ESL

مختبر الإمارات للسلامة
EMIRATES SAFETY LABORATORY

TEST REPORT

No. 0603-24-TR-02

Fire resistance of **Latched, Single-Action, Single Door fire-rated PSB wooden door with hardwood frame – EuroArt Hardware** set made according to technical documentation No. ABS00071-STD-FR-60-PSB-136 (dated 14-01-2025).

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

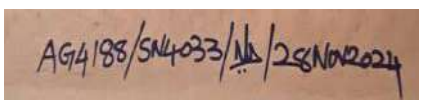
Date of issue: 07 February 2025

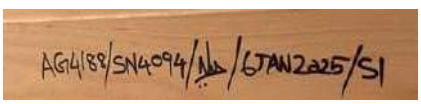
ilac-MRA

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 05 December 2024 for the 1st test and 09 January 2025 for the 2nd test.
Date of specimen(s) installation:	Test 1: 05 to 06 December 2024 Test 2: 09 to 10 January 2025
Date of testing:	Test 1: 07 December 2024 Test 2: 11 January 2025
Name and address of the test sponsor:	Abanos Interior Fit-Out & Joinery P.O. Box 114480 Dubai, United Arab Emirates
Name and address of the manufacturer/supplier:	Abanos Interior Fit-Out & Joinery 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 hardwood frame – EuroArt Hardware set
Identification of the test specimens:	Two single-leaf wooden doorset were installed in a vertical rigid supporting construction, Test 1: Door 1 – opening away from the furnace Test 2: Door 2 – opening towards 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:	0603-24-01 - opening away from the furnace 0809-24-02 - opening towards the furnace
Description of sampling procedure including date if applicable:	Test specimens were selected by ESL Certification (sampling acknowledgement dated 28 November 2024 and 06 January 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. The 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 Test 1 at 395mm and Test 2 at 345mm above the door sill level of the specimen. The pressure level during the test is shown in Graph 3.
Ambient temperature:	Measured during Test 1 at a distance of 1700mm and Test 2 at a distance of 1650mm away from the unexposed face of the specimen, at the commencement of each test was 22.4°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)	2235 x 1100	2235 x 1100	2234 x 1096	2235 x 1100
Overall door leaf size (h x w)	2200 x 1040	2200 x 1040	2200 x 1045	2201 x 1041
Overall architrave size – unexposed side(h x w)	2260 x 1150	2265 x 1160	2256 x 1155	2267 x 1167
Door frame clear opening (w x h)	2190 x 1010	2190 x 1010	2186 x 1015	2190 x 1014
Thickness of the door leaf	54	54	55.37	54.48
Door leaf Weight (kg)	-	-	113.50	112.02

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 of cross-section 45 x 150mm as shown in Figure 2 and 3, made of Beechwood hardwood with stated density of 670kg/m^3 and stated moisture content of 11.2% manufactured European beech wood by supplied by Florian Legno, S.P.A. The frame has 2 parts and was joined together using Kleiberit PUR 501.0 which was manufactured by Klebchemie M.G Becker GmbH & Co. The door frame jambs and door frame head were connected by means of a miter joint at the corners using one (1) Ø6 x 48mm long and one (1). Ø6 x 76mm long self-tapping screws fixed at each frame head, frame members glued using Fevicol SH manufactured by Pidilite Industries Ltd.

An architrave with a cross-section of 15 x 60mm, made of Desert Board PSB FR with a stated density of 880 kg/m³ and a stated moisture content of 10.2%, was manufactured and supplied by Al Talah Board Manufacturing Co. Ltd. This architrave was affixed to both sides of the door frame using Tritosil Montage sealant/adhesive, produced by Triton Middle East. The installation included five (5) Ø1.5 x 22mm nails placed at both jambs and three (3) nails at the top, positioned at a center-to-center distance of approximately 540 mm as shown in Figure 2 and 3. Additionally, the architrave on the door closing face is secured with a 27 x 7mm thick PSB board, which has been affixed using Tritosil Montage sealant/adhesive which was manufactured by Triton Middle East. This board protrudes and securely pressure-fit the architrave to the frame.

3.1.2 Description of the Door Leaf

The door leaf is constructed from a 54mm thick Desert Board PSB FR, which features 3mm thick Mahogany wood lipping on all sides. The Desert Board PSB fr, produced by Al Talah Board Manufacturing Co. LTD with a stated density of 880kg/m³, and a stated moisture content of 10.2%. It is composed of three (3) 18mm layers that are bonded together using Kleiberit 501.0 PUR adhesive manufactured by Klebchemie M.G Becker GmbH & Co.

Furthermore, the 3mm thick African Mahogany wood lipping, supplied by Danube Building Materials FZCO with a stated density of 760kg/m³, and a stated moisture content of10.4% has been securely attached to the edges of the core using the Kleiberit reactive PUR Hotmelt 707.9 from Klebchemie M.G Becker GmbH & Co

3.1.3 Doorset Gaskets:

Door Frame

- Two (2) 15 x 6 mm thick intumescent seals (Pyrostrip 500p, Door 1 - white color & Door 2 – brown color), manufactured by MANN McGowan, were installed 9 mm from the opening edge and 9 mm apart. (see Figures 2 and 3).
- A single winged corner seal (PS1212-2200/BL) 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 (Pyrostrip 500p, Test 1 - white color & Test 2 – brown color), manufactured Mann McGowan was installed centrally along the vertical edge and the top edge of the door leaf (see Figures 2 and 3).

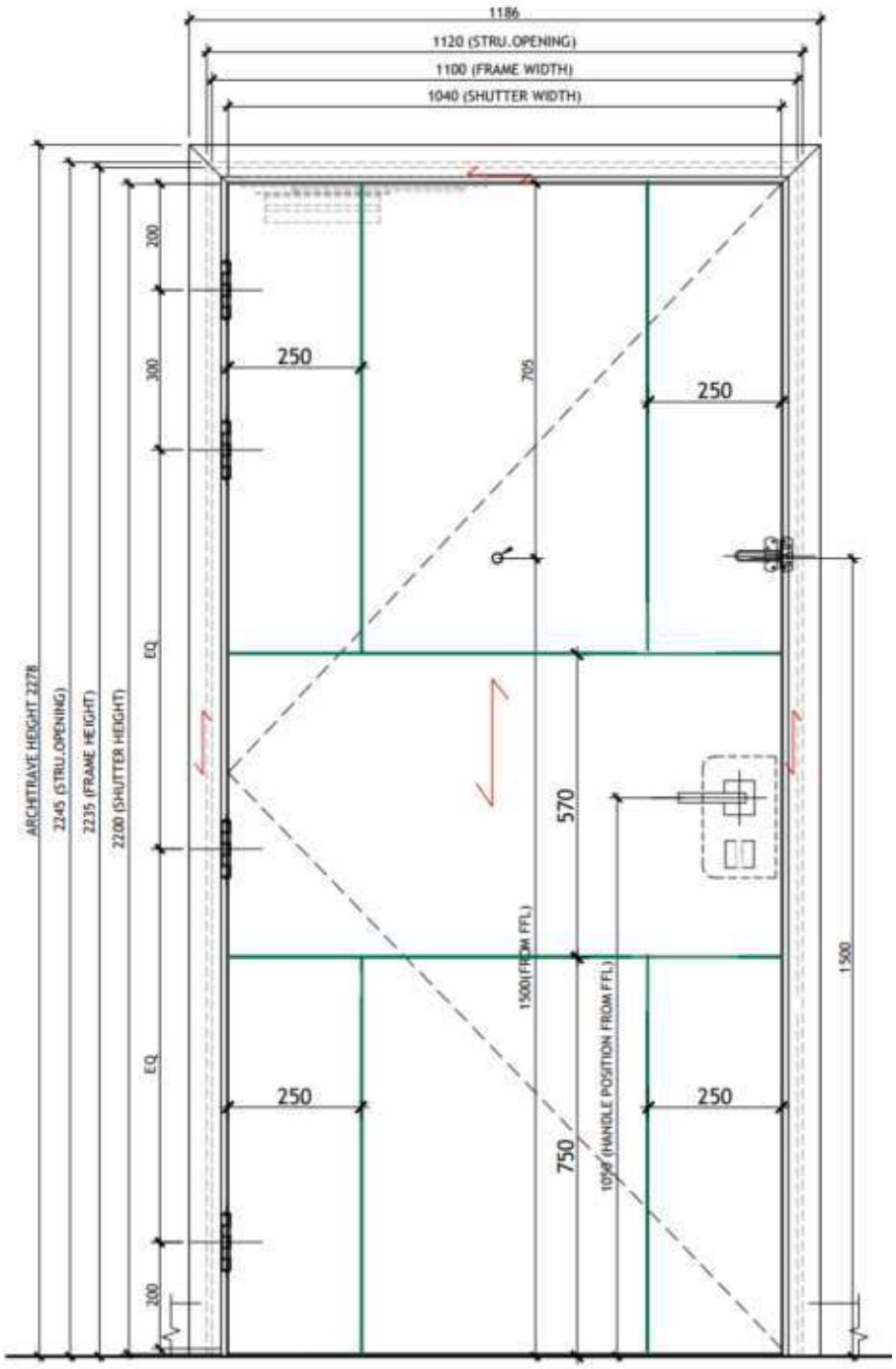


Figure 1. Elevation View of the Test Specimen

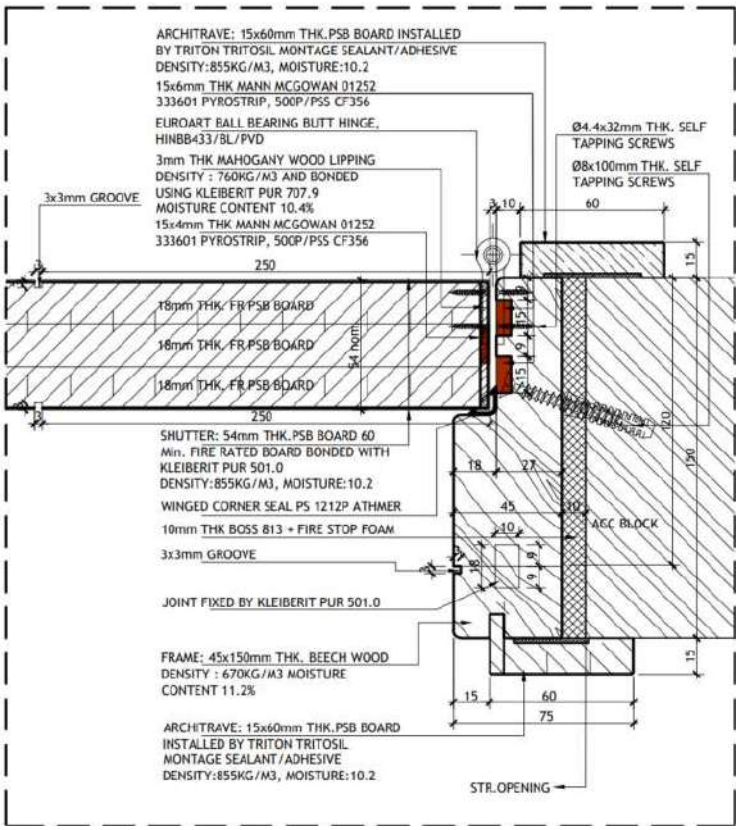


Figure 2. Door Frame details

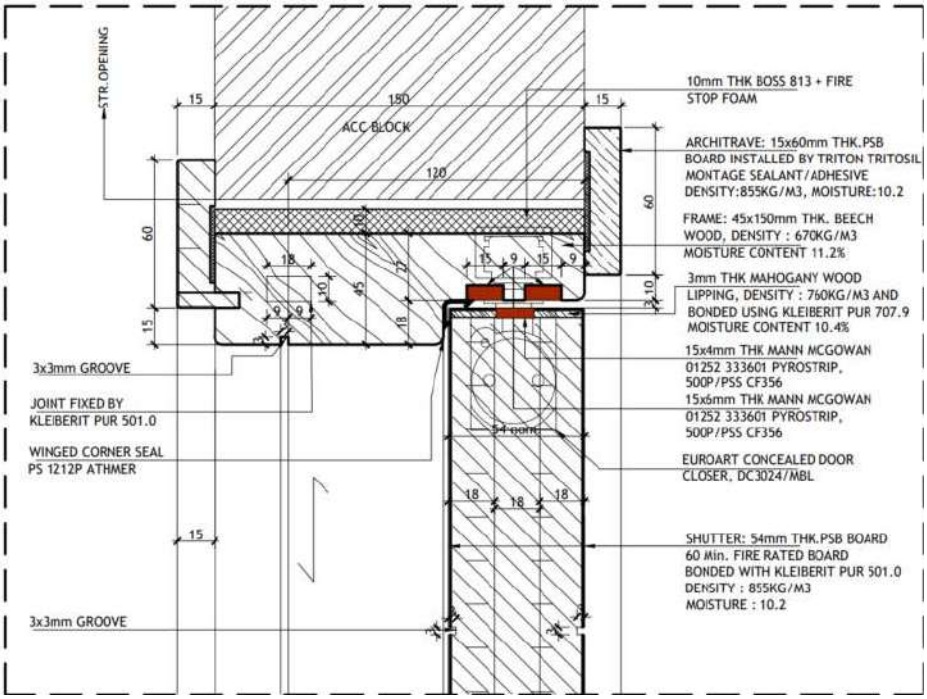


Figure 3. Door Frame details

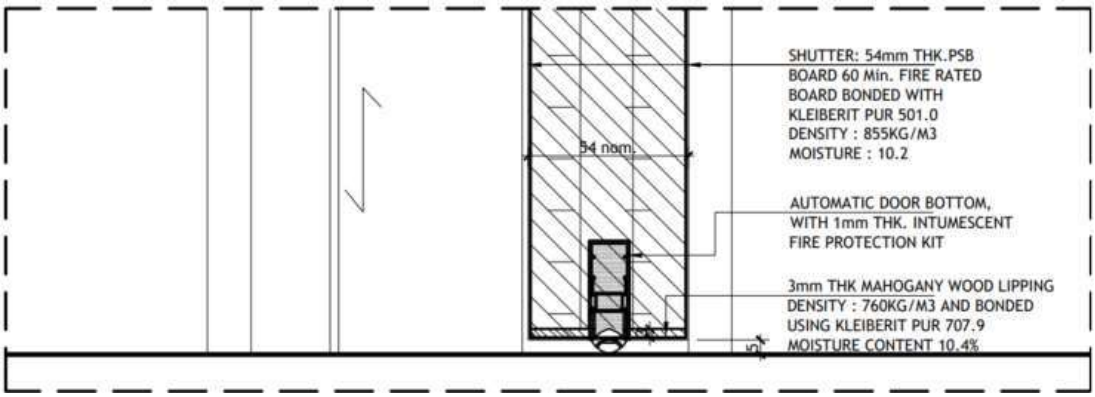


Figure 4. Bottom door leaf detail

3.1.4 Door Hardware (Door 1 & Door 2)

Table 2

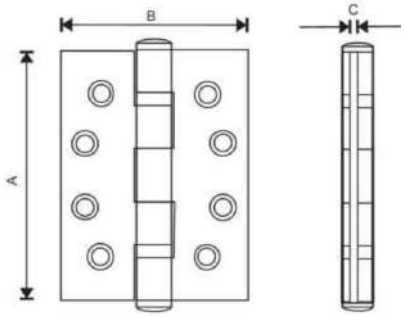
Hinge		
Manufacturer	EuroArt, UK	
Type	Two Ball Bearing Hinge Butt Hinge	
Reference	HINBB433/BL/PVD	
Dimensions	 102x76x3mm	
Quantity	Four on each specimen	
Fixing (hinge CL)	200mm and 500mm from the top of the leaf. 200mm and 1000mm from the bottom of the leaf (measured by ESL).	
Protection	Manufacturer	EuroArt, UK
	Reference	IH/1mm/433
	Thickness	1mm

Table 3

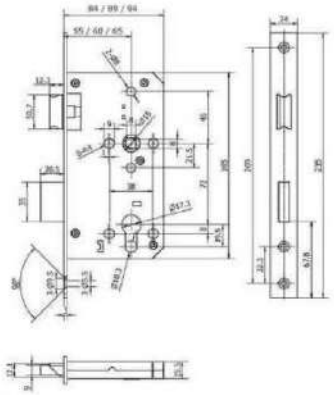
Door Lock		
Manufacturer	EuroArt, UK	
Type	Mortice Lock, 55mm Backset	
Reference	DLA7255EP/BL/PVD	
Latch Throw	12.24mm (verified by ESL)	
Dimensions	 Backset: 55mm depth, 105mm height and 15.5mm thick Lockset Keep: 24mm wide, 235mm height and 3mm thick	
Quantity	One on each specimen	
Fixing (CL)	1020mm from the bottom edge of each door leaf (measured by ESL).	
Protection	Manufacturer	EuroArt, UK
	Reference	IL/1mm/DLAXX55
	Thickness	1mm

Table 4

Door Lock Cylinder	
Manufacturer	EuroArt, UK
Type	Euro Profile Double Cylinder
Reference	CYD280/MBL
Dimensions	80mm length
Quantity	One on each specimen
Fixing	970mm from the bottom edge of each door leaf (measured by ESL).
Protection	Not applicable

Table 5

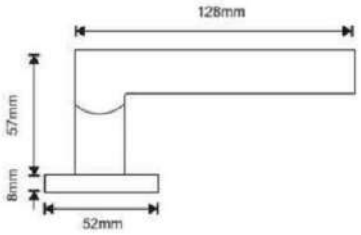
Door Handle & Escutcheon		
	Door Handle	**Escutcheon**
Manufacturer	EuroArt, UK	EuroArt
Type	Lever Handle on square rose	Escutcheon
Reference	LRS202 BL/PVD	Comes in lever handle
Dimensions	 128mm x 57mm + 8mm	53mm width x 53mm height x 9mm thick
Quantity	One on each specimen	One pair on each specimen
Fixing (CL)	Door 1 - 1050mm from the bottom edge of each door leaf (measured by ESL). Door 2 – 1045mm 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

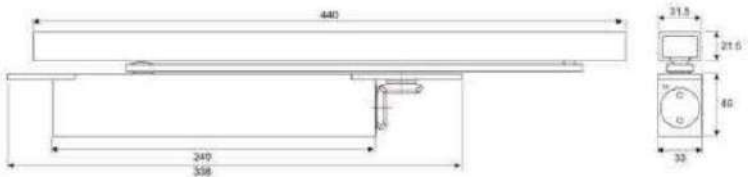
Door Closer		
Manufacturer	EuroArt, UK	
Type	Concealed Cam Action Door Closer	
Reference	DC3024/MBL	
Dimensions	 Channel-440mm length, 21.5mm depth, 31.5mm width Body-240mm length, 33mm width, 46mm depth. Body keep- 338mm length, 33mm width, 3mm thick	
Quantity	One on each specimen	
Fixing	75mm from the top edge of each door leaf (measured by ESL).	
Protection	Manufacturer	EuroArt, UK
	Reference	IC/1mm/DC3024
	Thickness	1mm

Table 7

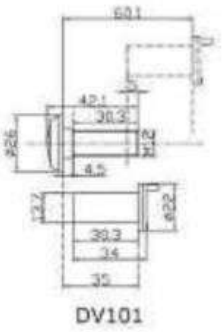
Door Viewer		
Manufacturer	EuroArt, UK	
Type	Door Viewer	
Reference	DV101/MBL	
Dimensions	 14mm dia, 26mm lens (for 35-60mm door thickness)	
Quantity	One on each specimen	
Fixing	Door 1 - 1495mm from the bottom edge of each door leaf (measured by ESL). Door 2 – 1500mm from the bottom edge of each door leaf (measured by ESL).	
Protection	Manufacturer	MannMcGowan
	Reference	Pyrostrip 400CG Graphite
	Thickness	1mm

Table 8

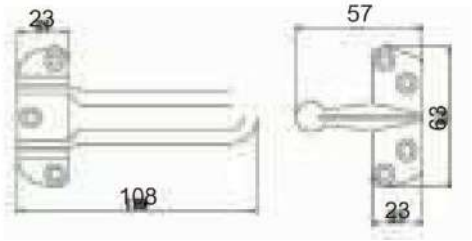
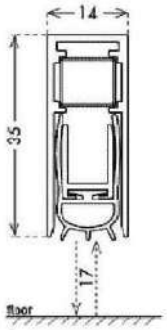
Door Guard	
Manufacturer	EuroArt, UK
Type	Door Guard
Reference	DGS200/BL/PVD
Dimensions	
Quantity	One on each specimen
Fixing	1495mm from the bottom of each door leaf (measured by ESL).
Protection	Not Applicable

Table 9

Drop Down Seal		
Manufacturer	EuroArt, UK	
Type	Superior 60	
Reference	Superior/1030	
Dimensions	 35mm depth,14mm width	
Quantity	One on each specimen	
Fixing	At the bottom center of each door leaf (measured by ESL).	
Protection	Manufacturer	EuroArt, UK
	Reference	Pyrostrip 400CG Graphine
	Thickness	1mm

3.2 Components Photographs

3.2.1 Photographs (Door 1)

Door Handle and Lock

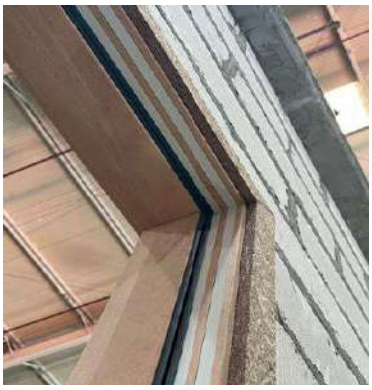
Door Closer

Door Guard

Door Viewer

Drop Down Seal

Hinge



Smoke Seal & Intumescent at Door Fame

Intumescent at Door Leaf

Foam used to fill the gap between supporting construction and frame

Sealant/adhesive used on the architrave

3.2.2 Photographs (Door 2)

Door Handle and Lock

Door Closer

Door Guard

Door Viewer

Drop Down Seal

Hinge

Smoke Seal & Intumescent at Door Fame

Intumescent at Door Leaf

Foam used to fill the gap between supporting construction and frame

Sealant/adhesive used on the architrave

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 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

4.1.1 Door 1

The doorset was installed by the test sponsor from 05 to 06 November 2024 in the previously conditioned supporting construction. The test element was conditioning for 1 day afterwards under following conditions:

- relative humidity: min RH (%): 49.1, max RH (%): 68.7
- temperature: min temp. (°C): 22.3, max temp. (°C): 30.2

4.1.2 Door 2

The doorset was installed by the test sponsor from 09 to 10 January 2025 in the previously conditioned supporting construction. The test element was conditioning for 1 day afterwards under following conditions:

- relative humidity: min RH (%): 30.3, max RH (%): 66.9
- temperature: min temp. (°C): 19.5 max temp. (°C): 28.2

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: 80.0N
- Door 2: 113.2N

4.4 Gaps measurements

Gaps measurements made in ESL laboratory are shown in Table 10.

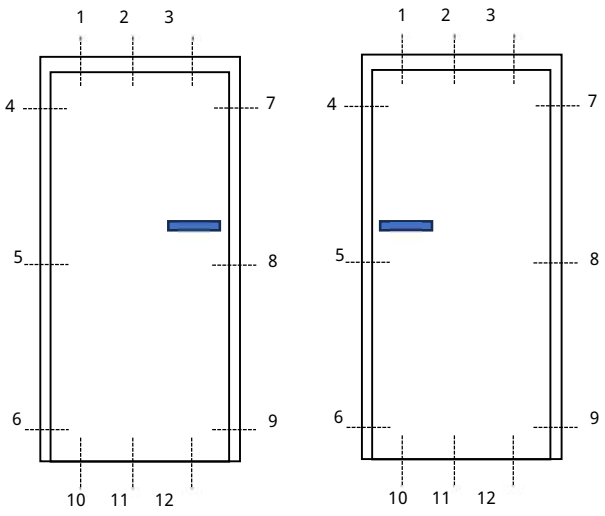


Figure 5. Gap measurement location

Table 10

No.	Door 1 Unexposed side (mm)	Door 2 Exposed side (mm)
1	1.5	1.3
2	0.89	2.24
3	1.42	1.7
4	1.48	2.66
5	1.35	1.97
6	1.61	1.93
7	2.35	1.51
8	1.92	1.44
9	2.17	2.33
10	3.64	5.74
11	4.81	5.21
12	3.36	5.36

Permitted gap sizes are shown in Table 10.

Table 11

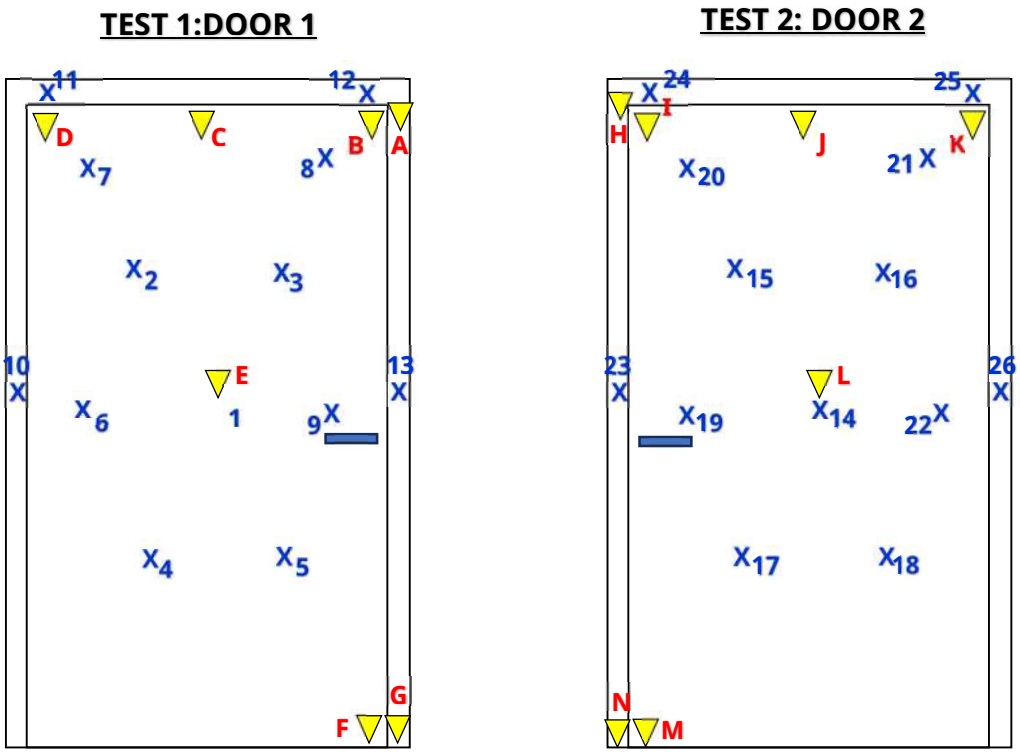
GAPS			*Measurements, mm*		
			Average	***Maximum***	***Permitted gap size***
Door 1 & 2	Along the horizontal edges	At the top	1.5	1.9	3.7
		At the bottom	4.7	5.3	7.0
	Along the vertical edges	Hinge side	2.0	2.5	4.2
		Lock side	2.0	2.3	4.1

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.

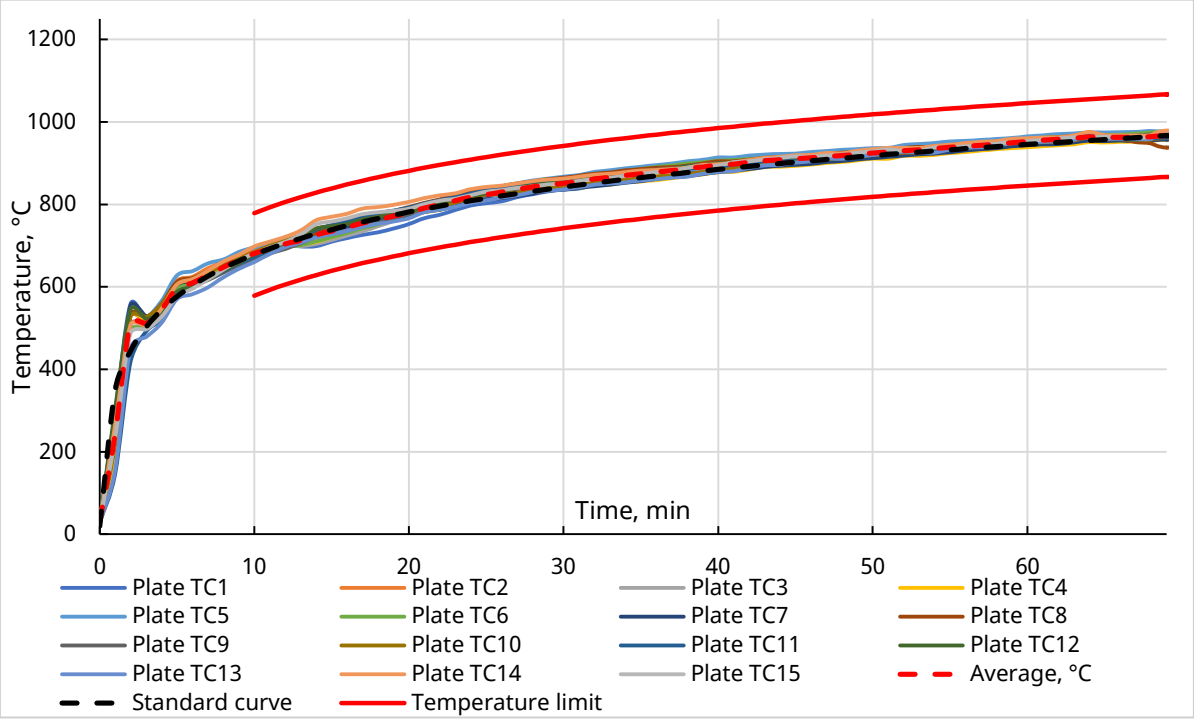


x – temperature measuring point (standard procedure)
▽ – deflection measuring point

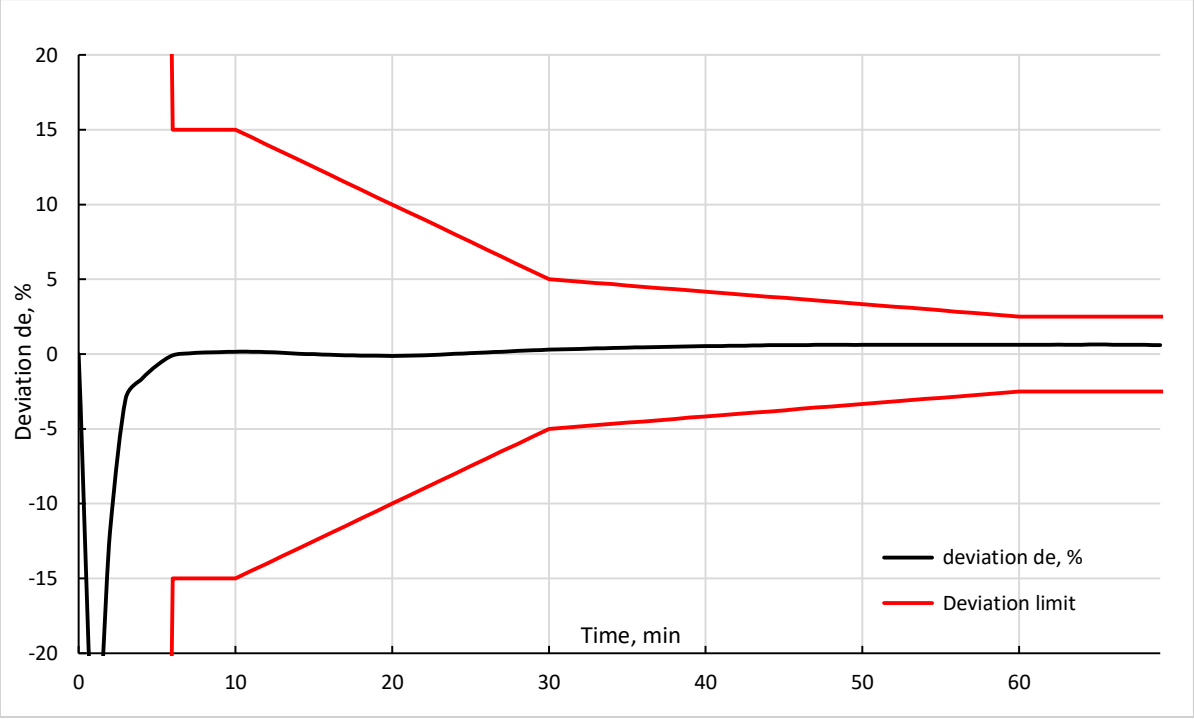
Figure 6. Scheme of the temperature and deflection measuring points on the unexposed side of the door

5 TEST RESULTS – DOOR 1

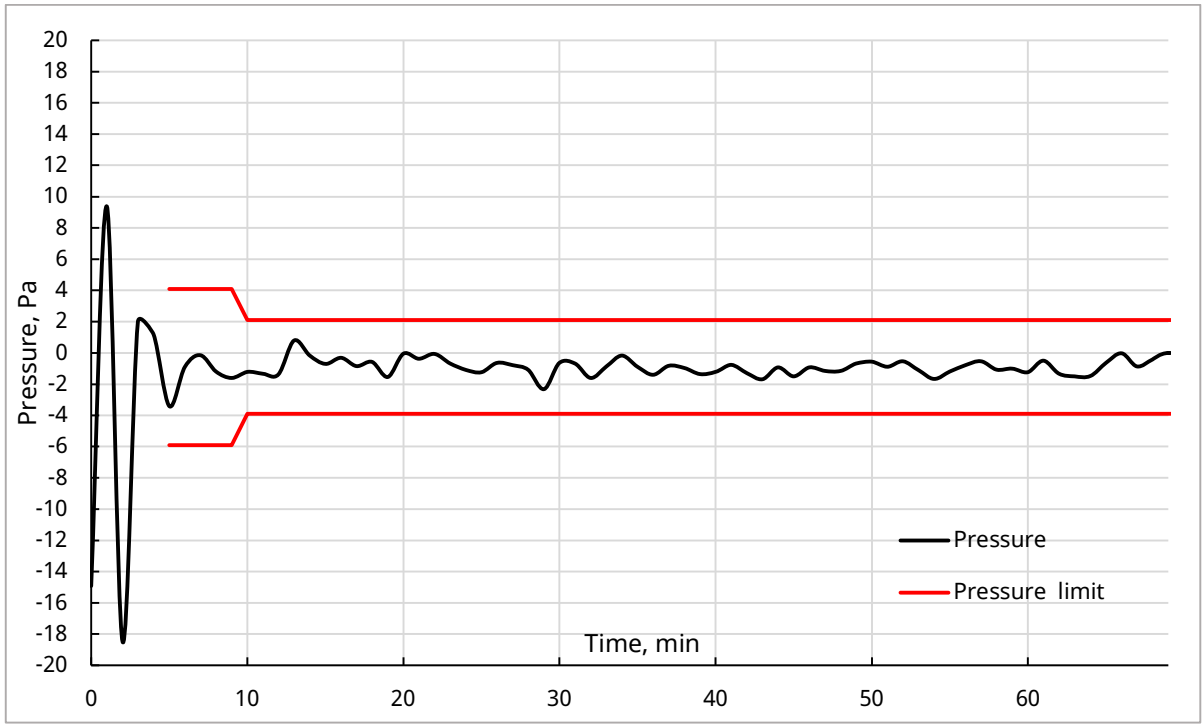
5.1 Furnace conditions



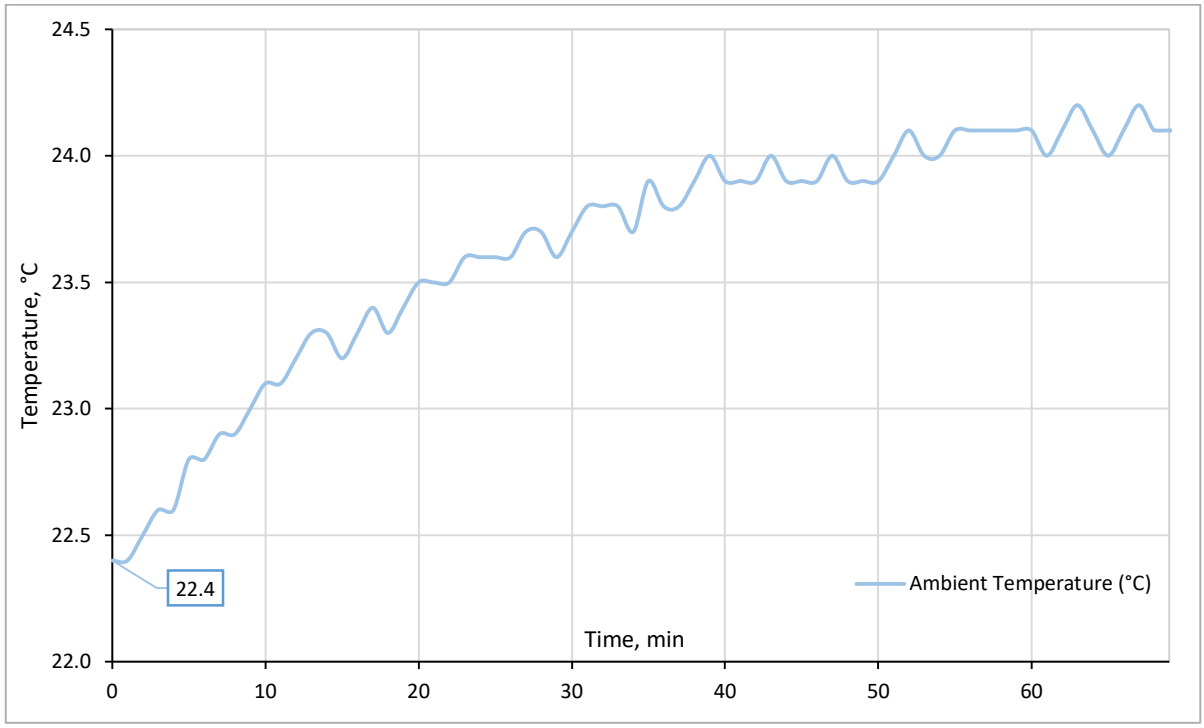
Graph 1. Temperature in the furnace during the test



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 12

Elapsed time, min	OBSERVATION
0	Commencement of Test.
4	Smoke is coming out around the edges of the leaf.
23	Smoke stains on the upper corners of the door frame.
33	Smoke is coming out from the lockset side.
37	Moisture is dripping from all hinges.
38	There is some discoloration on the right vertical gap of leaf 1, as well as on the frame and architrave.
53	Leaf is deflecting outward from the center.
68[32]	**Integrity failure. Cotton pad ignition at the door sill.**
69	End of the test, as per test sponsor request.

5.2.2 Deflection measurements

Deflection measurements are shown in Table 10.

Table 13

	Time, min.	***Deflection at the measuring point, mm***						
		A	**B**	**C**	**D**	**E**	**F**	**G**
	0	0	0	0	0	0	0	0
„+" Deflection towards the furnace	***10***	0	-2	0	-1	-7	-3	0
	20	0	-3	-1	-2	-8	-3	0
„-" Deflection outwards the furnace	***30***	0	-3	0	-1	-10	-3	0
	40	+1	-3	-3	-2	-15	-2	0
	50	+2	-1	-3	-2	-23	-2	0
	55	+2	-1	-6	-3	-25	-2	0
	60	-	-	-	-	**-29**	-	-

/1 – measurements omitted due to safety reasons.

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5.2.3 Temperature rise on the unexposed side of the door

Temperature rise on the unexposed side of the Specimen in Table 11 & Table 12.

Table 14

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	0.3	-0.2	0.0	-0.1	0.1	-0.3	0.2	0.2	0.3	-0.2	0.0	0.1	0.2	0.0	0.3	0.2
1	0.4	-0.1	0.0	-0.1	0.1	-0.2	0.2	0.3	0.4	0.0	0.0	0.3	0.3	0.0	0.4	0.3
2	0.3	-0.1	0.0	0.0	0.2	-0.1	0.3	0.4	0.4	-0.1	0.1	0.3	0.3	0.1	0.4	0.3
3	0.5	-0.1	0.1	0.1	0.2	-0.2	0.3	0.3	0.4	-0.1	0.1	0.2	0.3	0.1	0.5	0.3
4	0.5	0.0	0.0	0.2	0.2	-0.1	0.2	0.4	0.4	0.0	0.1	0.3	0.4	0.2	0.5	0.4
5	0.5	-0.1	0.0	0.1	0.3	-0.1	0.3	0.4	0.4	0.0	0.2	0.2	0.5	0.1	0.5	0.5
6	0.5	0.1	0.1	0.3	0.3	0.0	0.5	0.5	0.5	0.1	0.2	0.3	0.6	0.2	0.5	0.6
7	0.6	0.1	0.2	0.4	0.3	-0.1	0.5	0.4	0.6	0.1	0.1	0.3	0.6	0.3	0.6	0.6
8	0.6	0.2	0.2	0.4	0.5	0.1	0.5	0.6	0.6	0.1	0.2	0.4	0.6	0.4	0.6	0.6
9	0.7	0.1	0.2	0.3	0.5	0.1	0.5	0.5	0.7	0.1	0.2	0.3	0.6	0.3	0.7	0.6
10	0.7	0.2	0.2	0.3	0.6	0.1	0.6	0.5	0.7	0.2	0.2	0.3	0.7	0.4	0.7	0.7

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
11	0.7	0.2	0.3	0.3	0.6	0.2	0.7	0.7	0.7	0.2	0.2	0.4	0.6	0.4	0.7	0.6
12	0.7	0.2	0.4	0.4	0.7	0.2	0.7	0.7	0.9	0.2	0.3	0.7	0.7	0.5	0.9	0.7
13	0.8	0.3	0.4	0.5	0.7	0.3	0.7	0.6	0.9	0.3	0.2	0.5	0.8	0.5	0.9	0.8
14	0.9	0.4	0.4	0.6	0.7	0.3	1.0	0.7	0.9	0.2	0.3	0.5	0.9	0.6	1.0	0.9
15	0.8	0.4	0.4	0.6	0.7	0.2	1.0	0.7	1.0	0.3	0.3	0.5	0.9	0.6	1.0	0.9
16	1.0	0.5	0.6	0.7	0.8	0.4	1.1	0.8	1.1	0.4	0.3	0.7	0.9	0.7	1.1	0.9
17	1.1	0.5	0.7	0.7	1.0	0.5	1.2	1.0	1.3	0.3	0.4	0.9	0.9	0.8	1.3	0.9
18	1.2	0.7	0.7	0.8	0.9	0.6	1.2	1.0	1.5	0.4	0.7	1.0	1.0	0.8	1.5	1.0
19	1.4	0.8	0.9	1.0	1.1	0.7	1.3	1.3	1.6	0.4	1.3	1.0	1.1	1.0	1.6	1.3
20	1.5	1.0	1.0	1.2	1.3	0.9	1.5	1.6	1.8	0.4	2.6	1.1	1.0	1.2	1.8	2.6
21	1.8	1.2	1.3	1.4	1.5	1.1	1.6	1.7	2.2	0.5	3.7	1.3	1.1	1.4	2.2	3.7
22	1.9	1.6	1.6	1.7	1.8	1.4	1.7	2.0	2.6	0.5	6.7	1.7	1.1	1.7	2.6	6.7
23	2.1	1.7	1.8	1.9	1.9	1.6	1.8	2.2	3.0	0.6	7.2	1.5	1.2	1.9	3.0	7.2
24	2.5	2.0	2.1	2.2	2.1	2.0	2.0	2.4	3.3	0.6	7.2	1.7	1.2	2.2	3.3	7.2
25	2.7	2.2	2.4	2.5	2.5	2.2	2.2	2.9	3.6	0.6	6.5	2.0	1.2	2.5	3.6	6.5

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
26	3.1	2.5	2.7	2.8	2.7	2.5	2.4	3.1	4.3	0.7	5.7	2.1	1.2	2.8	4.3	5.7
27	3.4	2.9	3.1	3.2	3.1	2.7	2.5	3.4	4.6	0.7	5.3	2.1	1.3	3.1	4.6	5.3
28	3.8	3.2	3.5	3.6	3.5	3.2	2.8	3.9	5.3	0.6	5.0	2.4	1.3	3.5	5.3	5.0
29	4.2	3.6	3.9	3.8	3.8	3.6	3.1	4.4	5.8	0.7	5.0	2.6	1.5	3.9	5.8	5.0
30	4.7	4.0	4.3	4.3	4.2	4.0	3.3	4.7	6.3	0.8	5.2	2.9	1.6	4.3	6.3	5.2
31	5.1	4.4	4.8	4.9	4.6	4.4	3.5	5.2	6.9	0.8	5.1	2.9	1.7	4.8	6.9	5.1
32	5.7	5.0	5.4	5.4	5.1	4.9	4.0	5.8	7.7	0.9	5.5	3.8	1.9	5.3	7.7	5.5
33	6.2	5.5	6.1	5.9	5.6	5.4	4.2	6.4	8.3	0.9	5.7	6.5	2.2	5.9	8.3	6.5
34	6.7	5.9	6.6	6.4	6.0	6.0	4.5	7.1	9.3	0.9	5.7	9.8	3.4	6.3	9.3	9.8
35	7.5	6.6	7.4	7.1	6.7	6.6	4.9	7.9	10.1	1.0	6.1	11.6	4.7	7.1	10.1	11.6
36	8.2	7.3	8.4	8.0	7.5	7.4	5.4	8.9	11.3	1.3	7.3	12.4	5.4	7.9	11.3	12.4
37	9.1	8.2	9.3	8.8	8.2	8.3	5.8	9.6	12.2	1.5	8.3	15.1	6.2	8.7	12.2	15.1
38	9.9	9.1	10.4	9.8	9.1	9.3	6.4	10.5	13.3	2.1	9.7	17.2	7.5	9.7	13.3	17.2
39	11.1	10.0	11.4	10.7	9.9	10.3	7.4	11.8	14.8	2.1	10.8	18.1	8.5	10.6	14.8	18.1
40	12.2	10.9	12.5	11.8	10.9	11.5	7.9	13.0	16.4	2.3	12.0	18.1	10.0	11.7	16.4	18.1

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
41	13.3	11.8	13.7	13.0	12.5	12.4	8.1	14.4	18.2	2.8	12.4	17.4	10.0	12.9	18.2	17.4
42	14.5	12.8	14.7	14.1	13.2	13.7	9.1	15.3	18.6	2.6	13.6	20.7	11.0	13.9	18.6	20.7
43	15.5	13.6	15.8	15.2	14.1	14.5	9.9	16.5	19.9	2.8	14.7	21.3	11.7	14.9	19.9	21.3
44	16.6	14.7	16.8	16.3	15.2	15.7	10.2	17.2	20.9	2.4	15.3	21.7	12.3	15.9	20.9	21.7
45	17.6	15.5	17.9	17.3	16.2	16.6	11.7	18.6	22.4	2.9	15.6	19.1	11.7	16.9	22.4	19.1
46	18.7	16.3	18.8	18.4	17.2	17.2	11.3	19.6	23.5	4.3	16.1	17.5	12.5	17.9	23.5	17.5
47	19.8	17.2	19.8	19.4	17.6	18.2	12.0	20.8	25.4	3.8	16.5	15.9	11.6	18.8	25.4	16.5
48	20.7	18.1	20.8	20.4	18.3	19.1	12.0	21.8	26.4	4.2	17.0	16.3	12.3	19.7	26.4	17.0
49	21.7	18.9	21.8	21.4	18.5	20.0	12.1	22.7	27.5	3.7	17.4	16.4	12.8	20.5	27.5	17.4
50	22.7	19.7	22.7	22.3	19.2	20.8	12.8	23.4	28.8	4.1	16.6	18.3	12.6	21.4	28.8	18.3
51	23.4	20.5	23.4	23.0	19.7	21.7	13.5	24.3	30.0	4.2	16.8	17.4	13.6	22.0	30.0	17.4
52	24.4	21.3	24.2	23.8	20.5	22.3	13.7	25.4	31.2	4.1	16.6	17.8	14.7	22.9	31.2	17.8
53	25.3	22.2	25.1	24.9	21.3	23.3	13.5	26.2	32.9	5.0	16.3	17.7	14.3	23.8	32.9	17.7
54	26.1	22.9	26.0	25.7	21.7	24.1	13.9	27.0	34.5	4.8	16.2	16.6	14.8	24.5	34.5	16.6
55	26.9	23.6	26.8	26.4	22.3	24.9	14.5	27.7	36.0	5.1	17.1	15.6	15.2	25.2	36.0	17.1

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
56	27.8	24.5	27.6	27.3	22.2	25.7	14.8	28.7	37.6	4.9	16.8	15.5	15.5	25.9	37.6	16.8
57	28.7	25.2	28.5	28.2	22.2	26.5	15.2	29.3	39.0	5.2	16.8	15.1	15.9	26.5	39.0	16.8
58	29.7	26.0	29.3	29.0	22.5	27.0	15.3	30.1	40.7	5.0	18.0	15.0	15.1	27.3	40.7	18.0
59	30.7	26.9	30.2	30.0	23.0	27.9	15.6	30.9	42.2	5.5	19.1	15.3	14.9	28.1	42.2	19.1
60	31.9	27.7	31.1	30.7	23.9	28.7	16.1	31.8	43.8	6.0	19.0	14.8	14.7	29.0	43.8	19.0
61	33.3	28.6	31.9	31.3	28.4	29.6	17.0	32.4	45.2	5.7	19.4	15.0	15.5	30.7	45.2	19.4
62	35.2	29.3	32.6	32.3	26.5	30.5	16.0	33.4	46.5	5.8	19.8	14.4	15.0	31.1	46.5	19.8
63	38.7	30.3	34.1	33.4	23.8	31.7	16.5	34.9	49.8	6.0	19.0	14.9	14.5	32.0	49.8	19.0
64	46.4	31.7	36.2	35.3	26.4	33.3	16.6	36.4	52.8	6.4	17.8	15.4	14.1	35.2	52.8	17.8
65	68.2	33.3	38.5	37.1	29.1	35.7	17.4	38.7	56.9	6.6	17.5	16.2	14.4	41.2	68.2	17.5
66	75.3	35.5	41.6	39.7	33.0	39.1	18.5	41.3	61.2	7.1	17.6	16.6	14.9	45.0	75.3	17.6
67	75.5	38.4	46.3	42.9	38.5	43.6	19.3	44.9	65.0	7.6	17.8	19.6	15.2	48.3	75.5	19.6
68	75.5	42.6	52.2	47.6	50.8	51.7	20.3	49.7	68.1	7.9	17.9	20.2	15.7	53.7	75.5	20.2
69	74.9	48.5	59.8	54.6	57.1	62.4	22.1	56.1	70.5	8.3	18.5	20.8	16.2	59.0	74.9	20.8

6 PHOTOGRAPHS – DOOR 1

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. 68[32] minutes of the test. Cotton pad ignition at the door sill

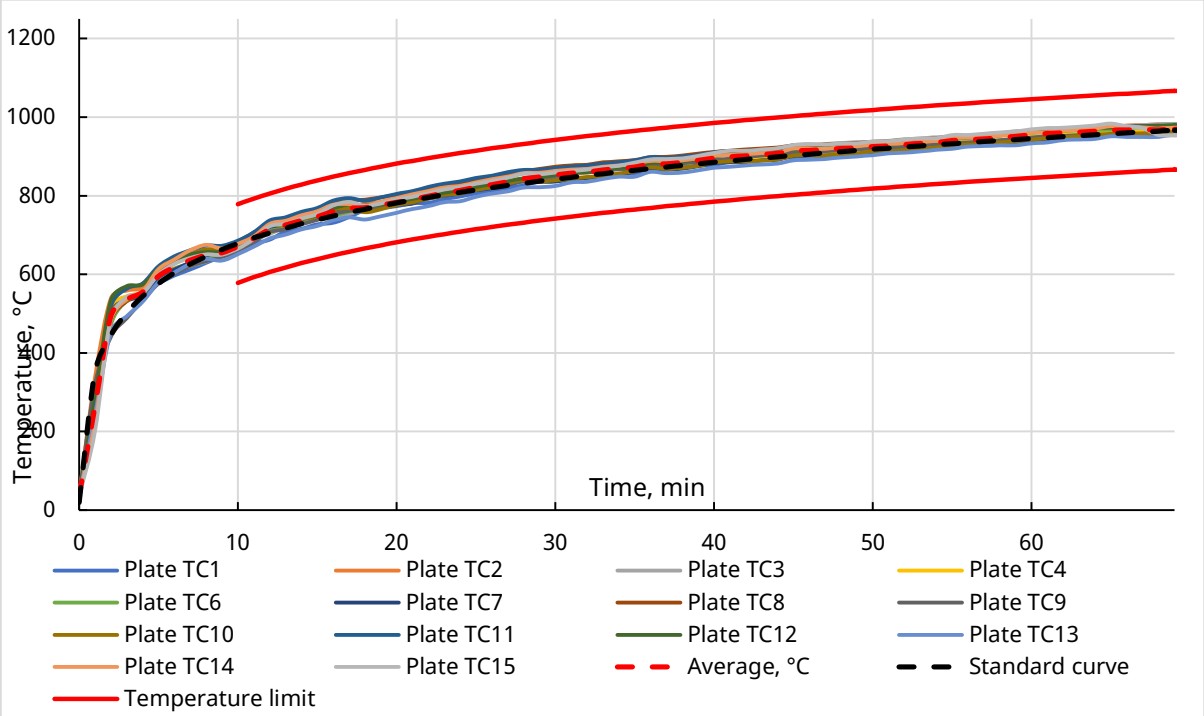
Photo 8. End of the test

6.2 Exposed side view of the test specimens

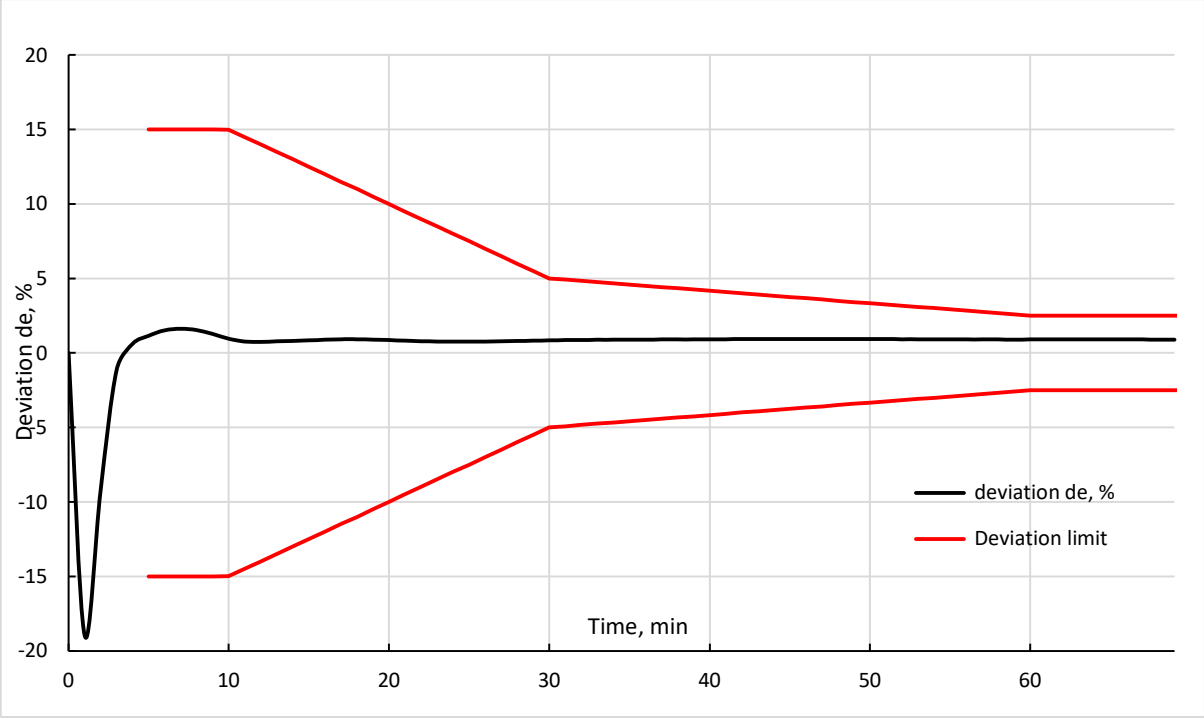
Photo 9. Before the test

7 TEST RESULTS – DOOR 2

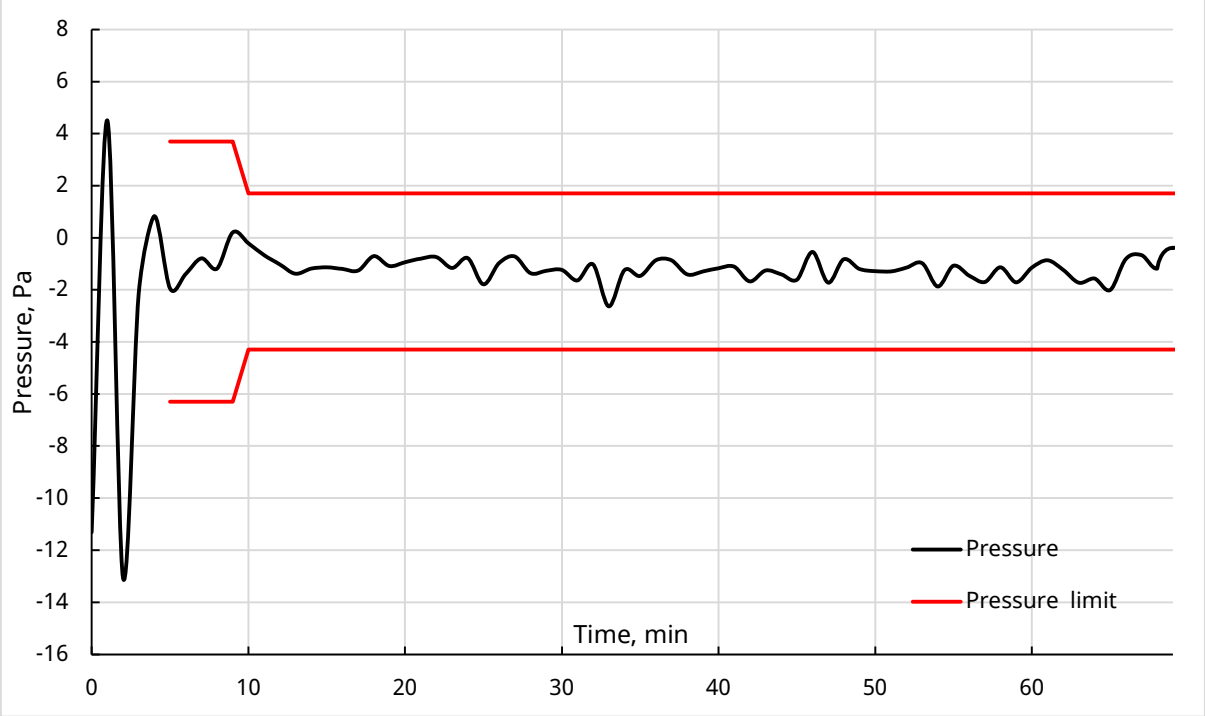
7.1 Furnace conditions



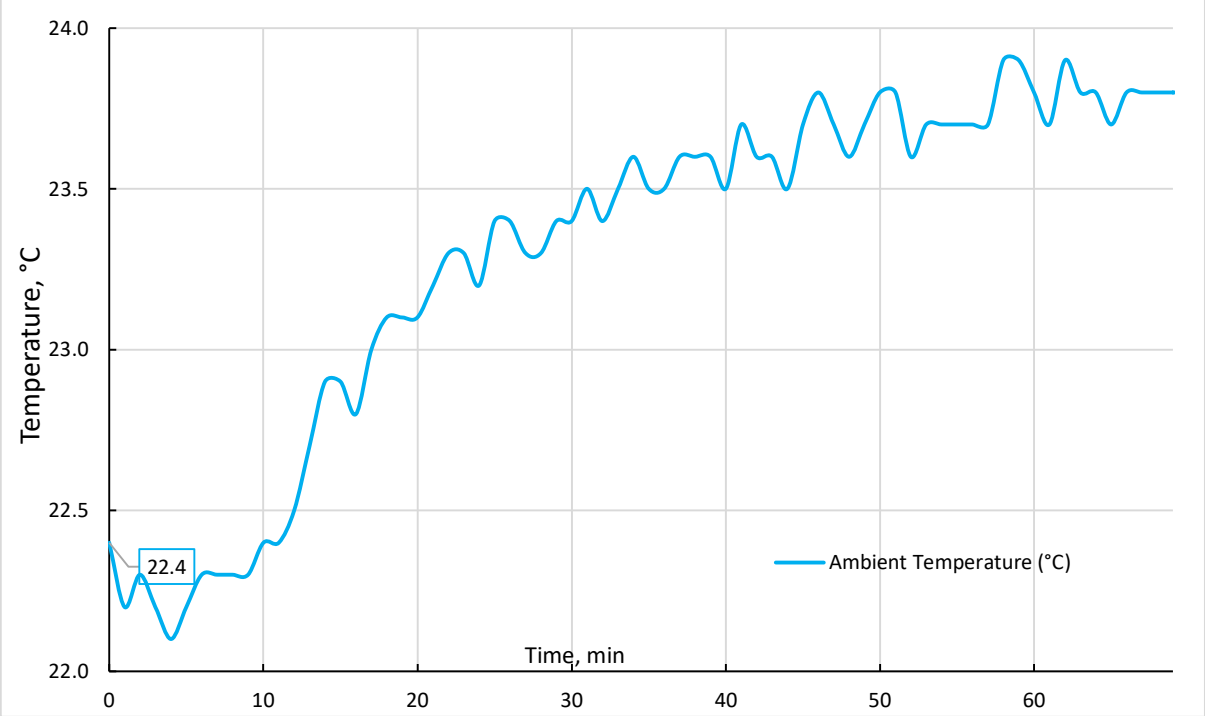
Graph 5. Temperature in the furnace during the test



Graph 6. Deviation d_e and tolerance limits of heating deviation during the test



Graph 7. Pressure inside the furnace during the test.



Graph 8. Ambient temperature during the test

7.2 Fire test results

7.2.1 Observations

Table 15

Elapsed time, min	OBSERVATION
0	Commencement of Test.
3	Smoke is emanating out around the edges of the leaf.
8	Smoke continues to emanate from the edges of the leaf.
25	Discoloration on the upper surface of the leaf.
27	Smoke is emanating from the keyhole.
32	The door viewer's intumescent protection has activated, and some charred particles are beginning to leak out.
37	Discoloration around the door viewer.
38	Discoloration around the escutcheon.
43	Discoloration on the horizontal top of the frame.
59	Cotton pad application near the top of the lockset. No ignition or charring.
60	Cotton pad application on the top left corner. No ignition or charring.
60[15]	**Integrity failure. Sustained flaming at the top right vertical edge.**
69	End of the test, as per test sponsor request.

7.2.2 Deflection measurements

Deflection measurements are shown in Table 16.

Table 16

	Time, min.	***Deflection at the measuring point, mm***						
		H	**I**	**J**	**K**	**L**	**M**	**N**
	0	0	0	0	0	0	0	0
„+" Deflection towards the furnace	***10***	+2	0	+2	0	+6	-2	0
	20	+2	0	+2	+1	+4	-2	0
„-" Deflection outwards the furnace	***30***	+3	+1	+5	+1	+5	-2	0
	40	+3	+2	+2	+3	+1	-2	0
	50	+3	+5	+3	+5	-4	-1	0
	55	+3	+7	+1	+5	-10	-1	0
	60	-	-	-	-	**-38**	-	-

/1 – measurements omitted due to safety reason

7.2.3 Temperature rise on the unexposed side of the door

Temperature rise on the unexposed side of the Specimen in Table 17.

Table 17

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*						
	14	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*°C*	*°C*	*°C*
0	0.0	0.3	0.4	0.4	0.1	0.1	0.2	0.2	-0.2	-0.4	-0.4	-0.1	-0.3	0.0	0.3	0.2
1	0.1	0.3	0.4	0.5	0.1	0.2	0.4	0.6	-0.3	-0.3	-0.5	0.1	-0.3	0.0	0.4	0.3
2	0.1	0.4	0.4	0.6	0.1	0.2	0.2	0.5	-0.3	-0.5	-0.5	0.0	-0.3	0.1	0.4	0.3
3	0.1	0.4	0.5	0.7	0.2	0.2	0.4	0.7	-0.2	-0.4	-0.4	0.2	-0.3	0.1	0.5	0.3
4	0.0	0.4	0.4	0.6	0.2	0.2	0.4	0.9	-0.2	-0.4	-0.4	0.3	-0.2	0.2	0.5	0.4
5	0.1	0.4	0.5	0.6	0.1	0.2	0.5	0.9	-0.1	-0.3	-0.3	0.3	-0.2	0.1	0.5	0.5
6	0.2	0.6	0.5	0.7	0.3	0.3	0.5	0.7	-0.1	-0.3	-0.3	0.3	-0.3	0.2	0.5	0.6
7	0.3	0.6	0.6	0.6	0.2	0.3	0.6	0.7	-0.1	-0.3	-0.3	0.4	-0.3	0.3	0.6	0.6
8	0.3	0.6	0.7	0.7	0.3	0.3	0.6	0.7	-0.1	-0.3	-0.2	0.6	-0.2	0.4	0.6	0.6
9	0.3	0.6	0.7	0.6	0.2	0.4	0.6	0.7	0.0	-0.3	-0.3	0.4	-0.2	0.3	0.7	0.6
10	0.3	0.7	0.8	0.7	0.3	0.5	0.7	0.8	0.1	-0.2	-0.3	0.7	0.0	0.4	0.7	0.7
11	0.4	0.7	0.7	0.8	0.4	0.4	0.7	0.9	0.1	-0.1	-0.1	0.8	0.0	0.4	0.7	0.6
12	0.4	0.8	0.8	0.8	0.4	0.6	0.9	0.9	0.2	-0.1	-0.2	1.2	0.1	0.5	0.9	0.7
13	0.5	0.9	1.0	0.9	0.5	0.7	0.9	1.0	0.3	-0.1	-0.1	1.0	0.2	0.5	0.9	0.8

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	ΔT_{ma} $_{frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
14	0.6	1.0	1.1	1.0	0.7	0.7	1.0	1.2	0.4	-0.1	-0.2	0.9	0.1	0.6	1.0	0.9
15	0.7	1.1	1.1	1.1	0.7	0.8	1.1	1.2	0.4	-0.1	-0.2	1.5	0.3	0.6	1.0	0.9
16	0.8	1.1	1.3	1.3	0.8	1.1	1.2	1.4	0.5	0.0	-0.1	0.8	0.3	0.7	1.1	0.9
17	0.9	1.2	1.4	1.3	0.8	1.1	1.3	1.4	0.6	0.0	0.0	1.0	0.3	0.8	1.3	0.9
18	1.0	1.4	1.5	1.5	1.0	1.4	1.5	1.7	0.7	0.0	-0.1	1.0	0.3	0.8	1.5	1.0
19	1.3	1.6	1.8	1.6	1.2	1.6	1.7	2.0	0.8	0.0	0.0	0.7	0.3	1.0	1.6	1.3
20	1.5	1.8	2.0	1.9	1.5	1.9	2.0	2.2	0.9	0.0	0.0	0.7	0.4	1.2	1.8	2.6
21	1.7	2.1	2.4	2.1	1.7	2.3	2.3	2.6	1.0	0.0	0.0	0.6	0.5	1.4	2.2	3.7
22	2.0	2.3	2.6	2.5	2.0	2.7	2.6	3.0	1.2	0.0	0.1	0.8	0.6	1.7	2.6	6.7
23	2.3	2.7	3.0	2.7	2.3	3.1	2.9	3.3	1.5	0.1	0.2	0.7	0.6	1.9	3.0	7.2
24	2.6	2.9	3.3	3.1	2.6	3.5	3.3	3.9	1.5	0.1	0.2	0.6	0.6	2.2	3.3	7.2
25	3.1	3.3	3.9	3.4	3.0	3.9	3.7	6.8	1.7	0.1	0.2	0.6	0.6	2.5	3.6	6.5
26	3.5	3.7	4.1	3.7	3.3	4.4	4.1	10.7	1.9	0.1	0.4	0.9	0.7	2.8	4.3	5.7
27	3.9	4.1	4.5	4.1	3.8	5.0	4.6	11.2	2.1	0.1	0.4	0.9	0.8	3.1	4.6	5.3
28	4.3	4.5	5.0	4.7	4.3	5.6	5.0	11.2	2.4	0.2	0.6	0.9	0.7	3.5	5.3	5.0
29	4.9	5.1	5.6	5.2	4.8	6.2	5.7	10.4	2.6	0.2	0.7	0.9	0.7	3.9	5.8	5.0

Elapsed time	TEMPERATURE RISE AT POINTS, °C													ΔT_{avg} pts.: 1-5,	ΔT_{max} pts.: Std. 1-9	$\Delta T_{ma\ frame}$ pts.: 10-13
	Standard procedure															
	Doorset									Frame						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
30	5.5	5.6	6.2	5.8	5.5	7.0	6.3	10.1	3.0	0.2	0.7	1.0	0.7	4.3	6.3	5.2
31	6.0	6.2	6.8	6.3	6.1	7.8	7.0	9.9	3.3	0.3	1.0	1.2	1.1	4.8	6.9	5.1
32	6.7	7.1	7.9	7.2	7.0	8.8	7.7	9.9	3.3	0.2	1.2	1.3	1.0	5.3	7.7	5.5
33	7.4	7.8	8.7	7.8	7.8	9.9	8.5	10.1	3.8	0.3	1.4	1.3	1.3	5.9	8.3	6.5
34	8.3	8.7	9.6	8.8	8.8	11.2	9.4	10.6	4.3	0.3	1.7	1.6	1.3	6.3	9.3	9.8
35	9.2	9.7	10.9	9.8	9.6	12.5	10.5	11.1	4.7	0.3	1.7	1.7	1.3	7.1	10.1	11.6
36	10.1	10.7	12.0	10.8	10.7	14.0	11.4	11.9	5.0	0.4	1.9	1.7	1.3	7.9	11.3	12.4
37	11.1	11.7	13.0	11.8	11.7	15.4	12.5	12.7	5.5	0.3	1.9	1.8	1.4	8.7	12.2	15.1
38	12.1	12.9	14.4	13.1	12.7	16.8	13.5	13.5	6.0	0.4	2.1	2.0	1.3	9.7	13.3	17.2
39	13.1	13.8	15.5	14.2	13.8	18.3	14.7	14.5	6.5	0.5	2.4	2.2	1.4	10.6	14.8	18.1
40	14.0	14.8	16.5	15.1	14.8	19.9	15.6	15.3	6.9	0.4	2.5	2.3	1.5	11.7	16.4	18.1
41	15.1	15.9	17.6	16.4	15.9	21.4	16.8	16.3	7.2	0.4	2.8	2.6	1.3	12.9	18.2	17.4
42	16.1	16.8	18.7	17.5	16.9	23.0	18.0	17.3	7.4	0.5	3.1	2.8	1.4	13.9	18.6	20.7
43	17.1	18.0	19.7	18.6	17.8	24.5	19.2	18.2	7.9	0.6	3.2	3.0	1.5	14.9	19.9	21.3
44	18.0	18.9	20.7	19.5	18.7	26.0	20.1	19.2	8.3	0.6	3.6	3.2	1.6	15.9	20.9	21.7
45	18.9	19.9	21.7	20.5	19.7	27.6	21.4	20.2	9.6	0.6	3.9	3.4	1.6	16.9	22.4	19.1

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						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
46	19.7	20.9	22.7	21.6	20.8	29.2	22.6	21.2	9.7	0.7	4.1	3.4	1.6	17.9	23.5	17.5
47	20.8	22.1	23.8	22.6	21.6	30.8	23.8	22.1	9.7	0.8	4.4	4.0	1.5	18.8	25.4	16.5
48	21.6	23.1	24.6	23.5	22.5	32.4	24.9	23.0	9.1	0.8	4.9	4.3	1.5	19.7	26.4	17.0
49	22.7	24.1	25.6	24.3	23.6	33.2	25.6	24.1	9.5	0.7	5.2	4.4	1.7	20.5	27.5	17.4
50	23.7	25.1	26.5	25.4	24.4	34.8	26.8	25.3	9.8	0.9	5.7	4.8	1.7	21.4	28.8	18.3
51	24.6	26.0	27.2	26.5	25.5	36.4	28.0	26.3	9.8	0.9	5.1	5.3	1.4	22.0	30.0	17.4
52	25.6	26.8	28.3	27.2	26.8	37.2	28.5	27.7	11.1	1.2	6.1	5.2	2.3	22.9	31.2	17.8
53	26.6	27.7	29.3	27.9	28.2	38.8	29.4	29.2	12.8	1.1	6.5	5.9	2.2	23.8	32.9	17.7
54	27.6	28.7	30.5	29.0	29.2	41.3	30.7	25.3	23.7	1.3	7.4	7.2	2.3	24.5	34.5	16.6
55	28.8	29.7	31.9	30.1	30.4	44.1	31.5	30.4	28.6	1.3	7.7	8.1	2.5	25.2	36.0	17.1
56	30.1	31.3	33.9	31.8	31.8	49.5	33.2	43.5	27.3	1.4	8.9	9.6	1.8	25.9	37.6	16.8
57	31.3	33.0	34.8	33.3	34.2	53.8	33.9	51.2	30.8	1.6	9.5	10.3	2.7	26.5	39.0	16.8
58	33.1	35.6	36.6	35.9	37.0	62.7	35.9	56.9	31.4	1.6	10.6	13.3	2.5	27.3	40.7	18.0
59	35.4	39.4	39.2	40.0	40.9	69.0	37.6	61.3	31.5	1.6	11.6	18.5	2.7	28.1	42.2	19.1
60	38.4	45.1	43.4	49.3	45.1	73.5	40.9	73.8	32.1	1.9	12.6	29.4	2.3	29.0	43.8	19.0
61	42.5	53.5	49.6	75.2	50.1	73.8	54.4	98.4	31.4	2.1	13.4	39.3	3.2	30.7	45.2	19.4

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						
	14	15	16	17	18	19	20	21	22	23	24	25	26	°C	°C	°C
62	35.2	29.3	32.6	32.3	26.5	30.5	16.0	33.4	46.5	5.8	19.8	14.4	15.0	31.1	46.5	19.8
63	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
64	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
65	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
66	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
67	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
68	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/
69	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/	*/

*Note: */ - Thermocouples were disconnected at 62mins due to integrity failure.*

8 PHOTOGRAPHS – DOOR 2

8.1 Unexposed side view of the test specimens

Photo 10. Before the test.

Photo 11. Test specimen at 10-minutes

Photo 12. Test specimen at 20-minutes

Photo 13. Test specimen at 30-minutes

Photo 14. Test specimen at 40-minutes

Photo 15. 50-minutes of the test

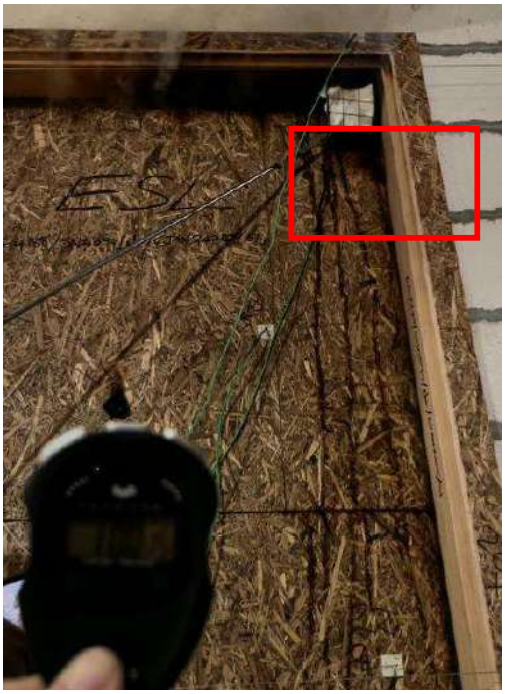


Photo 16. 60[15]minutes of the test. Sustained flaming at the top rifht vertical edge

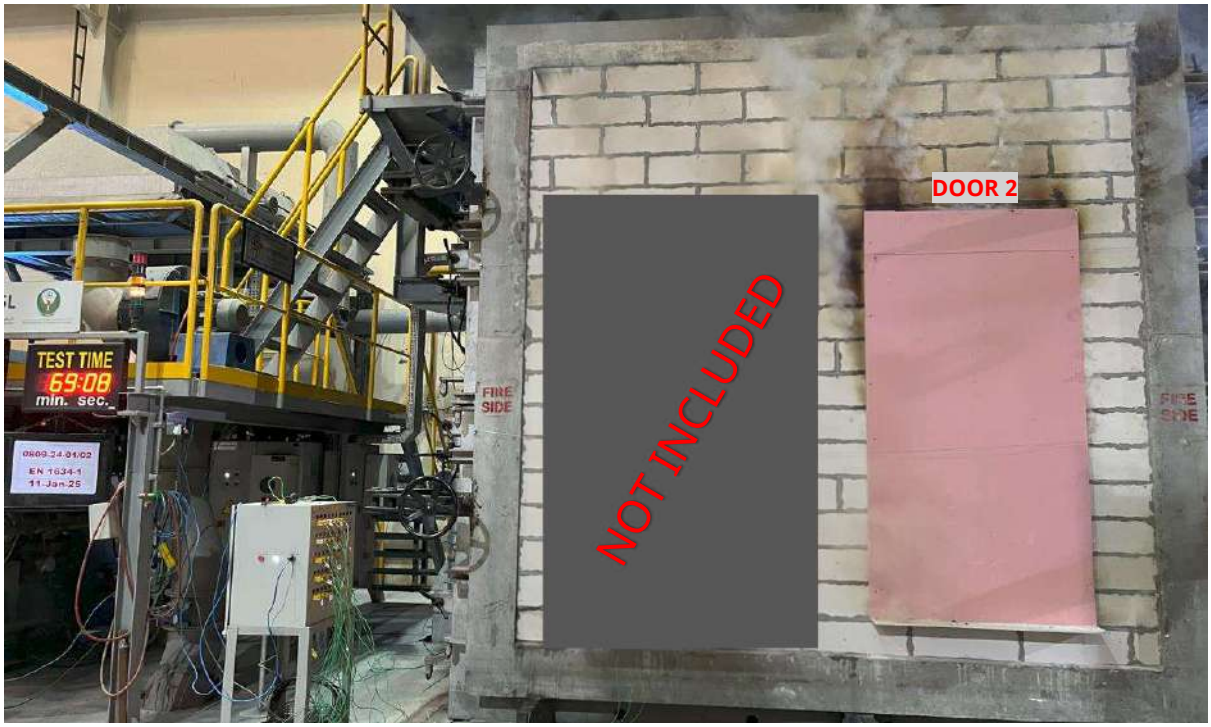


Photo 17. End of the test. Door 2 was sealed off at 64 minutes due to sustained flames.

8.2 Exposed side view of the test specimens

Photo 18. Before the test

9 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 1-18, Graphs 1-8, Figures 1-6, and Photo 1-18 refer only to the construction described in clause 3 of herein test report.

Table 18. 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	**60**[15] Sustained flaming at the top right vertical edge	**68 minutes**	**60 minutes**
	Gaps disqualifying the product	No failure	No failure		
	Ignition of the cotton pad	**68**[32] ignition of cotton pad at door sill.	No failure		
Insulation *(Standard procedure)*	Average temperature rise (≤140 °C)	No failure	No failure	**68 minutes** [(1)]	**60 minutes**
	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**	**-38mm in Point L at 60th minute**
Duration of the test: 69 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.

10 FIELD OF DIRECT APPLICATION OF TEST RESULTS

10.1 General

This is valid for the direct field of application of the test results Latched Single Swing, Single Acting Single Leaf Fire-Rated Wooden Composite Door with Harwood Frame, 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.

10.2 Materials and construction

10.2.1 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.

10.2.2 Specific restrictions on materials and construction

10.2.2.1 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.

10.2.3 Decorative finishes

10.2.3.1 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.

10.2.3.2 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).

10.2.3.3 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.

10.2.4 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.

10.3 Permissible size variations

10.3.1 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.

10.3.2 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 13.

Table 19 —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 **60 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 19.

10.3.3 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.

10.3.4 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.

10.3.5 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.

10.3.6 Gaps

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

Table 20

GAPS			*Measurements, mm*		
			Average	***Maximum***	***Permitted gap size***
Door 1 & Door 2	Along the horizontal edges	At the top	2.6	3.1	5.0
		At the bottom	4.9	6	7.5
	Along the vertical edges	Hinge side	2.2	2.7	4.4
		Latch edge	2.8	3.4	5.1

10.4 Supporting constructions

10.4.1 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.

10.4.2 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.

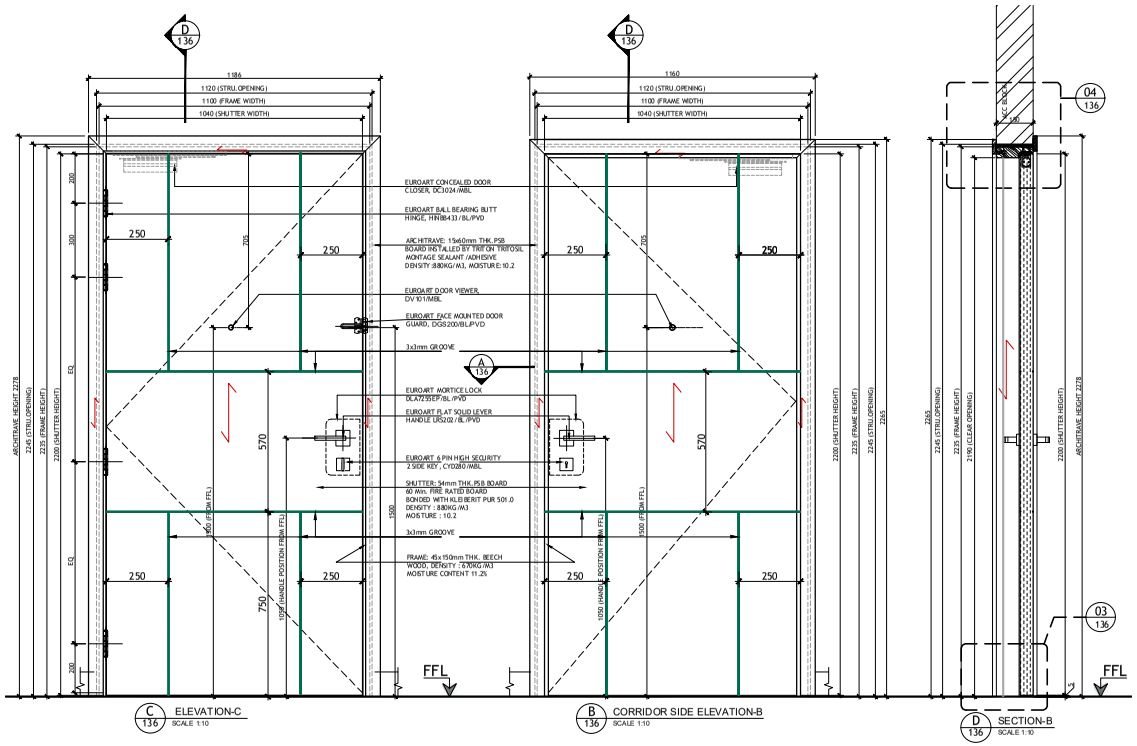
Note: The rules above assume that the fixing methods used in each type of supporting construction are appropriate to that construction.

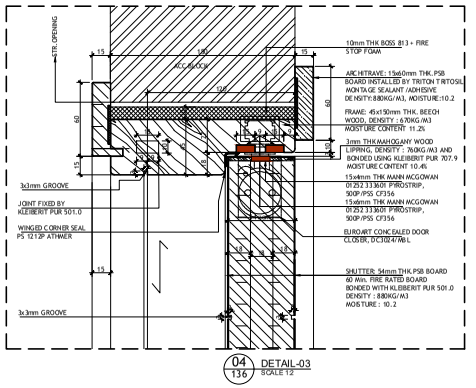
Further details of the field of direct application of test results are described in EN 1634-1:2014+A1:2018.

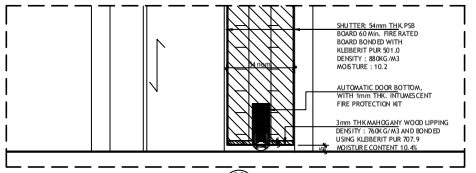
11 DRAWINGS

The unpaginated document is a copy of the drawings from Abanos Interior Fit-Out & Joinery, specifically the drawing reference ID:

- No. ABS00071-STD-FR-60-PSB-136 (dated 14-01-2025)

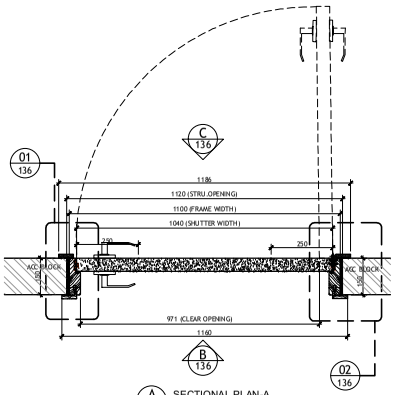


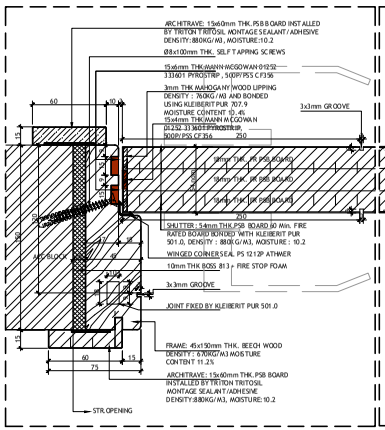


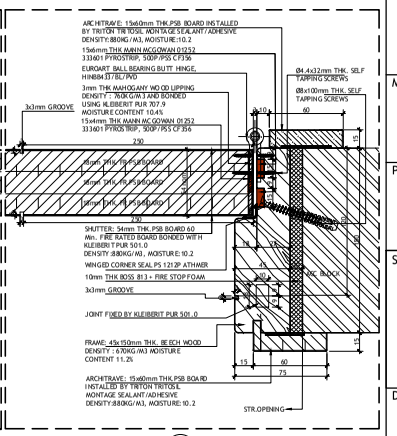


MATERIAL SPECIFICATION	
FRAME	150x45mm THK. BEECH WOOD DENSITY : 670KG/M3 MOISTURE CONTENT 11.2%
SHUTTER	54mm THK. PSB BOARD 60 Min. FIRE RATED BOARD BONDED WITH KLEIBERIT PUR 501.0, DENSITY : 880KG/M3, MOISTURE : 10.2
ARCHITRAVE	15mm THK.PSB BOARD, DENSITY:880KG/M3, MOISTURE:10.2
HARDWARE	AS PER HARDWARE SCHEDULE

Article No.	Hardware Description.	Qty	Image
HINBB433 /BL/PVD	Euroart 102*76*3mm thick PVD coated black finish ball bearing hinge tested to BS EN 1935 grade 13, Certifire certified to EN1634-1, CE marked supplied with screws suitable for wooden doors IH/1MM/433 4"x3"x1MM INTUMESCENT KIT	4	
DC3024/MBL	Euroart concealed door closer , power 2 to 4 adjustable by spring, hold open, CAM action suitable for maximum 1100mm wide doors, maximum weight of 100 kgs, maximum opening angle at 120 degree minimum thickness of door 44mm , tested to BS EN 1154, CE marked and suitable for use on fire rated steel and timber doors. Black painted finish (channel & arm), IC/1MM/DC3024 1MM INTUMESCENT CONCEALED DOOR CLOSER KIT	1	
DLA7255EP/BL/PVD	Euroart mortice lock 55mm backset 72mm centre to centre 8mm spindle hole suited for europrofile cylinder tested to BS EN 12209 performance test, certifire certified to EN1634-1 and CE marked. Supplied complete with forend, dustbox and strike plate, latchbolt and deadbolt in PVD coated black finish. IL/1MM/DLAXX55 1MM INTUMESCENT LOCK KIT FOR 55MM BACK SET DIN LOCK	1	
CY0280/MBL	Euroart 6 pin High security 2 side key, 80mm length top brass pins, 4 anti drill pins cylinder supplied with 3, 2.2mm thick keys. Black matt finish. Non master keyed	1	
LRS202/BL/PVD	Euroart flat solid Lever Handle 127mm wide 65mm from edge of door on 8*52mm thick sprung lever rose supplied complete with 2 Nos. 8*52mm thick europrofile Escutheons, bolt thru fixings in Black PVD finish	1	
DGS200/BL/PVD	Euroart face mounted door guard Black PVD coated finish	1	
DV101/MBL	Euroart door viewer suitable for 180 degree viewing, 14mm inside dia with 11mm cover, 45mm long, 26mm outside cover, black finish PYROSTRIP 400CG GRAPHITE 1MM THK INTUMESCENT	1	
PS1212-2200/BL	Euro Art 12x12mm flexible batwing seal, 2200mm length, black finish	3	
Superior/1130	Automatic Door Bottom w/end plates (for doors between 980 - 1130mm) PYROSTRIP 400CG GRAPHITE 1MM THK INTUMESCENT	1	







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NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
2. FINISH AS PER APPROVED SAMPLE.

Rev.	Date	Description.	By
01	14-01-25	FOR APPROVAL	SJ
00	21-11-24	FOR APPROVAL	SJ

CLIENT

ABANOS

CONSULTANT

.

MAIN CONTRACTOR

.

PROJECT

CERTIFICATION/TEST REPORT FOR EN & UL

SUB- CONTRACTOR

ABANOS
INTERIOR FIT-OUT & JOINERY
P.O. BOX 114480, DUBAI, TEL:+971 48996111, FAX : +971 4 8859966
E-mail : mail@abanos.ae, Web: www.abanos.ae

DRAWING TITLE

FIRE RATED DOOR DETAIL SINGLE LEAF ENT. DOOR, TYPE : D01 & D01A (60 Min. FIRE RATED DOOR)

DRAWN BY	CHK.	APPD.	DATE
SJ	.	.	28.01.2025

SCALE	DRAWING NO.	REV.
1:15 @ A3	ABS00071-STD-FR-60-PSB-136	01

Sr. # -

12 ATTACHMENTS

Technical documentation

- Beechwood Hardwood
- Desert Board, PSB
- African Mahogany wood
- Kleiberit reactive PUR Hotmelt 707.9
- Kleiberit 501.0 PUR adhesive
- Fevicol SH
- Mann McGowan Pyrostrip 500P
- Atmer PS1212 P Flex
- Boss 813F+
- Trisol Montage sealant/adhesive
- Ironmongery

FLORIAN

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.

FSC
www.fsc.org
FSC® C019880
The mark of responsible forestry
Richiedi i prodotti certificati FSC®

florian legno

Florian Legno S.p.A.
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flo.it

Flo.it s.r.l.
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din novoselec

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www.florianinc.com

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

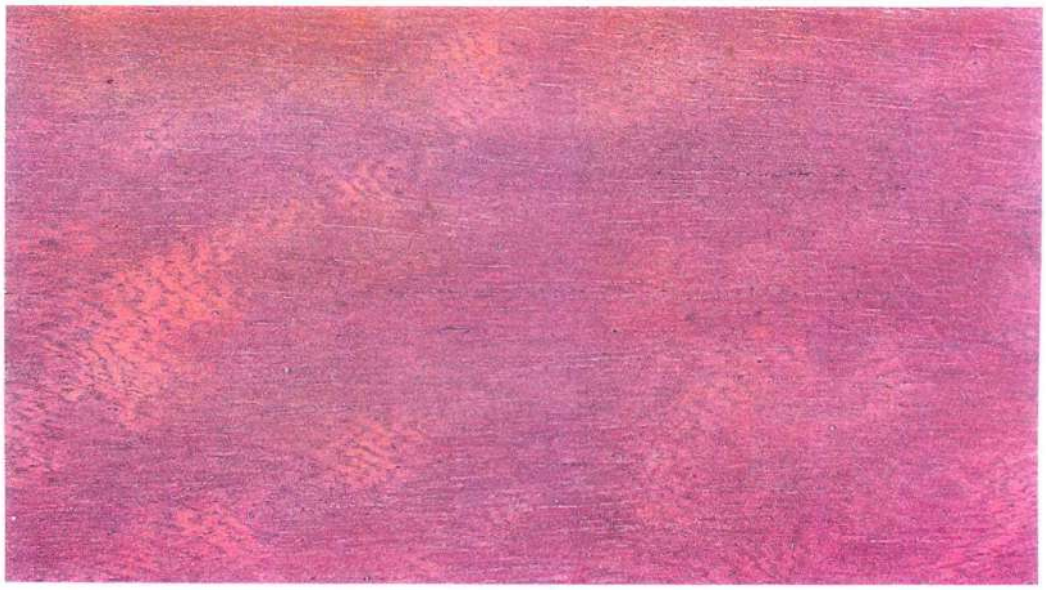
General Requirements For All OSB Types

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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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

PIDILITE INDUSTRIES LIMITED

Marketing Division: P.B. No. 17411, Andheri (East), Mumbai 400 059 (India)

TECHNICAL DATA SHEET

Fevicol SH

FOR INFORMATION ONLY

Fevicol SH is a premium grade synthetic resin-based adhesive suitable for woodworking as well as handicraft based on wood and paper products and other similar joinery applications.

Product technical's

- Appearance — Milky white emulsion
- Viscosity at 30 °C — 200 to 300 Poise
- (By B.F. RVT Spl.-6, RPM – 20.)
- pH — 4 to 6
- Density at 30degc: — 1.04-1.08 gm/ml
- Flow — Continuous

Applications:

- Gluing of all types of wood , wood products and HPL
- For assembly gluing (dowels, tongue and groove, mortise and tenon)
- Solid wood edging.
- For surface bonding (laminates/veneer on hardboard, MDF, HDF,, plywood etc)
- Also ideal for craft work.

APPLICATION METHOD

- Surfaces to be bonded should be free from oil; grease; dust and dirt and should be dry and properly leveled for a snug fit.
- Stir the contents of the container before use.
- Apply thin coat of adhesive on both side for hardwood and on one side for soft wood.
- Press firmly both the surfaces until glue is wet.
- Excess adhesive which oozes out from edges should be wiped off with squeezed wet cloth.
- To get best results, bonded surfaces are to be kept under pressure for 24 hrs.
- If required, pressure can be released after 2-3 Hrs and the bonded assembly can be put to use.

PRECAUTIONS

- When not in use, the container should be kept closed. Skin formation if any, should be removed from the surface before use.

COVERAGE

- Approx. 45-50 Sq. feet / kg at the rate of 150 g/m^2

ADVANTAGES

- Excellent bond strength on all types of wood
- Complies with VOC requirement of LEED EQ 4.1
- Solvent free, Non-flammable, Eco-friendly.
- Non-hazardous,
- Free from offensive smell.
- If required; it can be diluted with some clean water till applicability is achieved (5 % max.).

SHELF LIFE

24 months from the date of manufacturing.

STORAGE

Store in cool & dark shaded place; away from sunlight.

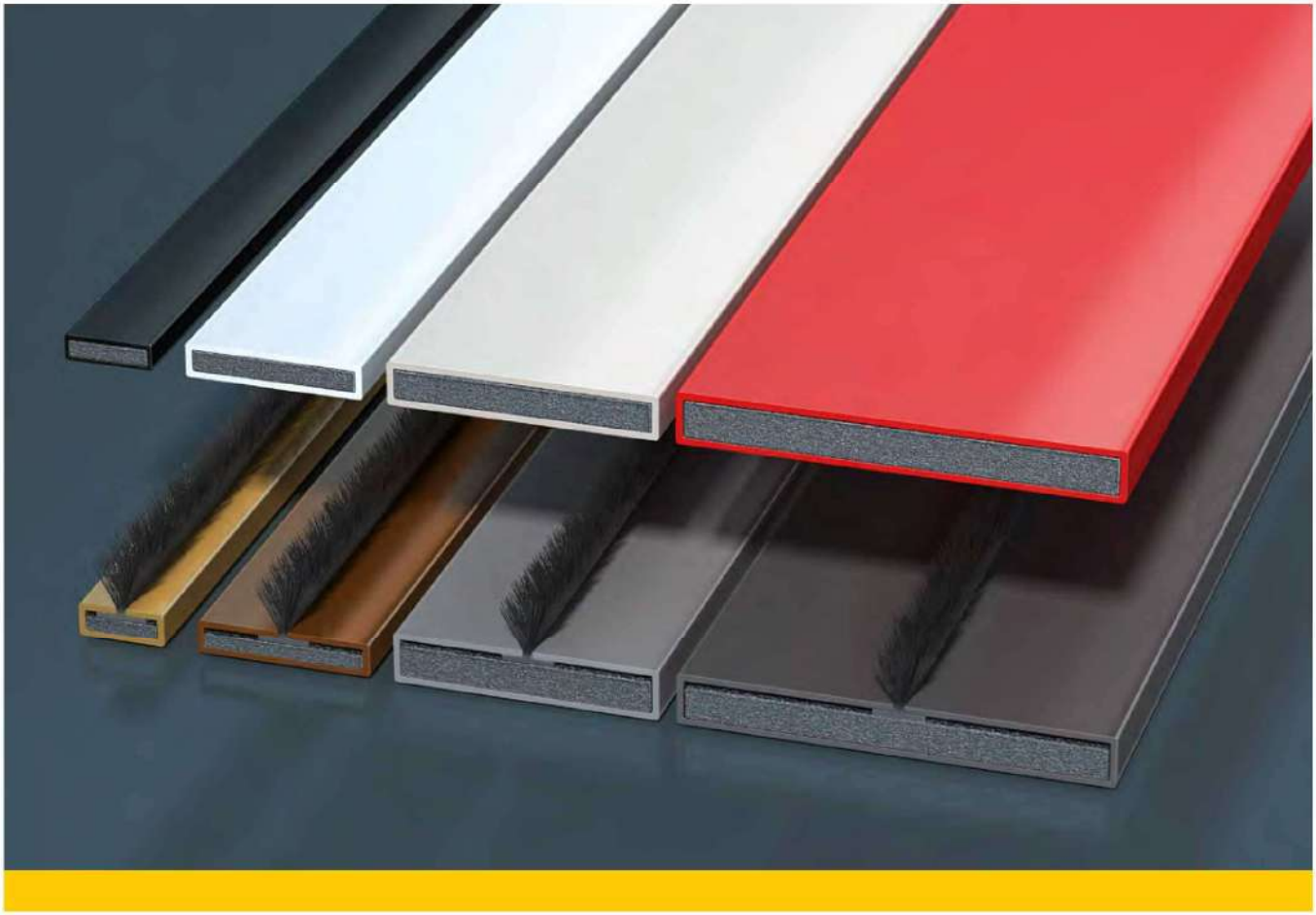
NOTE

We recommend that before using our product, the customer should make his own tests to determine the suitability of the product for his own purpose under his operating conditions. As the circumstances under which our product is stored, handled and used, are beyond our control, we cannot assume any responsibility for their use by the customer.

MANN McGOWAN

Intumescent Fire Smoke & Acoustic Seals

Tel: +44 (0)1252 333601
Email: sales@mannmcgowan.co.uk
www.mannmcgowan.co.uk



Pyrostrip 500P and 500PSS Graphite

Introduction

Pyrostrip 500P and 500PSS graphite seals are extremely effective in a wide variety of applications, including door edges, glazing in steel and timber partitions, pipe closure devices, air transfer grilles, aviation bulkheads and linear gaps.

In a situation where fire arises, the intumescent expands to many times its original volume and develops a positive pressure when restricted by two substrates. Because of its chemical composition, it also has a very high melting point.

Features

- Proven performance in numerous internationally recognised tests
- Suitable for both 30 and 60 minute fire resistant doors
- Choice of standard colours – white, brown, dark brown, black and slate grey
- Standard lengths is 2100mm
- Non-standard colours and lengths available on request

Pyrostrip 500P and 500PSS Graphite

Pyrostrip 500P and 500PSS can be supplied in the following colours and sizes.

Standard sizes available:

Widths: 10mm, 15mm, 20mm, 25mm, 30mm, 38mm, 48mm

Depths: 4mm as standard

We can manufacture to any size, contact the sales office for further details.

Standard length available:

2100mm

Non Standard sizes:

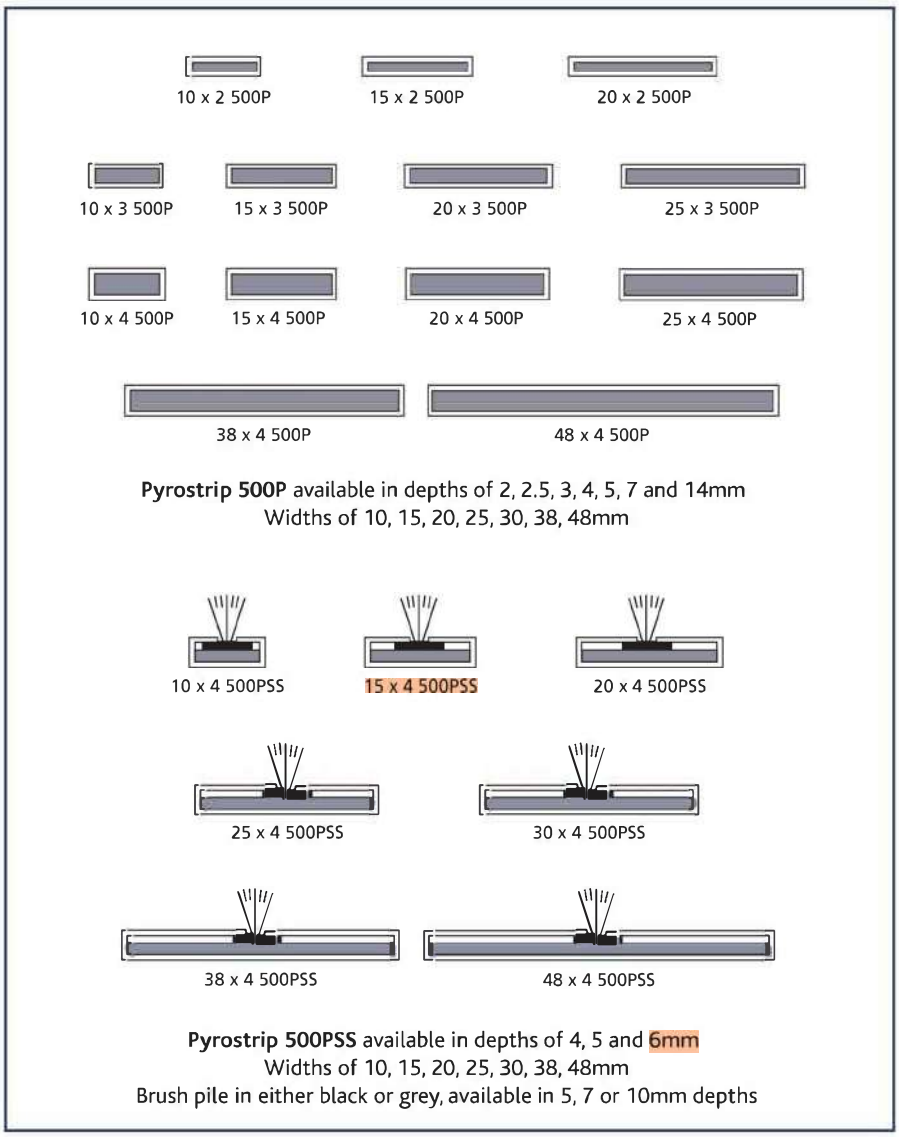
Non standard lengths and sizes can be produced. Please contact our Sales Office.

Standard Colours :

White | Brown | Dark Brown | Black | Slate Grey

Non Standard Colours:

A wide range of non standard colours can be produced. Please contact our Sales Office.



Pyrostrip 500P available in depths of 2, 2.5, 3, 4, 5, 7 and 14mm
Widths of 10, 15, 20, 25, 30, 38, 48mm

Pyrostrip 500PSS available in depths of 4, 5 and 6mm
Widths of 10, 15, 20, 25, 30, 38, 48mm
Brush pile in either black or grey, available in 5, 7 or 10mm depths

Ordering

All Mann McGowan products can be ordered directly from our sales team on:

+44 (0) 1252 333601

or by email:

sales@mannmcgowan.co.uk

Technical Services

Mann McGowan can advise on the use and application of any of our products.

We can also provide presentations or attend site surveys at your request.

Our quality management system is registered in accordance with ISO 9002 by SGS Ltd.

Glass & Glazing Federation

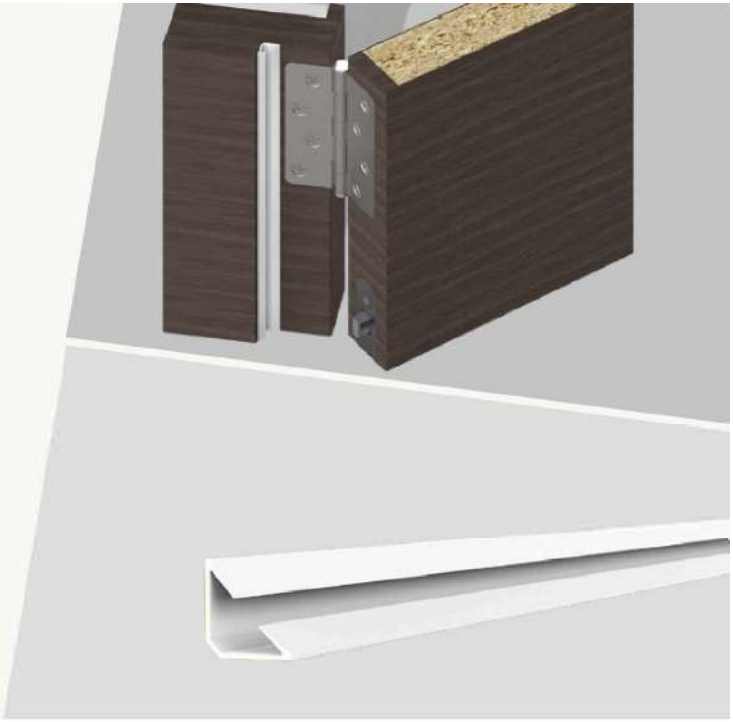
Intumescent Fire Seals Association

MANN McGOWAN
Intumescent Fire Smoke & Acoustic Seals

Mann McGowan Unit 4, Brook Trading Estate, Deadbrook Lane, Aldershot, Hampshire GU12 4XB England
Telephone: Aldershot +44 (0)1252 333601 • Fax: Aldershot +44 (0)1252 322724 • Email: sales@mannmcgowan.co.uk
www.mannmcgowan.co.uk

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

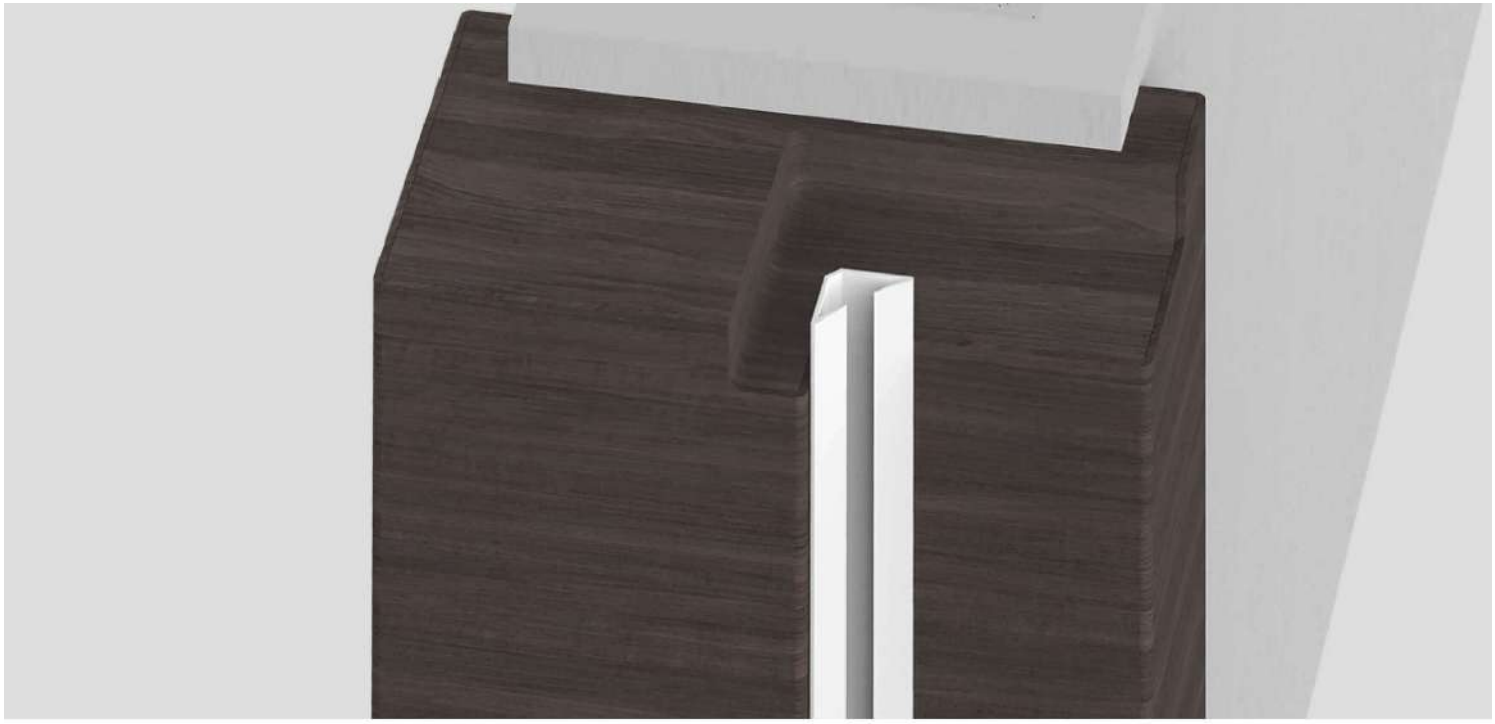
FIXING

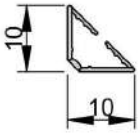
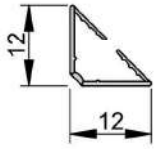
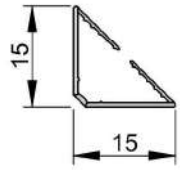
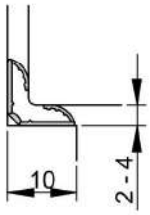
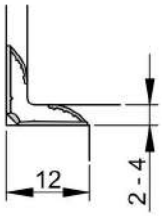
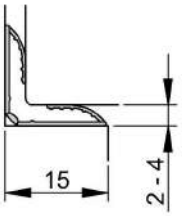
Fixing	stuck to the door stop with self-adhesive backing tape

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
			
			

SOUDAL

Technical Data Sheet

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)

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

Finishes:


SSS


PSS


PB/PVD


SB/PVD


BL/PVD

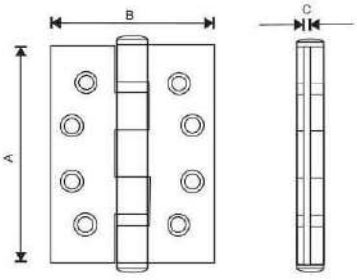

MAB

Other finishes are available on order

Features

- Suitable for 120min timber and 240min metal fire/smoke resistant doors
- Double ball bearing, five knuckle hinge
- Successfully tested for conformity to all the requirements of BS EN1935
- Load bearing capacity up to 120kg
- Available square or radius
- Tested to Grade 7: 200,000 cycles
- Pre-cut intumescent hinge pads available

Ref. No.	Size (A x B x C)
HINBB433	102 x 76 x 3mm
HINBB43.53	102 x 89 x 3mm
HINBB443	102x 102x 3mm
HINBB533	127 x 76 x 3mm
HINBB4.543.4	114x102x3.4mm
HINBB4.54.53.4	114x114x3.4mm



BS EN 1935 Classification

4	7	6	1	1	4	0	13

BS EN 1935

10 YEARS MECHANICAL GUARANTEE

CE

certifire CF 5573

DLA7255EP : 55mm backset
DLA7260EP : 60mm backset
DLA7265EP : 65mm backset

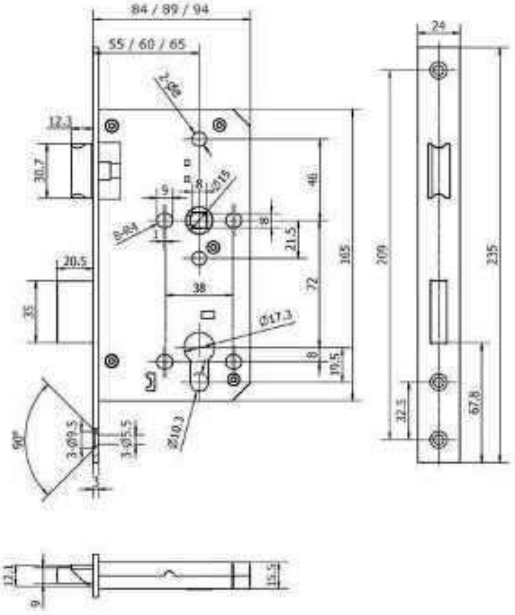
certifire CF 5574

BS EN 12209

10 YEARS MECHANICAL GUARANTEE

CE 2812

Finish: SSS, PSS, PB/PVD, SB/PVD, MAB, **BL/PVD**



Features

- 55/60/65mm backset, 72mm centres
- SS 304 forend, strike plate and follower
- SS 304 latch bolt, SS 304 dead bolt
- Tested to Grade X: 200,000 test cycles
- Forend and strike plate available square or radius
- Pierced to accept bolt through furniture and escutcheons at 38mm centres
- Suitable for 120min timber and 240min metal doors
- Cylinder can withdraw both latch and deadbolt - offers convenience and safety combined with security
- For use by public where there is little incentive to exercise care and high chance of misuse

BS EN 12209 Classification

3	X	8	1	0	G	3	B	C	2	0

CYD Series

- Solid brass body
- Top pins made of solid brass
- Key manufactured from cupronickel
- Each side 4 anti drill pins
- Tested to 100,000 cycles
- Supplied with SS 304 bolt
- Keyed Alike suites available
- Bespoke master keyed systems assembled in-house at EUROART (UK) Ltd.
- Approx 1000 differs available for a straight MK suite with no sub suites
- Full records kept for replacements and future extensions
- Supplied with three 2.2mm keys

Double Cylinder

Ref. No.	Size
CYD260	60mm
CYD270	70mm
CYD280	80mm
CYD290	90mm
CYD2100	100mm

Key and Turn Cylinder

Ref. No.	Size
CYD360	60mm
CYD370	70mm
CYD380	80mm
CYD390	90mm

Single Cylinder

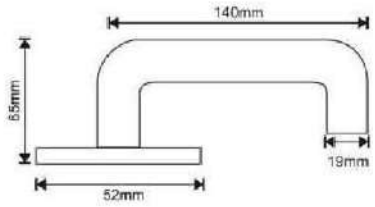
Ref. No.	Size
CYD145	45mm
CYD150	50mm

Finish: PB, SN, PC, MAB, MBL

BS EN 1303

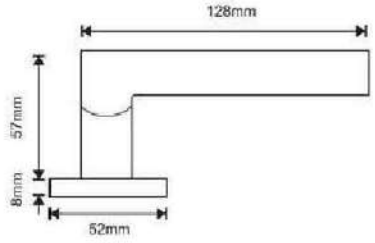
10 YEARS MECHANICAL GUARANTEE

LRS201 - SOLID



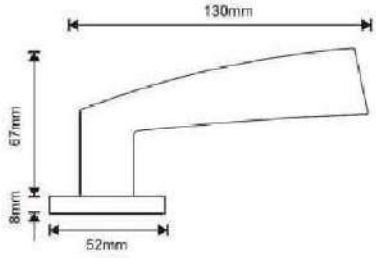
Finish: SSS

LRS202



Finish: SSS, BL/PVD

LRS203



Finish: SSS, PB/PVD

BS EN 1906

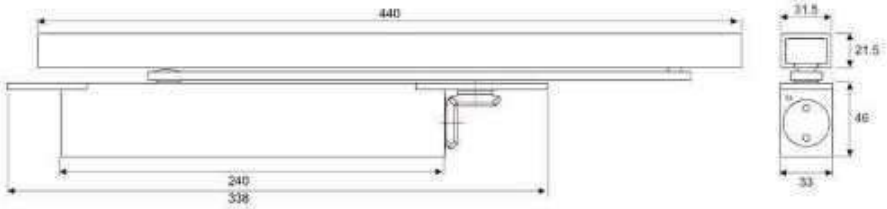
10 YEARS MECHANICAL GUARANTEE

DC3024

BS EN 1154

10 YEARS MECHANICAL GUARANTEE

CE 0905



Finish: SBP, MABP, MBL

Product specification

Power size (adjustable by spring)	
EN2	Yes
EN3	Yes
EN4	Yes
Mechanism	Cam action
Adjustable closing speed	Yes
Adjustable latch action	Yes
Maximum door width (mm)	1100
Maximum door weight (kg)	100
Minimum door thickness required (mm)	44
Opening angle	120°
LH and RH doors - universal application	Yes

Note: push or pull side of the door subject to rebate distances.

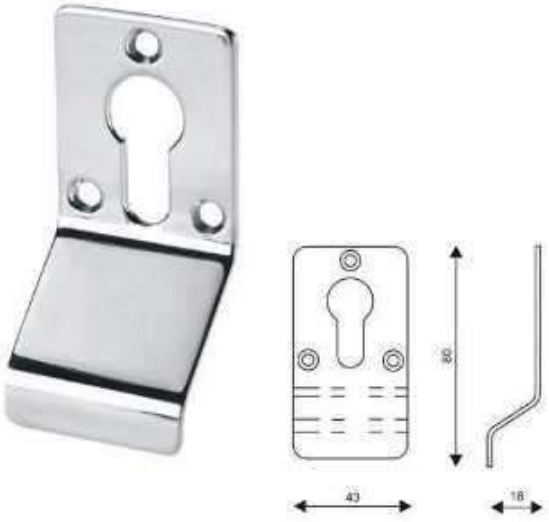
Features

- Enhanced aesthetics - providing the ability to retain a clean, unhindered appearance to the door and interior
- Totally invisible when the door is closed. Guide rail only visible during opening moment
- Optimum protection against vandalism because of concealed installation
- Can be incorporated within the door pre-fabrication process, allowing complete installation in the factory
- Fully controlled, reliable closing with adjustable latch action
- Tested to Grade 8: 500,000 cycles.
- Hold open unit available

BS EN 1154 Classification

3	8	2 4	1	1	4

CPS202 - Euro Profile Cylinder Pull

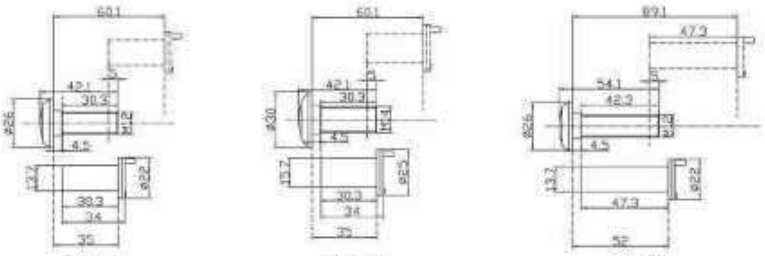


CPS204 - Blank Cylinder Pull

Finish: SSS, PSS,MAB, PB/PVD, BL/PVD

Door Viewer

DV101 - Viewing Angle 180° (14mm dia), 26mm lens (for 35-60mm door thickness)
DV102 - Viewing Angle 200° (16mm dia), 30mm lens (for 35-60mm door thickness)
DV103 - Viewing Angle 180° (14mm dia), 26mm lens (for 60-80mm door thickness)



- With Glass lens
- Manufactured from brass
- With optional cover

Finish: SN, PC, PB, MAB, MBL

10 YEARS MECHANICAL GUARANTEE

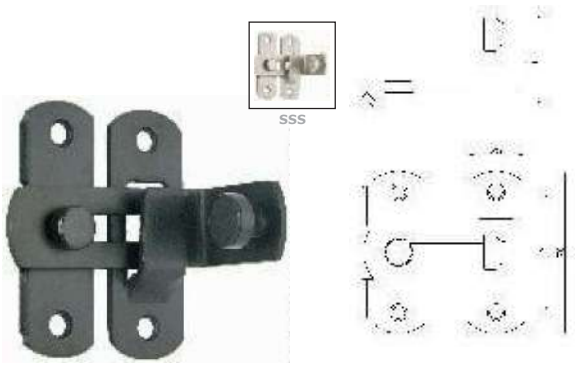
DGS200 - Stainless Steel Door Guard

DGS201 - SS Concealed Door Chain

DCS203 - SS Door Chain with Leather Cover

DCS205 - Stainless Steel Door Chain

DCS207/L Sliding Security Lock



DCS207/S Sliding Security Lock

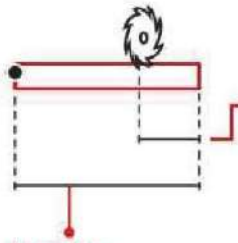
Finish: SSS, PSS, MAB, PB/PVD, SB/PVD, BL/PVD, MBL

10 YEARS MECHANICAL GUARANTEE

SUPERIOR 60'

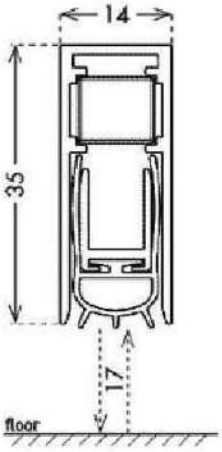
Features:

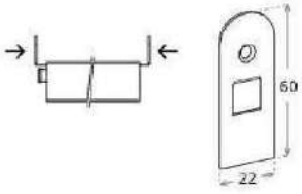
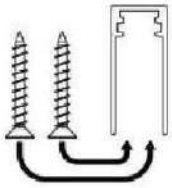
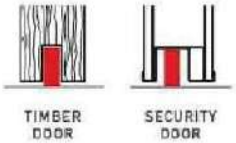
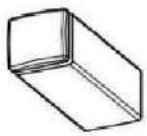
- Model with steel bracket fastening system
- Fire resistance up to 60 minutes
- The extractable plunger with adjusting spring allows a comfortable regulation
- This product guarantees a 48 dB noise reduction



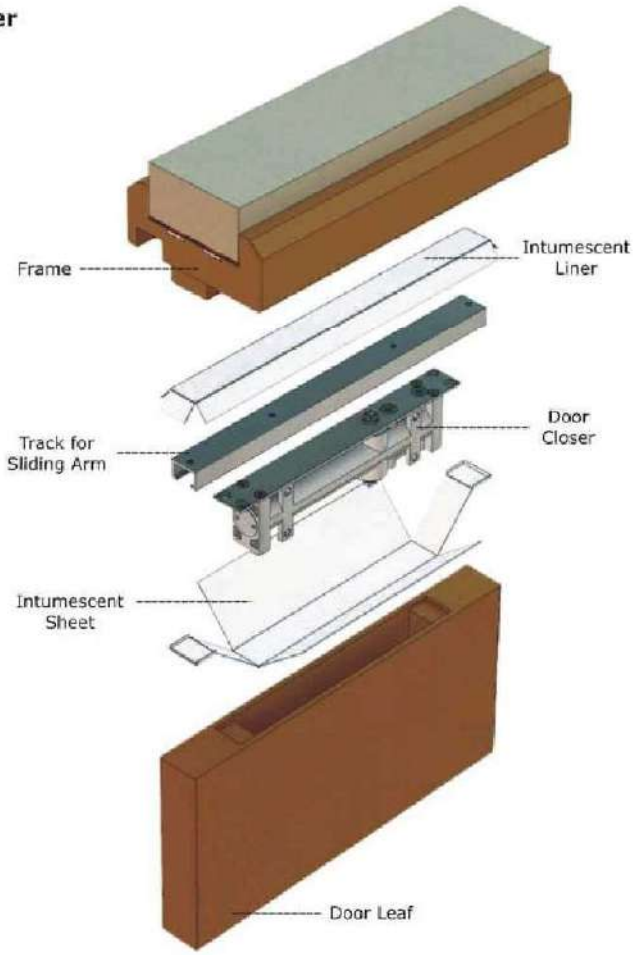
trimming
150 mm standard
50 mm | l. 330 mm
135 mm | l. 430 mm

lengths
330 430 530 630 730 830 930 1030
1130 1230 1330 1430 1530 mm



Seals	Fixing Types		Application	Plunger Type
	1F 	3F 		

Intumescent door closer



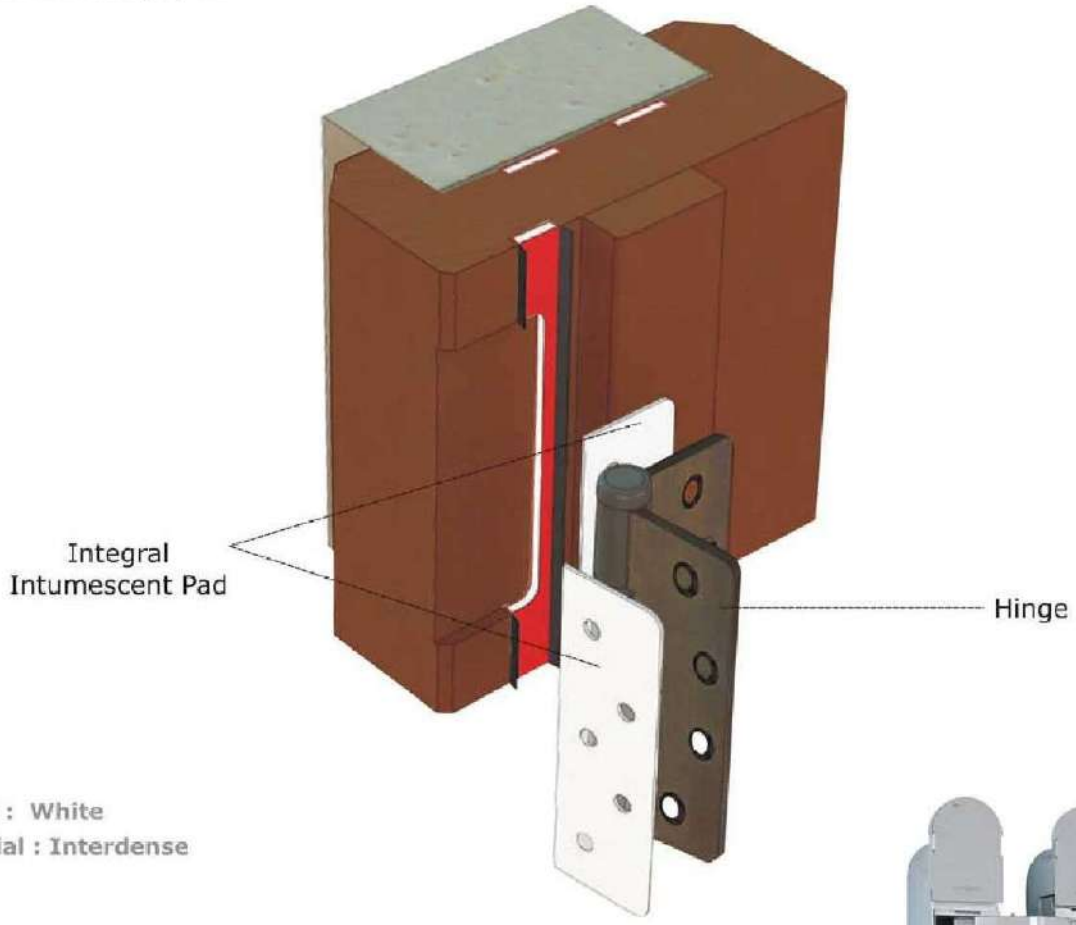
Finish : White
Material : Interdense

Features

- Precut kits for all concealed door closers models
- Size 1 ~ 3, size 2 ~ 4, size 2 ~ 5 & size 3 ~ 6
- Supplied as 2 or 3 part wrap around kit around door closer body as well as top channel with full self adhesive tape back
- Special kits for electromagnetic hold open closers with longer track arms available on request
- Thickness: 1 mm (type 15) & 2 mm (type 36)

Code	Description
IC/1mm/DC7004	1mm Intumescent Concealed Door Closer Kit
IC/1mm/DC7025	1mm Intumescent Concealed Door Closer Kit
IC/1mm/DC8024	1mm Intumescent Concealed Door Closer Kit
IC/1mm/DC3024	1mm Intumescent Concealed Door Closer Kit
IC/1mm/DC7004	2mm Intumescent Concealed Door Closer Kit
IC/1mm/DC7025	2mm Intumescent Concealed Door Closer Kit
IC/1mm/DC8024	2mm Intumescent Concealed Door Closer Kit
IC/1mm/DC3024	2mm Intumescent Concealed Door Closer Kit

Intumescent hinge pad



Finish : White
Material : Interdense

Features

- Recommended for use with CE marked hinges tested in accordance with BS EN 1935.
- Fixing : Place the intumescent pad. underneath the hinge leaf.
- Precut kits for butt hinge and concealed hinge.

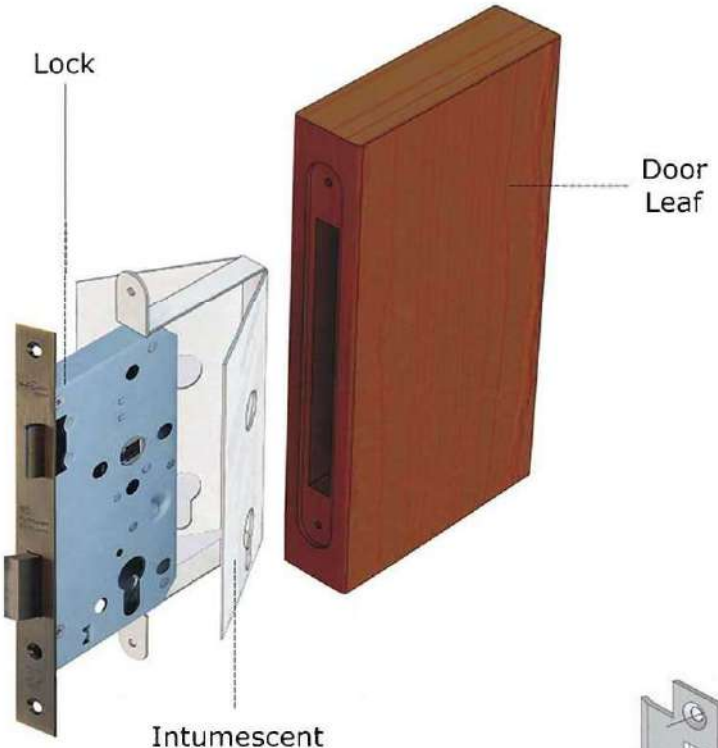
Ball Bearing Hinge

Code	Size
IH/1mm/433	4"x3"x3mm
IH/1mm/43.53	4"x3.5"x3mm
IH/1mm/443	4"x4"x4mm
IH/1mm/4.543.4	4.5"x4"x3.4mm
IH/2mm/433	4"x3"x3mm
IH/2mm/43.53	4"x3.5"x3mm
IH/2mm/443	4"x4"x4mm
IH/2mm/4.543.4	4.5"x4"x3.4mm

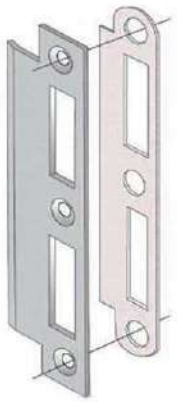
3D Concealed Hinge

Code	Size
IH/1mm/ED360	32x160mm
IH/1mm/ED380	32x180mm
IH/1mm/3D160	28x160mm
IH/1mm/3D200	32x200mm
IH/2mm/ED360	32x160mm
IH/2mm/ED380	32x180mm
IH/2mm/3D160	28x160mm
IH/2mm/3D200	32x200mm

Intumescent lock case



Finish : White
Material : Interdense



Intumescent Sheet
for Strike Plate

Features

- Precut kits to suit all types of lock body.
- DIN55/72, DIN60/72, DIN80/72 etc.
- Bespoke kits can be supplied for electrified locks.
- Hotel guest room card locks, multipoint locks, budget locks etc.
- Supplied as full wrap around kit around lock body as well as under strike plate with full self adhesive tape back.
- Thickness: 1 mm (Type 15) & 2 mm (Type 36)

Code	Description
IL/1mm/DLAXX55	1mm Intumescent Lock Kit for 55mm backset DIN Lock
IL/1mm/DLAXX60	1mm Intumescent Lock Kit for 60mm backset DIN Lock
IL/2mm/DLAXX55	2mm Intumescent Lock Kit for 55mm backset DIN Lock
IL/2mm/DLAXX60	2mm Intumescent Lock Kit for 60mm backset DIN Lock

Code	Description
IL/1mm/ARL452	1mm Intumescent Lock Kit for Roller Latch ARL452
IL/2mm/ARL452	2mm Intumescent Lock Kit for Roller Latch ARL452

MANN McGOWAN
Intumescent Fire Smoke & Acoustic Seals

Tel: 01252 333601
Email: sales@mannmcgowan.co.uk
www.mannmcgowan.co.uk

Pyrostrip 400CG Graphite

Pyrostrip 400CG is a flexible graphite intumescent material. It is resistant to water, UV stable and unaffected by temperatures as low as minus 35°C.

Description

The material has the following physical properties:

Tensile Strength (MPa)	3.45
% Elongation at break	104%
Specific Gravity	1.4 – 1.5
Softness	Shore 70A – Shore 90A

Performance

The properties associated with its reaction to heat are as follows:

Although the material will start to react at approximately 230°C, there is no significant expansion until approximately 250 °C.

Free expansion = 15 – 20 times original thickness.

Pressure is up to 21 bar depending on tests performed.

See example (right) of 400CG graphite after testing in our furnace.

Standard Sizes

Widths:	10mm, 15mm, 20mm, 25mm, 30mm, 35mm, 40mm, 50mm and 60mm
Thickness	1.0mm and 2.0mm
Lengths:	10m and 25m

Pyrostrip 400CG can be supplied as hardware protection kits for all common size locks and hinges or supplied as a 300x200mm sheet size for cutting on site.

Distributed By....

emirates technotrade L.L.C

sales@emiratestechnotrade.com,+971 55 672 7484

Ordering

All Mann McGowan products can be ordered directly from our sales team on:

+44 (0) 1252 333601

or by email:

sales@mannmcgowan.co.uk

Technical Services

Email: **technical@mannmcgowan.co.uk**

Mann McGowan can advise on the use and application of any of our products.

We can also provide presentations or attend site surveys at your request.

Our quality management system is registered in accordance with ISO 9001:2015 by SGS Ltd.

Glass & Glazing Federation

Intumescent Fire Seals Association

MANN McGOWAN

Intumescent Fire Smoke & Acoustic Seals

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www.mannmcgowan.co.uk

October 2021

13 WITNESSES THE TEST

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

14 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--