic Metre (CBM)
Hardness	From medium to high for the green one, medium for the dried one (Brinell: 71 N/mm2 II to the grain, 28 N/mm2 T to the grain)
Dimensional Stability	Medium
Oxidation	Low
Tonality	White yellowish for the green one, more or less intense pinkish to light-brown for the dried one
Histological Structure	Straight and sometimes helicoidal grain, fine and uniform texture

ESSENTIAL FEATURES	PERFORMANCE
Density	730 kg/m³ dried- 1050 kg/m³ green
Shrinkage	Radial 5,5%, Tangential 11,9 %
Modulus of Elasticity	8350- 19400 MPa
Tensile Strength	130-160 MPa
Compressive Strength	38-78,5 MPa
Shear Strength	7-10,3 MPa
Flexural Strength	68-149 MPa
Biological Durability	Classes: 5 Fungi, S Anobium, S Termite
Impregnation	Classes: 1v Heartwood, 1 Sapwood

Source: G. Giordano-Tecnologie del legno; Lignum; CTBA. Wood humidity: between 10 and 20% dried Reference Regulations: UNI EN 942 Timber in joinery-General requirements, UNI EN 350 Durability of wood and wood-based products

QUALITY DESCRIPTION:

Appearance class: Special S, Special One Face, Special CDN, Special Cabinet, Special Cabinet CND.

- Special S: top-quality, low knottiness allowed, uniform evaporation
- Special One Face: top-quality for single face applications, with a very high yield, no restrictions on the back face for colour and knots
- Special CDN : high-quality, without colour restrictions, low knottiness allowed on one face
- Special Cabinet: ideal product to get medium- and short-length elements, uniform colour, high knottiness allowed
- Special Cabinet CND: ideal product to get medium and short-length elements, non-uniform colour, high knottiness allowed

A and A/B quality un-edged boards (Without trimming) are also available.

DIMENSION:

- Random widths and lengths
- Thicknesses: 26 mm / (23,8 mm); 33 mm / (30,5 mm); 38 mm / (36 mm); 47 mm / (45 mm); 52 mm /(48,5 mm); 65 mm / (61,5 mm); 76-80 mm (on demand) and other depending on the availability

FLORIAN

PRODUCT SHEET

MAIN USES:

It is extremely versatile and can be used for solid and laminated furniture, flooring, ceiling, doors. Additionally, it can be used for musical instruments, domestic wood ware, packages, crates and boxes.

WORKING PROPERTIES:

Sawing is easy, drying is slow, with special attention to wrap; with a humid environment it is more flexible and subject to fungi attacks that might alter the color; planning is easy, gluing, nailing and screwing are trouble free; finishing confers excellent results and can adopt almost every tone.

CERTIFICATIONS:

There is the possibility to ask for FSC® certified products.

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florian legno

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DesertBoard.

PALM STRAND BOARD (PSB®)
TECHNICAL DATA

PSB® PRIME - TECHNICAL DATA

Discover PSB® Prime, zero-formaldehyde, high-strength moisture resistant PSB® Board, engineered to withstand moisture-prone environments. Perfect for various construction needs, including wall partitions, furniture, and cabinets, where durability against moisture is essential.

PSB® Prime

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²
9	850	20	2500	10	1200	0.34	20	2 - 12%	NA
10	850	20	2500	10	1200	0.34	20	2 - 12%	NA
12	800	18	2500	9	1200	0.32	20	2 - 12%	NA
15	800	18	2500	9	1200	0.32	20	2 - 12%	NA
16	800	18	2500	9	1200	0.32	20	2 - 12%	NA
18	800	16	2500	8	1200	0.30	20	2 - 12%	NA
20	800	16	2500	8	1200	0.30	20	2 - 12%	NA
22	800	16	2500	8	1200	0.30	20	2 - 12%	NA
25	800	16	2500	8	1200	0.30	20	2 - 12%	NA

PSB® ECO CORE - PRIME - TECHNICAL DATA

Experience PSB® EcoCore, zero-formaldehyde, highstrength, moisture-resistance Door Core offering structural integrity and durability. Ideal as a core material in doors where high strength and formaldehyde-free composition are prerequisites.

PSB® ECO CORE - PRIME

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²
30	800	14	2500	7	1200	0.29	20	2 - 12%	NA
32	750	12	2500	6	1200	0.29	20	2 - 12%	NA
33	750	12	2500	6	1200	0.26	20	2 - 12%	NA
35	750	12	2500	6	1200	0.26	20	2 - 12%	NA
38	750	12	2500	6	1200	0.26	20	2 - 12%	NA
39	700	12	2500	6	1200	0.26	20	2 - 12%	NA
40	700	12	2500	6	1200	0.26	20	2 - 12%	NA
42	700	10	2500	5	1200	0.23	20	2 - 12%	NA
44	650	10	2500	5	1200	0.23	20	2 - 12%	NA
45	650	10	2500	5	1200	0.23	20	2 - 12%	NA

PSB® SUPREME - TECHNICAL DATA

Introducing PSB® Supreme, zero-formaldehyde, high-strength board with high moisture resistance. Tailored for areas susceptible to moisture, such as kitchens and bathrooms, it's an ideal choice for interior and select exterior applications where reliable moisture protection is paramount.

PSB® SUPREME

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²
9	850	22	3500	11	1400	0.34	15	2 - 12%	0.15
10	850	22	3500	11	1400	0.34	15	2 - 12%	0.15
12	800	20	3500	10	1400	0.32	15	2 - 12%	0.13
15	800	20	3500	10	1400	0.32	15	2 - 12%	0.13
16	800	20	3500	10	1400	0.32	15	2 - 12%	0.13
18	800	18	3500	9	1400	0.30	15	2 - 12%	0.12
20	800	18	3500	9	1400	0.30	15	2 - 12%	0.12
22	800	18	3500	9	1400	0.30	15	2 - 12%	0.12
25	800	18	3500	9	1400	0.30	15	2 - 12%	0.12

PSB® ECO CORE - SUPREME- TECHNICAL DATA

Discover PSB® EcoCore, zero-formaldehyde, high-strength,high-moisture resistance Door Core offering structural integrity and durability. Ideal as a core material in doors where high strength and formaldehyde-free composition are prerequisites.

PSB® ECO CORE - SUPREME

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²
30	800	16	3500	8	1400	0.29	15	2 - 12%	0.06
32	750	14	3500	7	1400	0.29	15	2 - 12%	0.06
33	750	14	3500	7	1400	0.26	15	2 - 12%	0.05
35	750	14	3500	7	1400	0.26	15	2 - 12%	0.05
38	750	14	3500	7	1400	0.26	15	2 - 12%	0.05
39	700	14	3500	7	1400	0.26	15	2 - 12%	0.05
40	700	14	3500	7	1400	0.26	15	2 - 12%	0.05
42	700	12	3500	6	1400	0.23	15	2 - 12%	0.04
44	650	12	3500	6	1400	0.23	15	2 - 12%	0.04
45	650	12	3500	6	1400	0.23	15	2 - 12%	0.04

PSB® ULTRA / CONFORM - TECHNICAL DATA

Introducing PSB® Conform, zero-formaldehyde, high-strength, durable Concrete Formwork (Shuttering) designed for multiple usages. Used in construction for concrete formwork systems, its resilience reduces replacement frequency, providing longterm reliability.

PSB® ULTRA / CONFORM

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²
9	900	22	3500	11	1400	0.50	12	2 - 12%	0.17
10	900	22	3500	11	1400	0.50	12	2 - 12%	0.17
12	900	20	3500	10	1400	0.45	12	2 - 12%	0.15
15	900	20	3500	10	1400	0.45	12	2 - 12%	0.15
16	900	20	3500	10	1400	0.45	12	2 - 12%	0.15
18	900	18	3500	9	1400	0.40	12	2 - 12%	0.13
20	850	18	3500	9	1400	0.40	12	2 - 12%	0.13
22	850	18	3500	9	1400	0.40	12	2 - 12%	0.13
25	850	18	3500	9	1400	0.40	12	2 - 12%	0.13

PSB® FR - INTERTEK CERTIFIED - TECHNICAL DATA

Explore PSB® EcoCore FR, zero-formaldehyde, high-strength, high-moisture resistant Fire Rated Door Core. Engineered for fire-rated-door applications, this certified core material meets EN and UL10C standards, ensuring fire safety in commercial, industrial, and fire-critical structures.

PSB® FR - INTERTEK CERTIFIED

THICKNESS	UP to DENSITY	MOR (major)	MOE (major)	MOR (minor)	MOE (minor)	IB	TS 24H	MC	IB AFTER BOILING TEST	INTERTEK WN NUMBER	CERTIFIED STANDARD
(MM)	KG/M³	N/mm²	N/mm²	N/mm²	N/mm²	N/mm²	(%)	(%)	N/mm²		
9	880	20	2500	10	1200	0.30	20	2 - 12%	NA	WN No. 24630	UL10C & EN1634-1
16	880	20	2500	10	1200	0.28	20	2 - 12%	NA	WN No. 24631	UL10C & EN1634-1
18	880	16	2500	8	1200	0.28	20	2 - 12%	NA	WN No. 24631	UL10C & EN1634-1
21.8	880	16	2500	8	1200	0.26	20	2 - 12%	NA	WN No. 24419	UL10C
21.8	800	16	2500	8	1200	0.26	20	2 - 12%	NA	WN No. 244301	EN1634-1
27.5	800	16	2500	8	1200	0.26	20	2 - 12%	NA	WN No. 24294	EN1634-1
44	650	10	2500	5	1200	0.23	20	2 - 12%	NA	WN No. 24729	UL10C

GENERAL TECHNICAL DATA

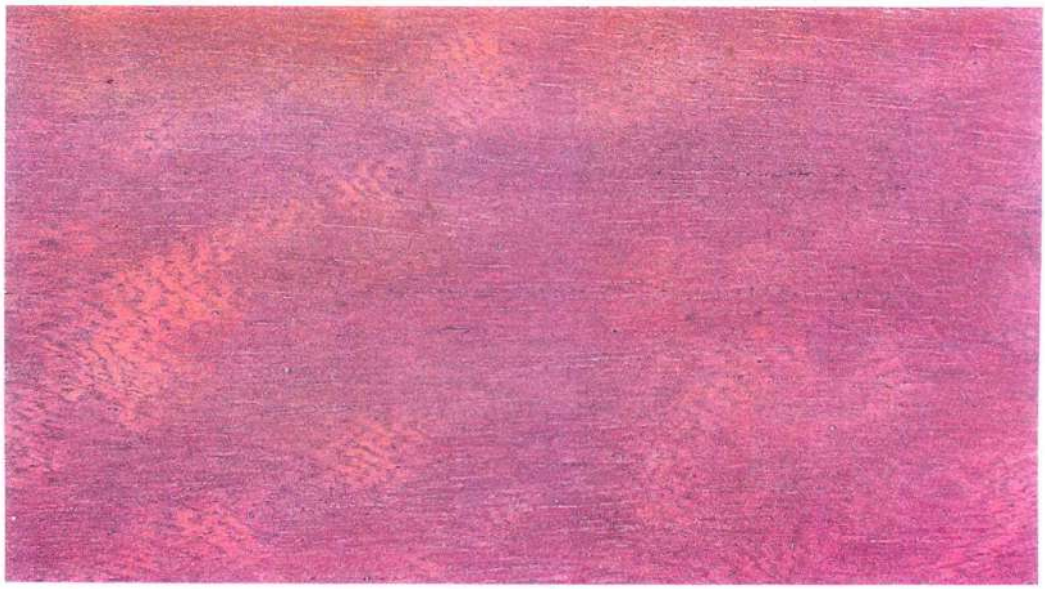
General Requirements For All OSB Types

No.	Property	Test Method	Requirement
1 ab	**Tolerances on nominal dimesions:** -thickness sanded within and between boards -thickness un-sanded within and between boards -length and width	EN 324-1	± 0,3mm ± 0,8mm ± 3,0mm
2 ab	Edge Straightness Tolerance	EN 324-2	1,5mm/m
3 ab	Square Tolerance	EN 324-2	2,0mm/m
4 a	Moisture Content	EN 322	2% to 12%
5 b	Tolerance on the mean desity within a board	EN 323	± 15%

GENERAL TECHNICAL DATA

PHYSICAL PROPERTIES	TEST	UNIT	VALUE
Screw Withdrawal - Face	BS EB 320	N	1100
Screw Withdrawal - Edge	BS EB 320	N	1300
Formaldehyde Release	BS EN 717-1	mg/m3	(E0)<0.005
Formaldehyde Concentration	ASTM D5582-14	mg/ml	<0.03
Sound Transmission Test (Operable)	ASTM E90-90	dB	36
Sound Transmission Test (Inoperable)	ASTM E90-90	dB	40
Fire-Resistance Classifications	ASTM-E84	Class	Class B
Fire-Resistance Classifications	EN13501-1	Class	C-s1,d0

SPECIFICATION OF AFRICAN MAHOGANY WOOD



MAHOGANY, AFRICAN (H) (1) *Khaya ivorensis*, A. Chév., W. Africa
(2) *K. anthotheca*, Welw. C.DC., W. and E. Africa
(3) *K. nyasica*, Stapf. ex Baker.f., E. Africa
Family: *Meliaceae*

Other names: (1) Nigerian, Benin, Lagos or Degema mahogany; (1) and (2) Ghana, Ivory Coast, Takoradi or Grand Bassam mahogany; (2) krala (Ivory Coast), mangona (Cameroon), munyama (Uganda); mbaua (Mozambique), mbawa (Malawi), mkangazi (Tanzania).
Distribution: Tropical West, Central and East Africa.
General description: Heartwood varies from light to deep reddish-brown. Grain straight to interlocked, moderately coarse textured to medium. Logs may have brittleheart or softheart and cross fractures or heartbreaks. Weight 540–590 kg/m^3 (34–36 lb/ft^3); s.g. .54 to .59.
Mechanical properties: *K. anthotheca* has moderately good wood bending properties, the other types cannot be bent without severe buckling or fibre rupture. The bending strength is low, stiffness and resistance to shock loads is very low and the crushing strength is medium.
Seasoning: Dries rapidly with little degrade except where tension wood occurs, causing serious distortion. Small movement in service.
Working properties: There is a moderate blunting effect on tools, and tension wood or brittleheart and interlocked grain can cause woolliness. To avoid tearing the grain a reduced cutting angle of from 15° to 20° is desirable. Nailing, screwing and gluing properties are good and it may be stained and polished to an excellent finish.
Durability: Liable to insect attack. The heartwood is moderately durable but extremely resistant to preservative treatment and the sapwood is moderately resistant.
Uses: Widely used for furniture and cabinetmaking, office, shop and bank fitting, interior joinery, boatbuilding and vehicle bodies. It is extensively used for laminations especially in cold moulded processes. Rotary cut logs are used for plywood and sliced veneers for decorative work.
Note: Related spp. include *K. grandifoliola*, C.DC., and *K. senegalensis*, (Desr) A. Juss, both sold as **heavy African mahogany** and sometimes mixed with shipments of lighter species.

Reactive PUR Hotmelt 707.9

Field of application

- Solid wood edges
- HPL-edges in strips
- PVC-edges, extruded/calandered, as strips or rolls (primed)
- Veneer edges
- Duroplastic and thermoplastic edges in rolls

Advantage

- Heat resistance up to +150℃
- Cold resistance up to - 30℃
- Excellent bond strength even when exposed to steam
- All of the raw materials used meet the Directive 2002/72/EG for products intended to come into contact with food.

Properties of the adhesive

Basis: Polyurethane
Specific gravity: approx. 1.3 g/cm³
Colour: 00 ivory
10 white
12 vanilla

Viscosity **(day of production)**
- Brookfield HBTD 10 Upm:
at 120℃: 160.000 ± 50.000 mPa ·mPa·s
at 140℃: 80.000 ± 20.000 mPa ·mPa·s
at 160℃: 45.000 ± 10.000 mPa ·s

Working temperature: 120-160° C

Identification: identification required according to EU regulations; contains diphenylmethane – 4,4 diisocyante
(see our safety data sheet)
Note: Intended for commercial use only

Hotmelt adhesives release vapours, even if the described working temperature is being observed. When hotmelt adhesives are molten and applied, vapours are set free and an unpleasant odour can occur, even if the recommended working temperature has been observed. If the recommended working temperature is exceeded over a longer period of time, there is a danger of decomposition products forming which are harmful. Precautions should be taken to eliminate the vapours, e.g. by using a suitable ventilation system.

Application techniques

The substrates should be freshly cut at right angles and should be free from dust. Boards and edge material have to be acclimatized to room temperature. Maintain room temperature of at least 18℃, avoid draughts.

Working temperature:
Roller application 120-160℃
Reduce the temperature to approx. 100℃ during work breaks.
Particular attention should be paid to the accurate temperature control when bonding HPL and solid wood edges. Work at the upper temperatures when bond and thick substrates. Low temperature reduces the wetting of the edges. Coat weight and pressures should be adjusted so that the applied adhesive pearls are slightly pressed out at the edges. Effective pressing out can be checked with a transparent test edge.

Reactive PUR hotmelts have a slightly higher green strength compared to EVA hotmelts. Therefore:

- Only use recently prepared solid wood edges, with perfect fit. Curved edges are not suitable
- Ensure that the base substrate has perfect edges too.
- PUR hotmelt adhesives, compared to EVA hotmelt adhesives, achieve significantly closer joints.
- Thick PVC edges in rolls have to be treated with care as they are under high tension.
- Ensure that the press roller apply maximum pressure.

Chemical cross linking of PUR hotmelts requires moisture. Therefore sufficient air humidity has to be present during processing.

The green strength ensures that the product is durable and has a close joint and allows for further processing, such a flush milling of the edges. The cross linking of the product, depending on the humidity will occur in 1-2 days. The final strength is reached after 7 days.

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76356 Weingarten/GERMANY, Phone: +49 7244 62-0, Fax: +49 7244 700-0
Email: info@kleiberit.com, **www.kleiberit.com**

KLEIBERIT Adhesives UK, Max Becker Drive, Unit 3 Brunel Way
Stephenson Ind. Est., Coalville, Leicesters. LE67 3HF
Phone: +44 1530 83 66 99, Fax: +44 1530 83 66 77, Email: uksales@kleiberit.com

Reaktiver PUR Hotmelt PUR 707.9

Cleaning

After finishing work with KLEIBERIT PUR hotmelt 707.9 empty the content of the melting vessel and drain of the remaining adhesive in the system. Immediately afterwards use KLEIBERIT Cleaner 761.7, melt the cleaner and then allow the cleaner to push the remaining PUR hotmelt out of the system until all PUR hotmelt has been removed. Cross linked PUR hotmelt can only be removed mechanically.

Packaging

KLEIBERIT PUR hotmelt 707.9:
Carton with 12 aluminium cartridges, 0.3 kg net each
Carton with 18 bags, 0.4 kg net each
Carton with 6 aluminum bags in fiber drums, 2.0 kg net each
Aluminum bag in fiber drum, 18.0 kg
Metal drum, 200 kg

KLEIBERIT Cleaner 761.7:
Carton with 12 aluminium cartridges, 0.25 kg net each
Carton with 6 aluminum bags in fiber drums, 1.5 kg net each
Carton with 6 bags, 0.22 kg net each
Metal pail, 15.0 kg net

Additional packaging sizes available upon request.

Storage

KLEIBERIT PUR hotmelt 707.9 can be stored in factory sealed packaging as follows:

Aluminium cartridges, approx. 12 months
Aluminum bag in fiber drum (2kg), approx. 12 months
Aluminum bag in fiber drum (18 kg), approx. 12 months
Bag, approx. 12 months
Metal drum, approx. 12 months

Protect from humidity!

Version MF 1113; replaces previous versions

Klebstoff- und Gebinde-Entsorgung

Abfallschlüssel 080410

Unsere Gebinde sind aus recyclingfähigem Material. Gut entleerte Gebinde können der Wiederverwertung zugeführt werden.

Service
Unser anwendungstechnischer Beratungsdienst steht Ihnen jederzeit zur Verfügung. Unsere Angaben beruhen auf unseren bisherigen Erfahrungen und sind keine Eigenschaftszusicherungen im Sinne der BGH-Rechtsprechung. Prüfen Sie selbst, ob sich unser Produkt für Ihre Zwecke eignet. Eine Haftung, die über den Wert unseres Produktes hinausgeht, kann aus den vorliegenden Ausführungen nicht hergeleitet werden, auch nicht aus der Inanspruchnahme unseres kostenlos und unverbindlich zur Verfügung gestellten Beratungsdienstes.

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KLEIBERIT®
KLEBSTOFFE • ADHESIVES

PUR-Adhesive 01

One component, polyurethane adhesive for very strong bonds with high temperature resistance. With certified bond quality D4 according to DIN/EN 204, Window Institute ift Rosenheim Germany (PZ-No. 505 26095, 08.10.2002).

501.0
0736

Bonding in Shipbuilding
(according to IMO FTPC Part 5 & Part 2/ Approval per SeeBG test certificate for international use according to Module B)

Adhesive for water resistant bonding according to **DIN/EN 204**
D4

The handy bottle with the patented dispensing lid.

- self cleaning
- easy to dispense
- precise adhesive application

KLEIBERIT
KLEBSTOFFE • ADHESIVES

KLEIBERIT 501 PUR is a moisture curing single component adhesive based on polyurethane. For strong bonds with very high strength values. High temperature resistance according to DIN EN 14257 (WATT 91) and D4 water resistance according to DIN EN 204. Flame resistant adhesive according to IMO Resolution.

FIELDS OF APPLICATION

Bonding windows and doors, stairs, plywood to be used inside or outside (outside use with surface protection). Bonding mineral building boards, ceramic materials, concrete materials and hard foams.

Please see warnings on the bottle before using!

PREPARATION

The surfaces to be bonded must be climatised, clean, dry and free from dust and grease. It could be necessary to remove release agent.

APPLICATION

- Single-sided application using a spatula or hand roller to the surface which is least porous
- Assemble the two pieces to be bonded
- The product cures to a water-resistant, solvent-resistant and semi-rigid adhesive film when subjected to the influence of humidity (air, material). The cross-linking process can be accelerated by means of a targeted moisture supply (fine water spray, approximately 20 g/m²), or by higher temperatures (40°C up to max. 60°C).
- The cross-linking process should take place with a pressure that guarantees sufficient contact of the glued surfaces. In order to protect exposed surfaces from being contaminated with glue, apply e.g. a silicone paper to this area.
- The necessary pressure is dependent upon the type and size of materials. A good closed joint should be achieved. Minimum pressure for bonding laminated wood: **0.6 N/mm²**. The more intensive the cross linking of the adhesive under pressure, the higher the subsequent load ability.

PROPERTIES OF THE ADHESIVE

• Base	polyurethane
• Specific gravity (20°C)	approx. 1.13 g/cm³
• Consistency	medium viscosity
• Temperature	+20°C ideal, not below +5°C
• Wood Moisture	8-10 % ideal for interior 10-14 % for exterior
• Coat weight	100-200 g/m² Depending on the condition of the material
• Open time	see table
• Press time	see table
• Curing time	see table
• Final strength	after approx. 24 hours with sufficient moisture
• Colour	yellowish-brown

CLEANING

- Immediately clean spilled glue with a towel and **KLEIBERIT Cleaner 820 toluene-free**.
- Clean application tools with **KLEIBERIT Cleaner 820 toluene-free** immediately after use.
  Hardened adhesive must be mechanically removed.

ADHESIVE AND PACKAGING DISPOSAL

Disposal code 080501

PACKAGING

cartons containing 12 plastic bottles, 0.5 kg each

metal canister	6,0 kg net
metal can	32,0 kg net
metal drum	220,0 kg net

STORAGE

KLEIBERIT PUR Adhesive 501 can be stored in original factory sealed containers at 20°C for approx. 9 months. Keep in cool and dry place and protect from humidity. Opened containers should be used as soon as possible. Product is not frost sensitive.

EX 0211; replaces previous versions

Identification:

identification required according to the German hazardous substances regulations GefStoffV, contains 4.4 diphenylmethane diisocyanate.
See our safety data sheet 501
For professional use only.

TECHNICAL DATA

PUR-ADHESIVE 01

SERVICE

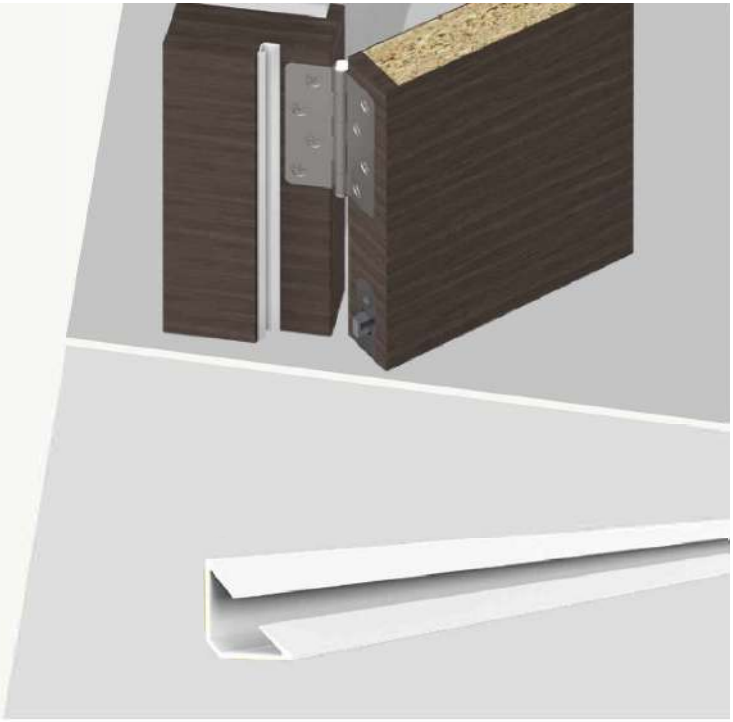
Our application department may be consulted at any time without obligation. The statements herein are based on our experience gained to date. They are to be considered as information without obligation. Please test and establish for yourself the suitability of our products for your particular purposes. No liability exceeding the value of our product can be derived from the foregoing statements. This also applies to the technical consultancy service, which is rendered free of charge and without obligation.

Product Overview 501

KLEIBERIT Products	Viscosity mPa·s	Open time (20 °C)	Press time (20 °C)	40 °C	60 °C	Curing time
KLEIBERIT 501.0	8000	20-25 min	60 min	30 min	10 min	2-3 hours
KLEIBERIT 501.6	7000	65-70 min	6-7 hours	2-3 hours	1-2 hours	1 day
KLEIBERIT 501.8	8000	approx. 8-10 min	30 min	15 min	7 min	1 hour

PS 1010 P Flex
PS 1212 P Flex
PS 1515 P Flex

- winged corner seal with flexible base
- equipped with two rows of durable self-adhesive backing tape
- flexible base offers more flexibilty during installation
- ensures soft closing of the door
- also suitable for retro-fit applications



TECHNICAL DATA

Application	timber and metal door frames
Gasket material	rigid and flexible PVC co-extrusion
Working temperature range	-15°C to +60°C

DIMENSIONS

Standard lengths	2100, 2200, 2400, 2500, 3000 mm

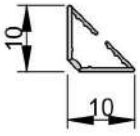
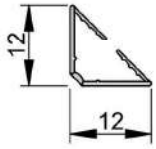
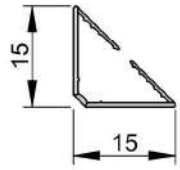
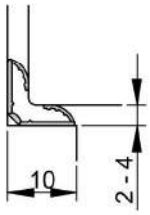
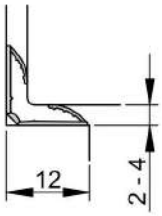
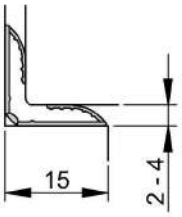
FIXING

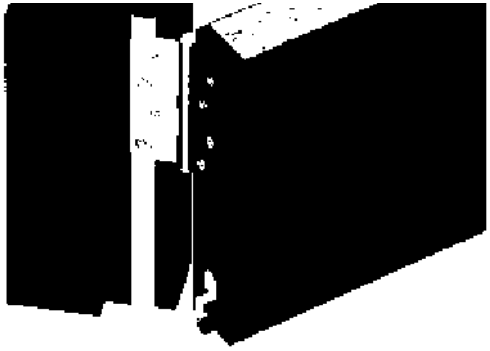
Fixing	stuck to the door stop with self-adhesive backing tape

PERFORMANCE & CERTIFICATES

UL	UL 10C (R38166)

COLORS/ART.NO.	PS 1010 P Flex	PS 1212 P Flex	PS 1515 P Flex
Black	P160130	P160136	P160138
Dark brown	P160132	P160137	P160139
White	P160131	P160135	P160140
Grey	P160159	P160147	P160151

	PS 1010 P Flex	PS 1212 P Flex	PS 1515 P Flex
Fitting tolerance range	2 - 4 mm	2 - 4 mm	2 - 4 mm
Width x height	10 x 10 mm	12 x 12 mm	15 x 15 mm
			
			



FP Series

/ plain, rigid box graphite fire seal

/ provides fire protection for doors

/ equipped with a durable self-adhesive backing tape

/ supplied in lengths

TECHNICAL DATA

Application	fire rated timber doors & frames
Material	PVC encapsulated graphite

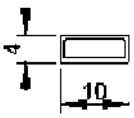
PERFORMANCE & CERTIFICATES

Fire	EN 1634-1*

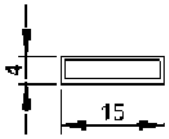
DIMENSIONS

Standard lengths	2.00, 2400, 3000 mm

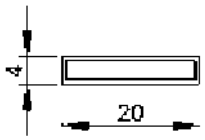
FP 1004



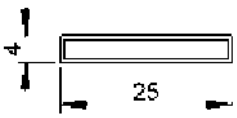
FP 1504



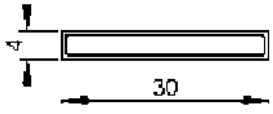
FP 2004



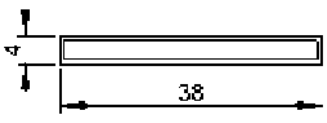
FP 2504



FP 3004

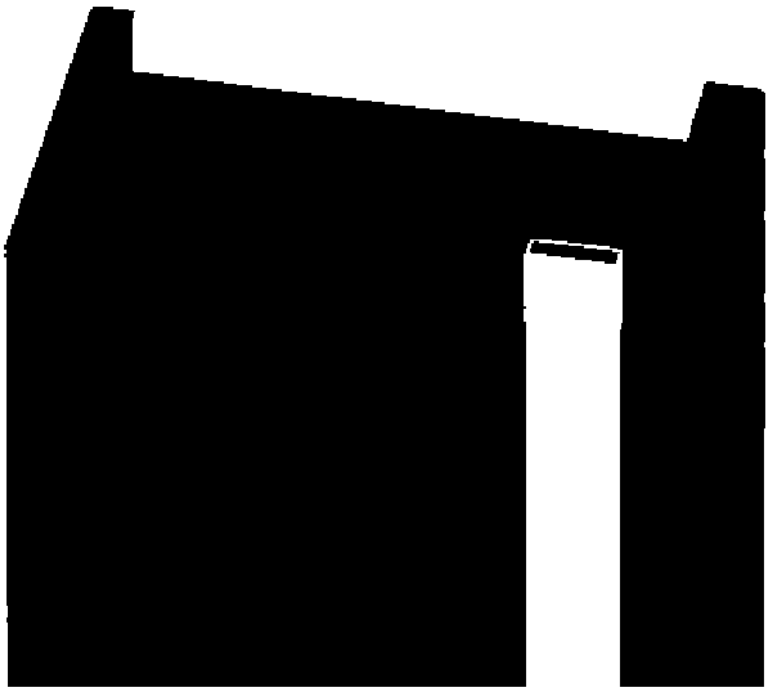


FP 3804

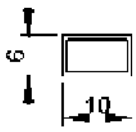


COLORS/ART.NO.	FP 1004	FP 1504	FP 2004	FP 2504	FP 3004	FP 3804
Red	F160052	F160055	F160058	F160150	F160061	F160064
Black	F160105	F160106	F160107	F160153	F160109	F160108
Brown	F160053	F160056	F160059	F160151	F160062	F160065
White	F160054	F160057	F160060	F160152	F160063	F160066

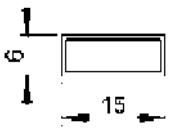
*The test value may differ according to the EN 1634-1 test, as the complete door system must be checked



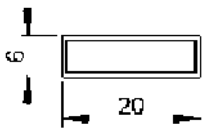
FP 1006



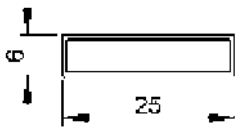
FP 1506



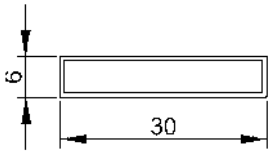
FP 2006



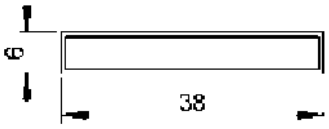
FP 2506



FP 3006



FP 3806



COLORS/ART.NO.	FP 1006	FP 1506	FP 2006	FP 2506	FP 3006	FP 3806
Black	F160197	F160201	F160205	F160199	F160203	F160207
Brown	F160124	F160125	F160126	F160127	F160128	F160129
While	F160196	F160200	F160204	F160198	F160202	F160206

BOSS 813+

Technical data

Basis	Polyurethane
Consistency	Stable foam, thixotropic
Curing system	Moisture curing
Skin Formation (FEICA TM 1014)	9,5 min
Cutting Time (FEICA TM 1005)	50 min
Density**	Ca. 40 kg/m³
Thermal conductivity (λ) (EN 12667)	0,033 W/m.K
Box Yield (FEICA TM 1003)	750 ml yields ca. 34 l of foam
Joint Yield (FEICA TM 1002)	750 ml yields ca. 18 m of foam
Shrinkage after curing (FEICA TM 1004)	< 1 %
Expansion after curing (FEICA TM 1004)	< 1 %
Compressive strength (FEICA TM 1011)	Ca. 70 kPa
Shear strength (FEICA TM 1012)	Ca. 59 kPa
Tensile Strength (FEICA TM 1018)	Ca. 134 kPa
Elongation at Fmax (FEICA TM 1018)	Ca. 14,2 %
Temperature resistance**	-40 °C till +90 °C (cured)

** This information relates to fully cured product.
Soudal NV uses test methods approved by FEICA designed to deliver transparent and reproducible test results, ensuring customers have an accurate representation of product performance. FEICA OCF test methods are available at: http://www.feica.com/our-industry/pu-foam-technology-ocf . FEICA is a multinational association representing the European adhesive and sealant industry, including one-component foam manufacturers. Further information at: www.feica.eu

Product description
Boss 813 FR is a one-component, self-expanding, ready to use PU-foam, which contains HCFC- and CFC-free propellants who are not harmful for the ozonlayer. Boss 813 FR is a PU-foam with fire retardant characteristics according to the European standard EN 1366-4.

Properties
- Fire resistant in a joint (EN 1366-4)
- High filling capacity
- Good adhesion on all surfaces (except PE, PP and PTFE).
- High insulation value, thermal and acoustic
- Very good bonding properties.
- Not UV-resistant

Applications
- Installation of fireproof doors and windows.
- Sealing of fire retardant joints in walls and ceiling.
- As part of the 'Soudal Fire Range' assortment for penetration seals and joints.
- Sealing of all openings in roof constructions.
- Apply of an acoustic baffle
- All foam applications in static joints.

Packaging
Colour: pink
Packaging: 750 ml aerosol (net)

Shelf life
15 months unopened and stored in dry and cool conditions (Between 5 and 25 °C), Upright storage is recommended.

Boss 813 FR

Application method
Shake the aerosol can for at least 20 seconds. Put the adapter on the valve. Moisten surfaces with a water sprayer prior to application. For non-conventional substrates a preliminary adhesion test is recommended. Remove pressure from the applicator to stop. Fill holes and cavities for 1/3, as the foam will expand. Repeat shaking regularly during application. If you have to work in layers repeat moistening after each layer. Fresh foam can be removed using Soudal Gun & Foamcleaner or acetone. Cured foam can only be removed mechanically or with Soudal PU-Remover.

Can temperature: +5 °C - 30 °C
Ambient temperature: +5 °C - 30 °C.
Surface temperature: +5 °C - 35 °C

Health- and Safety Recommendations
Take the usual labour hygiene into account. Always wear gloves and goggles. Remove cured foam mechanically. Never burn away. Consult label and material safety data sheet for more information. When vaporizing (for example with a compressor), additional security measures will be required. Use only in well ventilated areas.

Standards and certificates
- Tested according to standard EN 1366-4 for fire-resistant jointing
- Classification report according to EN 13501-2 by Warrington Exova (report nr. 19660B) and in combination with fire-resistant sealants (19660C)

RITVER PAINTS & COATINGS where paints come to life

WOOD FINISHES DATA SHEET

WOOD GLUE Product No. PW1612

A water based wood glue based on polyvinyl acetate polymer, designed with excellent high tack and bond strength ,developed for various wood carpentry application uses , such as :[bonding timber, MDF, doors, windows in high speed assembly lines at joineries]
Product is not suitable for perpetual wet areas like toilets, kitchen sink etc.,
Virtues: It is a nontoxic and non-flammable water based, environmental friendly single component product.

USE

Product is also useful for decorative bonding, cold and hot pressing of decorative laminates, wood veneers to ply, block boards, tiles in dry condition. Etc.

SPECIFICATIONS

Properties

Color	: milky white
Specific gravity	: 1.01 Kg/lit [± 0.025]
Viscosity 4/25°C	: 180 sec. [± 1]
Weight Solids	: 43% Kg/Kg [± 1]
PH	: 5-7
Drying Interval	
Open Tack	: 5-10 min.
Curing	: 60 hrs. [Temperature, humidity, air movement, film thickness and number of coats all affect the drying time.]

SURFACE PREPARATION

All timber species must be fully aged with a moisture content of less than 15%. Surface must be dry, clean and free from contaminations. Natural oil or gum must be removed by solvent cleaning.
Exclusions for successful application include perpetually wet surfaces and also large cavities on wood surfaces.

APPLICATION METHODS

RITVER Wood glue is generally recommended to be applied without any thinning and as such. During application use a mechanical glue spreader or a convenient spatula. Ensure that the surface is free from dust and oil moieties. Spread the adhesive evenly and leave it for 5 to 10 minutes as per the wood surfaces. Press the surface to be bonded and squeeze out the excess. Remove the non-dried portion with warm water or resort to mechanical removal when dry. Do not apply when wet as there will be no bondage to the substrate.
Once used keep the container closed immediately. It is also important to see that the tools used for application is cleaned before the glue dries off.

WOOD GLUE Product No. PW1612

PRODUCT PREPARATION

Stir well before use. Thin to the required viscosity ensuring the product is homogeneous.

Dilution

By brush, roller
Normally ready to use but we can dilute the product up to 15 % by water.

SUBSEQUENT TREATMENT

After drying this product, it does not need any subsequent treatment.

PACKING & STORING

Available in 1Lit, 4Lit ,20Lit and 200Lit .
Store in a cool and well ventilated place. Keep away from direct sunlight. Minimum one year in unopened container, stored in a cool and dry condition at 25°C.

SAFETY & FLAMMABLE

Do not expose product to direct sun light.

In case of contact with eyes rinse immediately with plenty of sweet water and seek medical
Keep away from sources of ignition. Keep out of reach of children.

TRITOSIL MONTAGE

HIGH TACK ADHESIVE AND SEALANT

DESCRIPTION

TRITOSIL MONTAGE is moisture curing, elastic and paintable adhesive and sealant that has excellent durability and maximum adhesive strength, based on Advanced Polymer Technology.

BENEFITS

- High initial tack reducing the need for initial support.
- Fast curing, quick build-up of end strength, high shear strength after full cure
- Easy to apply and easy to tool and finish
- Paintable with all water-based paints
- Free of isocyanates, phthalates, solvents and silicones
- Permanently elastic
- No shrinkage and bubble free
- Neutral curing, almost odorless
- Adheres perfectly without primer on most, even damp, surfaces

APPLICATIONS

Suitable for bonding application in the building industry, TRITOSIL MONTAGE is designed for the most demanding applications and adverse conditions. Excellent adhesion to many substrates including aluminum, steel, glass, wood and many plastics. Suitable for floor joints, low movement wall joints, sheet metal fabrication, mirrors, elastic bonding of panels, profiles and other pieces on the most common substrates (wood, MDF, Chipboard, etc.). Elastic bonding in vibrating constructions, joints in Bathrooms and Kitchens.

TECHNICAL SPECIFICATION

Physical Properties	Typical Value
Basis	Advanced Polymer Technology
Consistency	Smooth paste free from particles
Skin over time,Minutes	10-15
Hardness Shore A	55±3
Specific gravity	1.5±0.02
Viscosity flow	Non Sag
Tensile strength,N/mm2	2
Elongation, %	>300
Application Temperature	5°C to 45°C
Curing Time	2-3mm/24 hours

SURFACE PREPARATION

Surface should be completely clean, dry & free of contaminants such as dirt, dust, grease, oil & other residue or material that may interfere with adhesion. Remove mildew by scrubbing . Protect eyes & hands by wearing goggles/face shield & chemical resistant gloves. Thoroughly rinse surface & allow to dry completely prior to sealant application.

DIRECTIONS

1. Clip off tip of spout at 45° angle to desired size.
2. Apply using steady & constant pressure to completely bridge joints
3. Smooth sealant for a neat appearance.
4. Wipe away excess with a dry cloth or towel before surface skins.
5. After cure, carefully remove with a razor blade, taking care not to undercut sealant bond to substrate.

CLEAN UP

Wipe excess with dry towel or paper towel prior to cure. Wash skin with mild soap & water. Clean tools. with mineral spirits prior to cure. Cured sealant may be removed using a razor blade taking care not to undercut seal to substrate.

PACKAGING

290ml cartridge.

COLORS

TRITOSIL MONTAGE is available in White color. Other colors are available upon request.

SAFETY

Safety data sheet available upon request.

STORAGE AND SHELF LIFE

TRITOSIL MONTAGE has a shelf life of 12 months from date of production when stored in the original unopened containers at or below 25°C. In countries where high heat and humidity are a factor, special precautions must be taken to store the product in a covered, well-ventilated warehouse and avoid excessive heat conditions.

Product of:

TRITON MIDDLE EAST

Factory address TRITON Middle East LLC
P. O. Box 3350,
Umm Al Quwain, U. A. E.
Tel.: + 971 6 767 23 27
Fax.: + 971 6 767 23 28
E-mail: info@triton.me
Web.: www.triton.me

PRODUCT CODE	SIZE	FINISH	
LG.LA160	102	01.153	
PRODUCT		Satin Stainless Steel Grade 304	SUPPLIER
BUTT HINGE	102mm X 76mm X 3mm		LAIDLAW GULF LLC

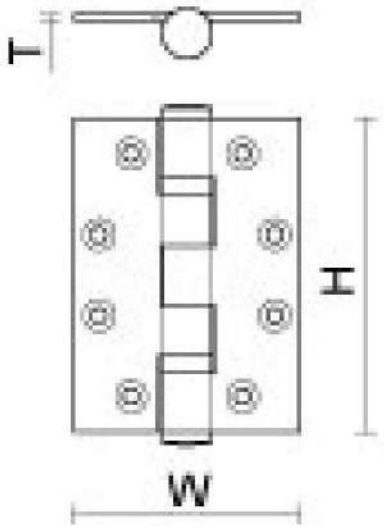
DESCRIPTION

BUTT HINGE

Features:
- 2 Ball Bearing
- 5 knuckles
- Size: 102mm x 76mm x 3mm
- Square corner
- Suitable up to 120kg door weight
- Stainless Steel Grade 304, Satin Finish
- Supplied with Stainless Steel countersunk fixing screws

Classification:
- Tested to BS EN 1935 Grade 13, CE Marked with Classification Code: 4-7-6-1-1-4-0-13 Element Certificate no. 2812-CPR-AC5106
- Tested to BS EN 1634-1 with Certifire Certificate no. CF5762

IMAGE / TECHNICAL DRAWING



H = 102 mm
W = 76 mm
T = 3 mm

LAIDLAW GULF LLC
P.O. Box: 185292, 301 Mayfair Building, DIP-1, Dubai, UAE
Tel: 04-8857404 E-mail: info@laidlaw.ae
Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
ITH-102X76	1mm	White	
PRODUCT			SUPPLIER
INTUMESCENT KIT			LAIDLAW GULF LLC

DESCRIPTION

HINGE INTUMESCENT PROTECTION PAD

Features:

- 2-part kit of hinge
- Suitable for hinge size 102mm X 76mm
- 1mm thick supplied in 2 pcs per hinge

IMAGE / TECHNICAL DRAWING

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P.O. Box: 185292, 301 Mayfair Building, DIP-1, Dubai, UAE
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Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
LG.LA60	5572	01.153	
PRODUCT		Satin Stainless Steel	SUPPLIER
MORTISE SASHLOCK	55mm backset, 72mm centres		LAIDLAW GULF LLC

DESCRIPTION

MORTISE SASHLOCK

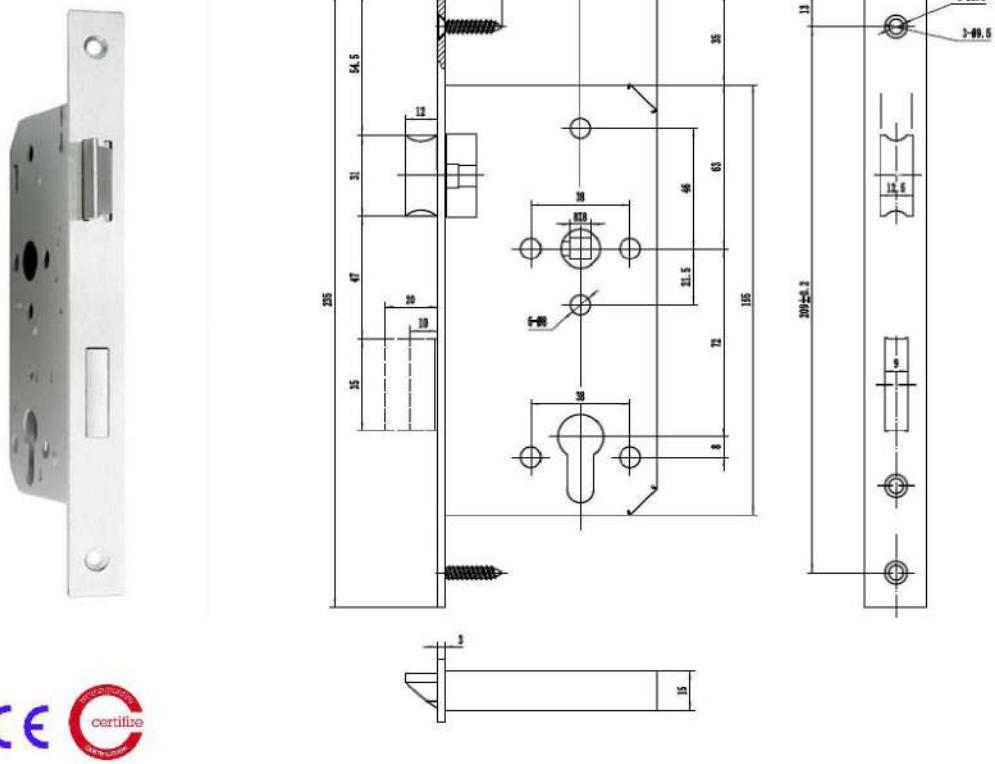
Features

- Non handed (reversible latchbolt)
- 55mm backset
- 72mm Euro profile centres
- 20mm double throw deadbolt
- Single piece 24mm square forend in Satin Stainless Steel finish with matching strikeplate
- Springing suitable for unsprung lever furniture
- Supplied with fixing screws
- Stainless Steel Grade 304, Satin finish

Classification:

- Tested to BS EN 12209 : with Classification Code: 3/X/8/1/0/G/3/B/C/2/0
- Element Certificate no. 2812-CPR-AG5136
- Fire safety: Successful fire test to BS EN 1634-1
- Tested to BS EN 476 Part 20 & 22, for use on fire rated doors

IMAGE / TECHNICAL DRAWING



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Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
ITL-160X90	1mm	White	
PRODUCT			SUPPLIER
INTUMESCENT KIT			LAIDLAW GULF LLC /ATHMER

DESCRIPTION

INTUMESCENT PROTECTION PAD FOR LOCK

Features:

- Intumescent protection 2-part kit of lock
- Suitable for DIN Standard size Mortise Lock size 160x90mm
- 1mm thick
- Suitable fire rated wood doors

IMAGE / TECHNICAL DRAWING

LAIDLAW GULF LLC
P.O. Box: 185292, 301 Mayfair Building, DIP-1, Dubai, UAE
Tel: 04-8857404 E-mail: info@laidlaw.ae
Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers

ISO 9001 Certified

PRODUCT CODE	SIZE	PINS	FINISH	
LG.LA212E	80	6	04	Laidlaw
PRODUCT			Satin Nickel Plated	SUPPLIER
DOUBLE CYLINDER	80mm (40/40) length			LAIDLAW GULF LLC

DESCRIPTION

DOUBLE CYLINDER

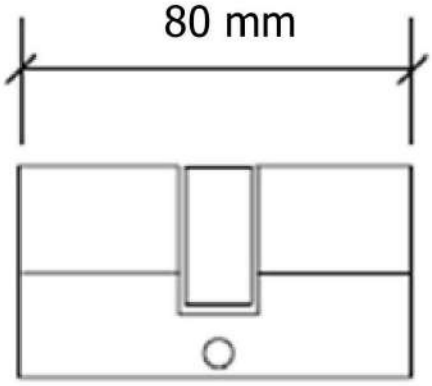
Features

- Europrofile
- 6 pins
- 80mm length (40/40mm)
- Anti-Drill
- Anti-Plug
- Anti-Pick
- Anti-Bump
- Brass body
- Non-Master Keyed
- Supplied with 3 differ keys (dimple)
- Satin Nickel plated finish

Classification

- EN 1303:2015-08 : 1-6-0-0-0-C-5-2
- Fire safety: Suitable for fire rated doors

IMAGE / TECHNICAL DRAWING



LGAI

LAIDLAW GULF LLC
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Tel: 04-8857404 E-mail: info@laidlaw.ae
Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers GAI

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
LG.LA 54	204.6	SSS	
PRODUCT		Satin Stainless Steel Grade 304	SUPPLIER
LEVER HANDLE	127mm length		LAIDLAW GULF LLC

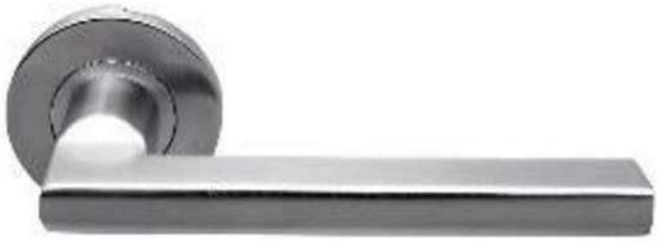
DESCRIPTION

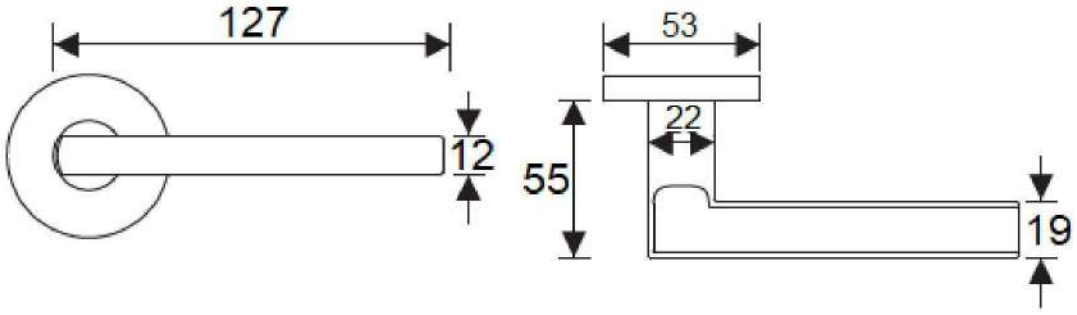
LEVER HANDLE

Features

- Solid 'Flat' investment cast
- 19mm X 12mm X 127mm length
- 53mm dia. X 8mm thick sprung round rose and escutcheon
- Stainless Steel Grade 304, Satin finish
- Supplied with bolt through fixings and 8mm square spindle
- Suitable to 38-54mm thick doors

IMAGE / TECHNICAL DRAWING





LAIDLAW GROUP LIMITED
Unit 16, Eastway Business Village, Oliver's Place Fulwood,
Preston, Lancashire, United Kingdom. PR2 9WT
E-mail: info@laidlaw.ae
Website: www.laidlawgroup.com

Member : Guild of Architectural Ironmongers

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
LG.LA807	204	04.150	Laidlaw
PRODUCT		Satin Nickel Plated	SUPPLIER
DOOR CLOSER	EN 2 TO 4		LAIDLAW GULF LLC

DESCRIPTION

CONCEALED OVERHEAD DOOR CLOSER

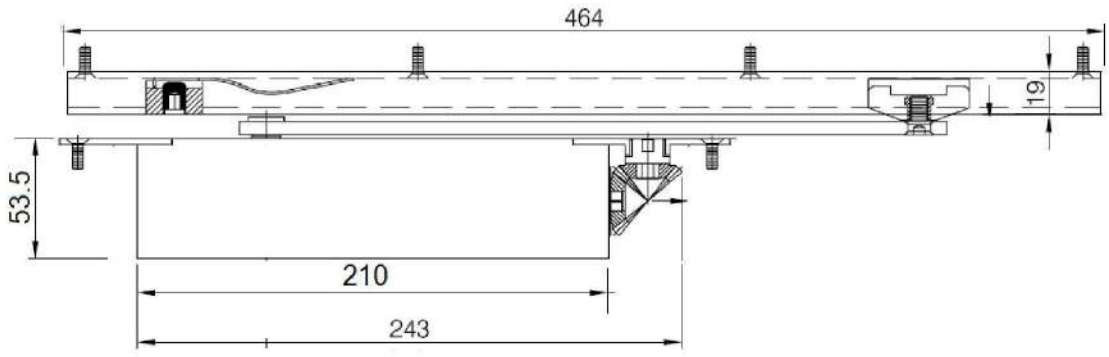
Features

- Cam Action
- Adjustable power size EN 2-4
- Adjustable closing and latch action
- Reversible for LH & RH applications
- Suitable up to 1100mm door width
- Suitable up to 80kg door weight
- Angle of opening 120°
- Suitable for 40mm door thickness and above
- Satin Nickel Plated Finish Slide arm and Track (With optional hold-open feature - not be used on fire rated doors)

Classification

- BS EN 1154 : 3/8/2-4/1/1/3
- CE Marked : Approved product, certificate no. 2812-CPR-AD10302
- Fire safety: Suitable for fire rated doors

IMAGE / TECHNICAL DRAWING



LGAI CE

LAIDLAW GULF LLC
P.O. Box: 185292, 301 Mayfair Building, DIP-1, Dubai, UAE
Tel: 04-8857404 E-mail: info@laidlaw.ae
Website: www.laidlaw.ae

Member : Guild of Architectural Ironmongers GAI

ISO 9001 Certified

PRODUCT CODE	SIZE	FINISH	
ITD-LA807	1mm		
PRODUCT		White	SUPPLIER
INTUMESCENT SEAL			LAIDLAW GULF LLC

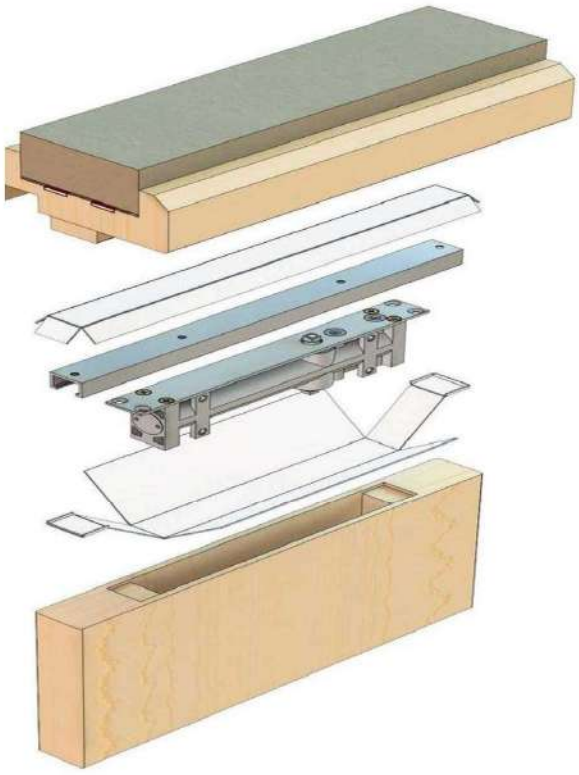
DESCRIPTION

INTUMESCENT PROTECTION PAD FOR DOOR CLOSER

Features:

- Intumescent kit suitable for LA807 concealed closer
- 2-part kit suitable 1mm thick
- Suitable for fire rated wood doors

IMAGE / TECHNICAL DRAWING



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PRODUCT CODE	SIZE	FINISH	
LG.LA407	60	01.153	
PRODUCT		Satin Stainless Steel Grade 304	SUPPLIER
DOOR VIEWER			LAIDLAW GULF LLC

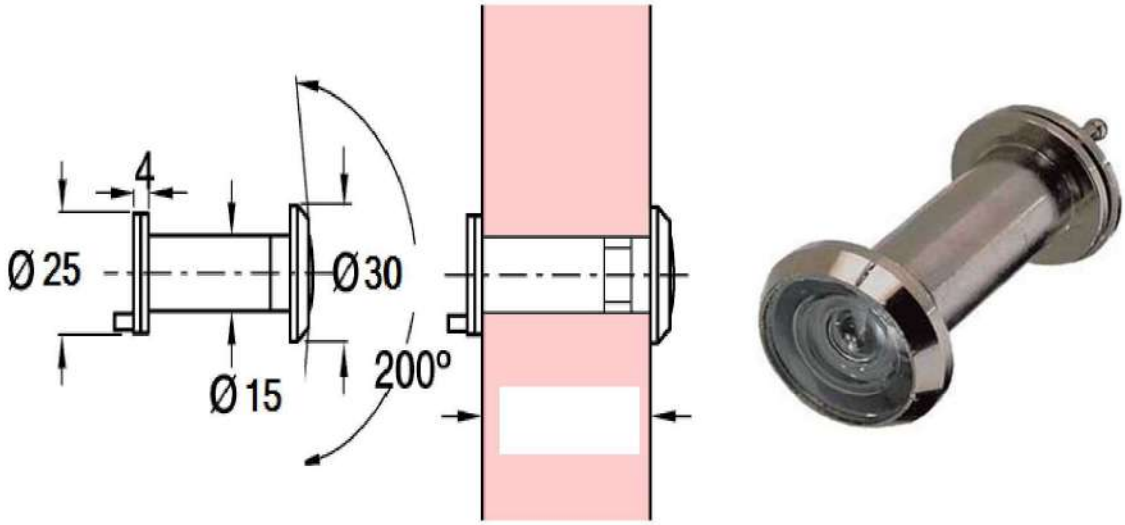
DESCRIPTION

DOOR VIEWER

Features:

- Glass lens
- with cover cap
- 200 degrees viewing angle
- suitable for 35 – 65mm door thickness
- Stainless Steel Grade 304, Satin finish

IMAGE / TECHNICAL DRAWING



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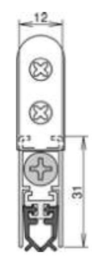

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Athmer oHG | Sophienhammer | 59757 Arnsberg | Germany

Athmer GRAPHITE Intumescent Sheet

Material Composition:
Athmer Intumescent material consists of a hydrated graphite compound, reinforced with high performance polymer with a PVC outer case and strong adhesive tape back.

Colors:
Available in natural grey / Graphite colour with self adhesive tape back

Thickness:
It is available in either 1mm, 2mm or 4mm thickness. The material is rigid, and all items are shipped flat, not rolled or coiled.

Size:
Available in rolls, as well as A4 size sheets and liners in various widths from 10mm upto 100mm

Temperature Exposure:
It will remain stable over a wide temperature range with multi directional expansion when subjected to high temperatures.

Cold:
Exposure to extreme cold will not detrimentally affect the material, except that it will become more brittle.

Athmer oHG
Sophienhammer
59757 Arnsberg, Germany
Local court: Arnsberg HRA 1205
VAT-no.: DE 123 882 949
tax no: 30358060100

Chemical Exposure:

The coating on the material is resistant to all but the most aggressive of chemicals. It is unaffected by common acids, alkalis, salts and organic solvents. Where the coating has been damaged or cut through, care must be taken to reinstate the damaged area.

Expansion Characteristics:
Products containing Intumescent materials will expand at a variety of rates and temperatures, depending on their chemical composition and other factors. Environmental conditions, the placement of the product and the energy of the heat source may influence the speed or magnitude of the Intumescent reaction. The following information serves as a guideline.

Temperature for Expansion:
Approximately 220 degrees C, depending on conditions

Rate of Expansion:
Up to 20 times, based on original thickness of either 2mm or 4mm, and depending on conditions

Moisture Resistance:
Provided the protective casing is intact, exhibits good resistance to humidity but will require more specialized treatment if continuously exposed to condensation or running water.

Special Handling Requirements:

Seals should be stored flat, preferably in a cool place, but will tolerate temperatures up to 45 degrees C. Extensive tests show that no deterioration in performance takes place even after 10 years of storage.

Features:

- ✓ Low Thermal Conductivity
- ✓ Excellent Fire sealing properties

- ✓ Excellent Adhesion to Most materials
- ✓ Excellent Insulator
- ✓ Stable at High Temperatures

Applications:

- Fire Resistant - for Fire Door Edge Sealing,
- Liners / Bedding Material - for Fire Resistant Glazing System.
- Fire Resistant - for Intumescent Louvers / Dampers

Fire test Evidence:
Various combinations of seals have been tested on door assemblies up to 120 mins in accordance to BSEN 1634-1. Please contact our technical department for evidence copies.

NB: The user must be satisfied that the product is entirely suitable for the intended use.

11 REVISION HISTORY

REVISION HISTORY

REV. No.	AUTHOR	DESCRIPTION	PAGE No.	REPORT NO.	DATE
-	Ginalyn Mauricio	Issuance of Test Report	-	0054-25-TR-01	19.02.2025
A	Ginalyn Mauricio	Duplicate test report The test sponsor was changed from Abanos Furniture and Decoration Industries LLC & Joinery to Al Talah Board Manufacturing Co. LTD	2	0054-25-TR-01A	19.02.2025

--END OF THE REVISION HISTORY--

12 WITNESSES THE TEST

Test sponsor and/or other representative(s) witnessing the test.	Mr. Nitin Kumar– representative of the Test Sponsor Mr. Sarath P.S – representative of the Test Sponsor Mr. Subash – representative of the Test Sponsor

13 SIGNATORIES

Prepared by	***Reviewed by***	***Authorized by***
Ginalyn Mauricio *Testing Engineer*	Dr. Sebastian Ukleja *Testing Manager*	Dr. Sebastian Ukleja *Testing Manager*
 Signature	 Signature	 Signature

--END OF REPORT--