Fire Test Report#: 0079-23-TR-01-02

Testing Laboratory: ESL

Certified by: Intertek

Test Standard: EN1634-1

Description: 54mm thk. Single Leaf PSB Fire Rated Door with PSB Frame

Rating: 60minutes

ESL

مختبر الإمارات للسلامة
EMIRATES SAFETY LABORATORY

TEST REPORT

No. 0079-23-TR-01-02

Fire resistance of Fire rated single leaf door with PSB frame and Fire rated single leaf door with hard wood frame made according to technical documentation No. J2717-STD-FR-PSB-006 & J2717-STD-FR-PSB-011

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

Date of issue: 1 August 2023

ilac-MRA

IAS ACCREDITED Testing Laboratory TL-1038

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:	June 13, 2023
Date of specimen(s) installation:	June 13, 2023
Date of testing:	June 19, 2023
Name and address of the test sponsor:	Abanos Furniture & Decoration Industry LLC P.O. Box 114480 Dubai Investment Park 1 Dubai United Arab Emirates 971 4 8851885
Name and address of the manufacturer/supplier:	Door and Frame Assembly – Abanos Furniture & Decoration Industry, P O Box 114480, Dubai, UAE Door and Frame Core – Al Talah Board Manufacturing Co. LTD Abu Dhabi Free Zone (KIZAD), Plot no KHIA4-05 Taweelah, Abu Dhabi, United Arab Emirates
Name of the test specimen:	Fire rated door detail single leaf door with PSB frame (EN - 60 min. Fire rated door) Fire rated door detail single leaf door with hard wood frame (EN - 60 min. Fire rated door)
Identification of the test specimen(s):	0079-23-01 (Door 1) 0079-23-02 (Door 2)
Description of sampling procedure including date if applicable:	ESL Testing was not involved in the sampling process. Test specimens were selected, marked and signed by Mr. Deepesh Srivastava from Intertek Middle East (Certification Body) on June 1st, 2023 as shown below and delivered to ESL by the test sponsor. The results apply to the specimens as received.  

2 TEST CONDITIONS

Heating temperature of the test element:	Standard temperature-time curve was maintained within its allowable limits according to EN 1363-1. Temperature inside the furnace during the test was measured at a distance of 100mm from the surface of the test element. Heating conditions are shown in Graphs 1 and 2.
Furnace pressure:	Differential pressure in the furnace measured at a height of 0.5m above the level of furnace floor was maintained according to EN 1363-1. A pressure of 0Pa is maintained at the neutral pressure plane, 0.5m above the notional floor level. The pressure level during the test is shown in Graph 3.
Ambient temperature:	Measured during the test at distance of 2000mm away from the unexposed face of the specimen, at the commencement of the test was 23.6°C.

3 DESCRIPTION OF THE TEST SPECIMEN

Constructional details of the single door set are presented in the technical documentation enclosed to this report.

Table 1 shows dimensions measured by ESL and taken from the technical documentation.

Table 1

Measurement	Nominal		Measured by ESL (mm)	
	Door 1	Door 2	Door 1	Door 2
Width of the door leaves	1000	1000	1002	1000
Height of the door leaves	2400	2400	2402.5	2401
Door frame opening (w x h)	1006x2408	1006x2408	1002x2406	1005x2408
Door leaf Thickness	54	54	53.5	53.84

3.1 Description of the door set

The door leaf of both tested samples is made of palm strand board (PSB) and is surrounded by 6mmx54mm beech wood lipping along its perimeter. The drop seal from Lorient (LAS 8001 SI) with a 2mm thick intumescent fire protection kit is located at the bottom edge of the door leaf for both samples.

The first sample (01) is utilizing beech wood as the material for the frame, this includes the architrave, whereas the second sample (02) is having palm strand board (PSB) for both frame and architrave.

The frame of both samples is fixed to the wall using five steel screws having dimensions of 6mm x 125mm with plastic plugs, on both left and right side of the opening. The spacing between steel screws is 523mm, except between the top steel screw and the second having 528 spacing between them. The distance between the edges of the door leaf from the steel screws is 150mm. The architrave is fixed onto the frame using wooden glue from RITVER (PW1612) and nails having a diameter of 1.5mm and length of 33.92mm.

The gaps between the door frame and the supporting construction is filled with 813+ fire retardant foam from BOSS products, after curing the excess is then trimmed off and then an intumescent sealant from Lorient is then applied on top of the firestop foam.

The measured weight of the door leaves are 102 kg and 101.7 kg respectively.

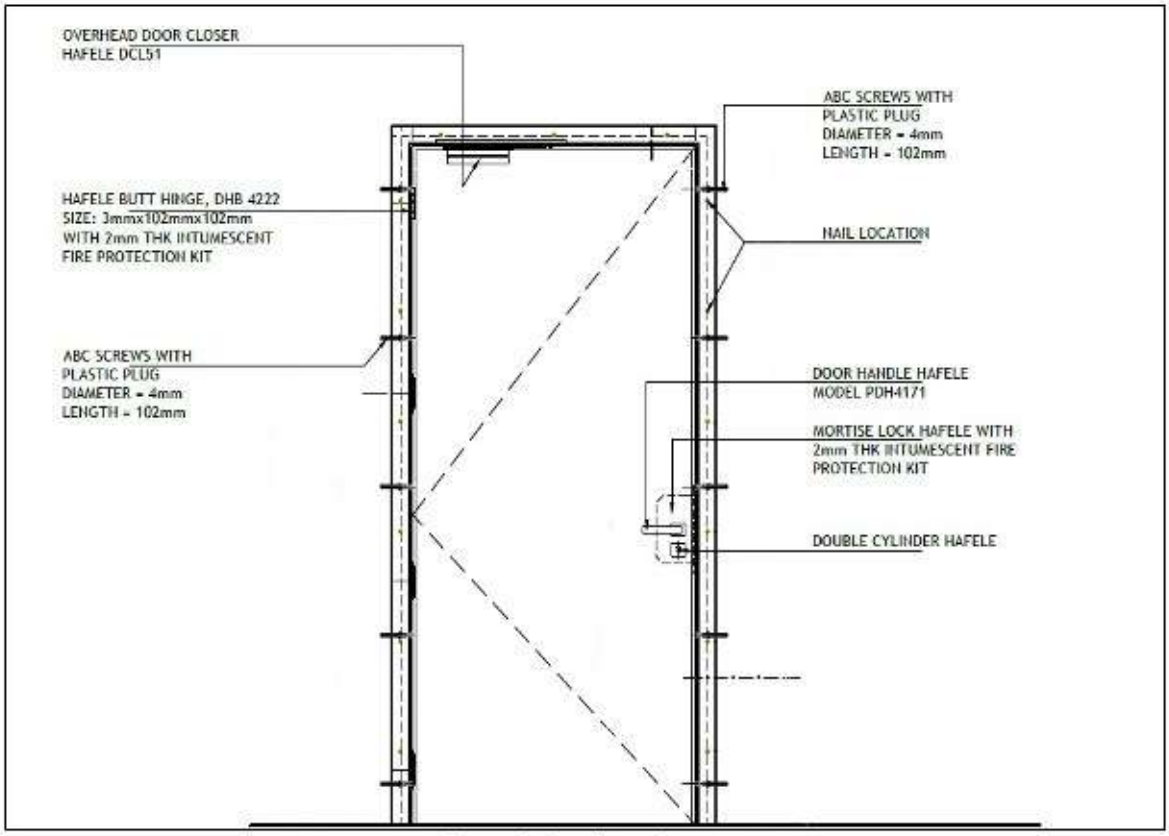


Figure 1. Specimen Layout

Door Ironmongery:

Table 2

Lock and handle			
		Door 1	Door 2
Manufacturer		HAFELE	HAFELE
Ref no.	Lock	911.02.145	911.02.145
	Handle	903.92.076	903.92.076
Type		Mortice lock, Profile cylinder	Mortice lock, Profile cylinder
Dimensions		Face plate *23.5 x 228mmx 3mm	Face plate *23.5 x 228mmx 3mm
Quantity		*1 mortise lock set and *2 Hafele Handles	*1 mortise lock set and *2 Hafele Handles
Components		2 Lever handle aperture parts with handle roses 1 Spindle 8 x 100 mm 1 Pair of PC escutcheons 4 Threaded screws M4 x 60 mm, can be shortened 1 mortice lock 1 flanged striking plate 2 deadbolt pockets	2 Lever handle aperture parts with handle roses 1 Spindle 8 x 100 mm 1 Pair of PC escutcheons 4 Threaded screws M4 x 60 mm, can be shortened 1 mortice lock 1 flanged striking plate 2 deadbolt pockets
Fixing Method		Fixed *1045mm from the bottom edge of the door leaf	Fixed *1045mm from the bottom edge of the door leaf

Table 3

Lock cylinder		
	Door 1	Door 2
Manufacturer	HAFELE	HAFELE
Ref no.	916.96.027	916.96.027
Type	Profile Cylinder	Profile Cylinder
Quantity	*1	*1
Components	1 double cylinder 3 keys, nickel plated steel 1 fixing screw	1 double cylinder 3 keys, nickel plated steel 1 fixing screw
Fixing Method	Fixed in the mortise lock	Fixed in the mortise lock

Table 4

Door Closer & Hinges				
	Door 1		Door 2	
	Door closer	Hinges	Door closer	Hinges
Manufacturer	HAFELE	HAFELE	HAFELE	HAFELE
Ref no.	931.84.829	926.98.090	931.84.829	926.98.090
Type	Surface mounted	Surface Mounted	Surface mounted	Surface Mounted
Quantity	*1Pc.	*4 pcs.	*1 pc.	*4 pcs.
Fixing Method	The door closer is installed on the top horizontal edge of the door leaf, on the fire exposed side. Hinges are fixed to the door and the frame on the exposed side, using 8pcs. of screws fixed at *230mm, 867mm, 1536mm and 2197mm, measured from the centre of each hinge to the sill of the door.			

Table 5

Intumescent Fire Protection Kits				
	Door 1		Door 2	
Manufacturer	HAFELE		HAFELE	
Ref no.	950.11.107	950.11.011	950.11.107	950.11.011
Type	Intumescent for door hinges	Intumescent for mortice locks	Intumescent for door hinges	Intumescent for mortice locks
Quantity	4	1	4	1
Fixing Method	Between door hinges and cut-out of the frame or door leaf	Installed over the mortice lock	Between door hinges and cut-out of the frame or door leaf	Installed over the mortice lock

Note: The information provided has been compiled based on the information received from test sponsor unless stated differently. Information marked with a single asterisk indicates information provided by the Test Sponsor which has been checked against the materials used in the test where appropriate, however does not fall under the responsibility of ESL.

3.2 Installation

The door leaves were received with the ironmongery already installed into the door. The installation started with the door frame fixed into the supporting construction using steel screws with the dimensions of 6mm x 125mm with plastic plugs.

The door leaves are then installed onto the frame using 4 screws for each hinge with a dimension of 4.5mm x 31mm. The gaps between the frame and the supporting construction is then filled with BOSS 813+ fire retardant foam, after drying the excess is then trimmed off, then the door closer is installed on the door leaves and the exposed foam is then covered with Lorient Intumescent Sealant.

Once the intumescent sealant has dried off, the Architrave is installed on the frame with the use of wood glue from RITVER (PW1612) and nails with dimensions of 1.5mm x 34mm, the arm shoe and forearm are then installed on the architrave and is connected to the door closer.

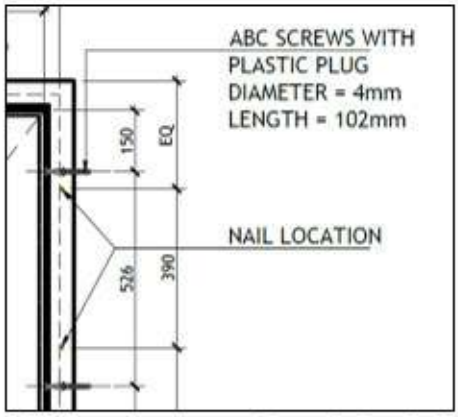


Figure 2. door frame and architrave fixing for both the door leaves.

The Lorient intumescent fire seals are then installed, two sets of 15x6mm strips are installed on the allocated locations for the frames, and one 15mmx4mm strip is installed for the door leaves, an elastomer silicone synthetic rubber is installed adjacent to the strips on the frame. The striker plate is installed on the frame, the location where the striker plate would be installed is in the provided cut-out.

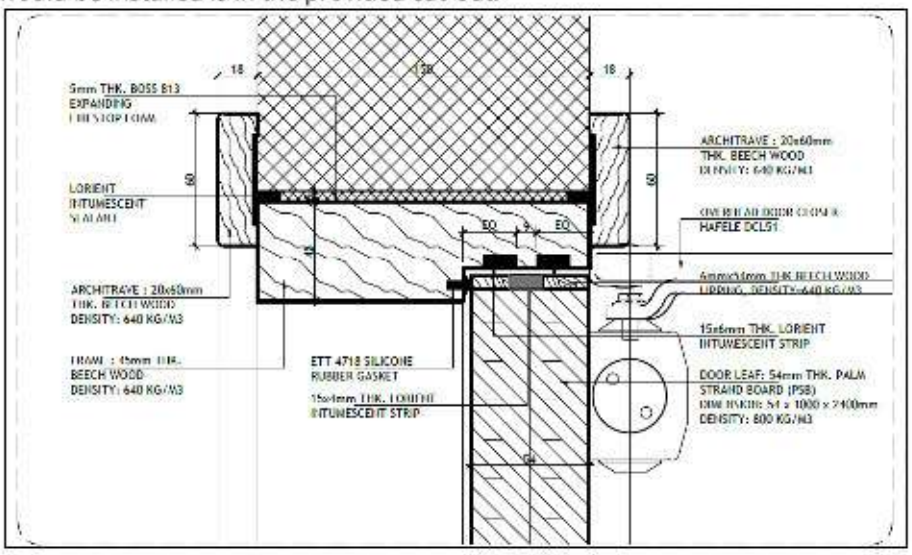


Figure 3. Cross-section of Door 1 having hard wood as frame and architrave.

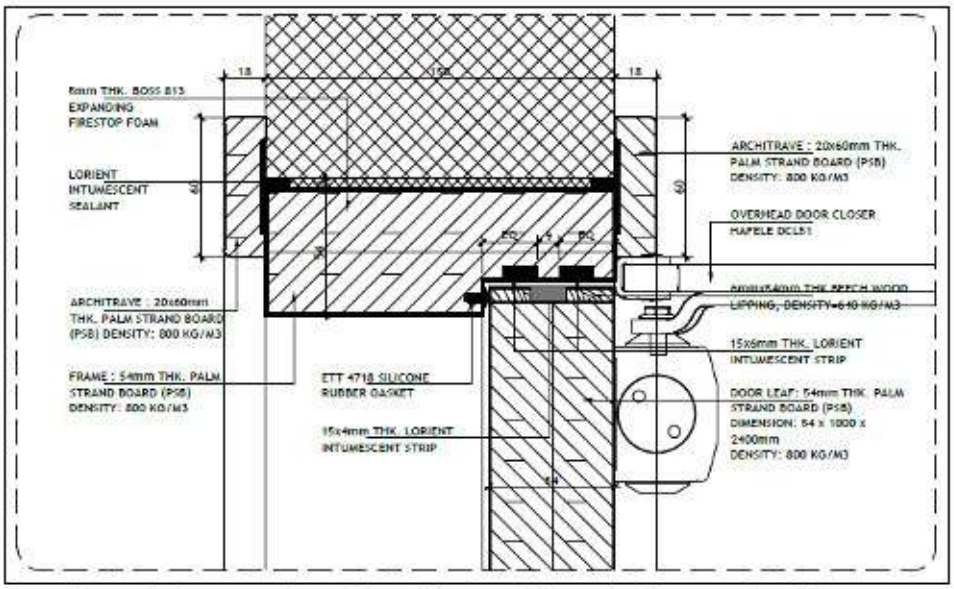


Figure 4. Cross-section of door 2 having PSB as the frame and architrave.

3.3 Description of the supporting construction

Both door sets were installed opening into the furnace. Rigid standard supporting construction was used (according to EN 1363-1 standard) made of 150mm thick autoclaved aerated concrete blocks with a nominal density of 500kg/m³ and a structural opening of size 1095mm x 2455mm (w x h). The supporting construction filled the test frame of dimensions 4240x4240mm, made of a steel H-profile. The whole construction was used to close the furnace.

3.4 Verification

Verification of the test element(s) 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.

4 PRE-TEST PREPARATION

4.1 Conditioning

The door sets were installed by the manufacturer from 13-Jun-2023 to 15-Jun-2023 in the previously conditioned supporting construction. The test specimens were conditioned for 4 days afterwards under following conditions:
- relative humidity: min RH (%): 48.9, max RH (%): 69.8,
- temperature: min temp. (°C): 22.2, max temp. (°C): 30.9.

4.2 Operability test

The test element(s) 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 of the door leaf. The arm of the door closer is fixed to the door frame.

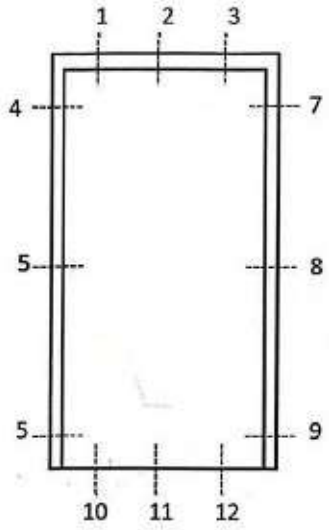
4.3 Closing force measurements

A door closer was installed on the exposed face of both door leaf samples. The maximum closing force of the door leaves 1 and 2, measured prior to the test, to an opening distance of 100mm, was 39.8N and 46.3N respectively.

4.4 Gaps measurements

Gaps measurements made in ESL laboratory are shown in Table 6.

Table 6



No.	Exposed side (mm)	
	Door 1	Door 2
1	3.2	3.1
2	3	2.7
3	3.3	3.3
4	2.8	3
5	3.3	2.98
6	2.1	3.1
7	3.1	3
8	3	2
9	3.2	2.3
10	4.8	3.7
11	3.9	3.7
12	3.7	4.2

Maximum Permitted Gaps

Maximum permitted gaps are shown in Table 7.

Table 7

GAPS		Measurements, mm					
		Average		Maximum		Permitted gap size	
		D1	D2	D1	D2	D1	D2
Along the horizontal edges	At the top	3.2	3.0	3.3	3.3	5.2	5.2
	At the bottom	4.1	3.9	4.8	4.2	6.5	6.0
Along the vertical edges	Hinge side	2.7	3.0	3.3	3.1	5.0	5.1
	Non-hinge side	3.1	2.4	3.2	3.0	5.2	4.7

4.5 Final settings

Prior to the fire resistance test, the test specimen(s) was subjected to a final closing involving opening the leaf to a distance of approximately 300 mm and allowing it to self-close. The door was latched but not locked and the key was removed from the lock. The door closer is as per normal application on site, connected and operational.

4.6 Arrangement of temperature and deflection measurement points

The positioning scheme of the temperature and deflection measuring points is shown in Figure 4.

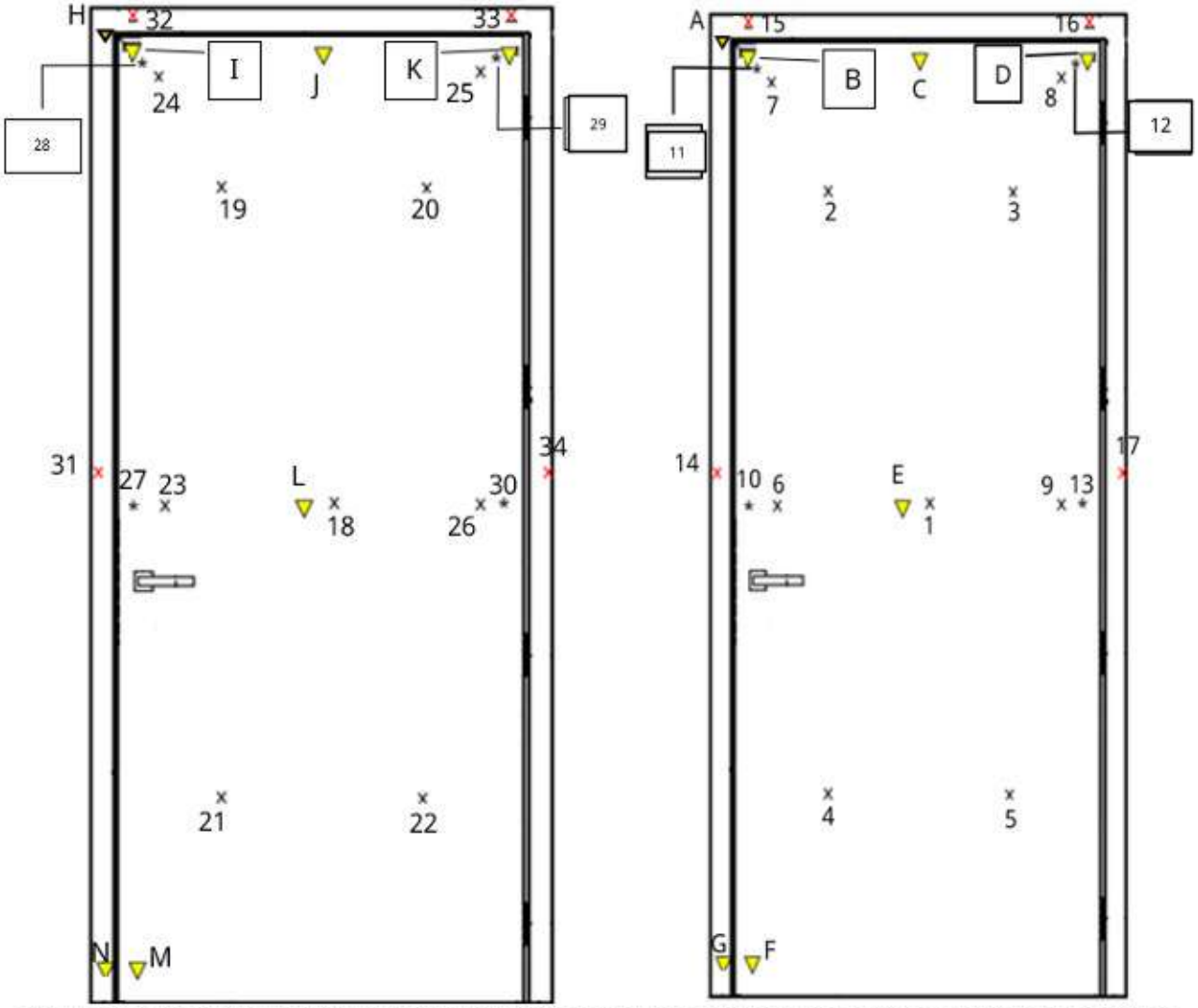
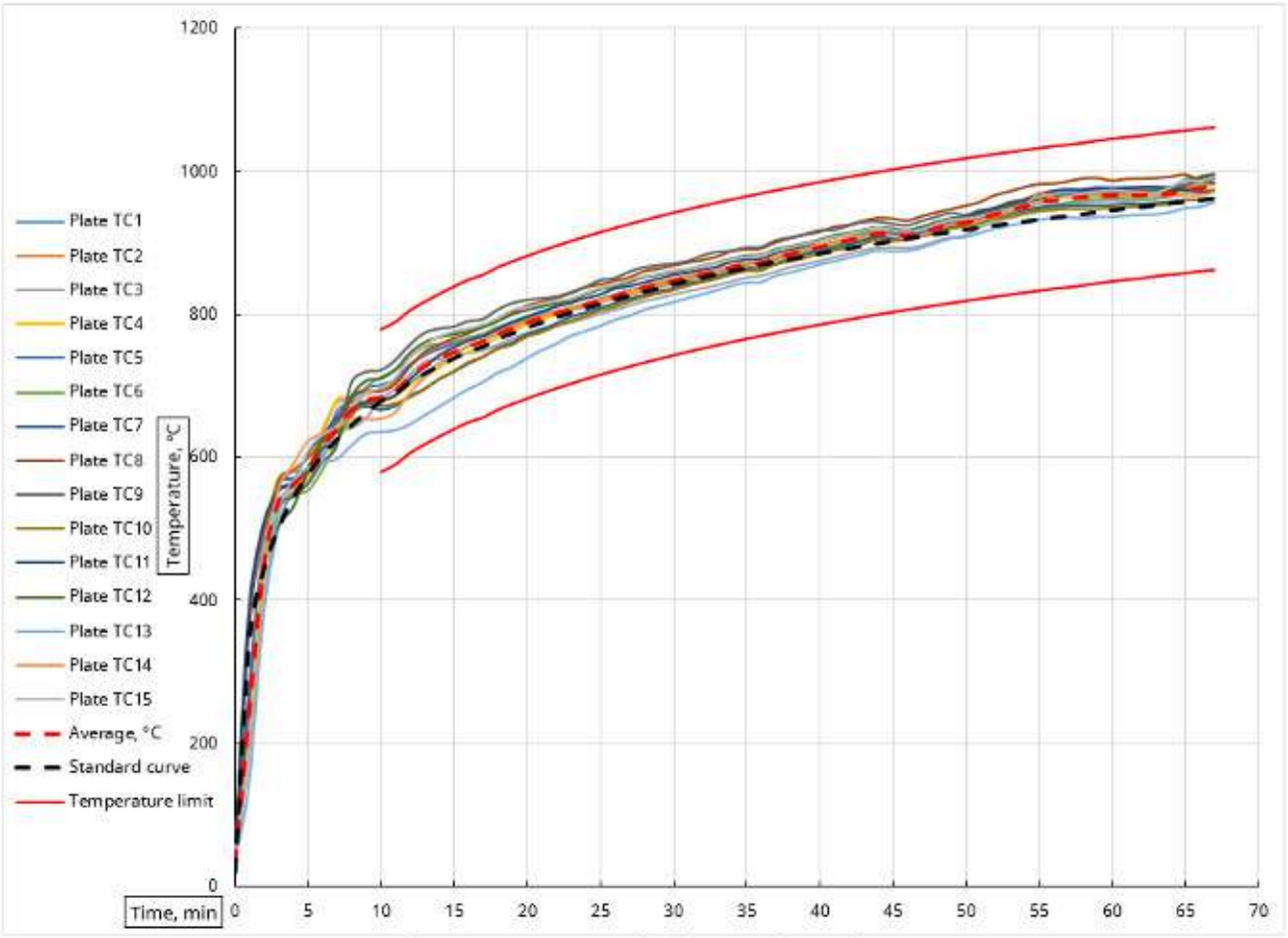


Figure 1. Scheme of the temperature and deflection measuring points on the unexposed side of the door set.

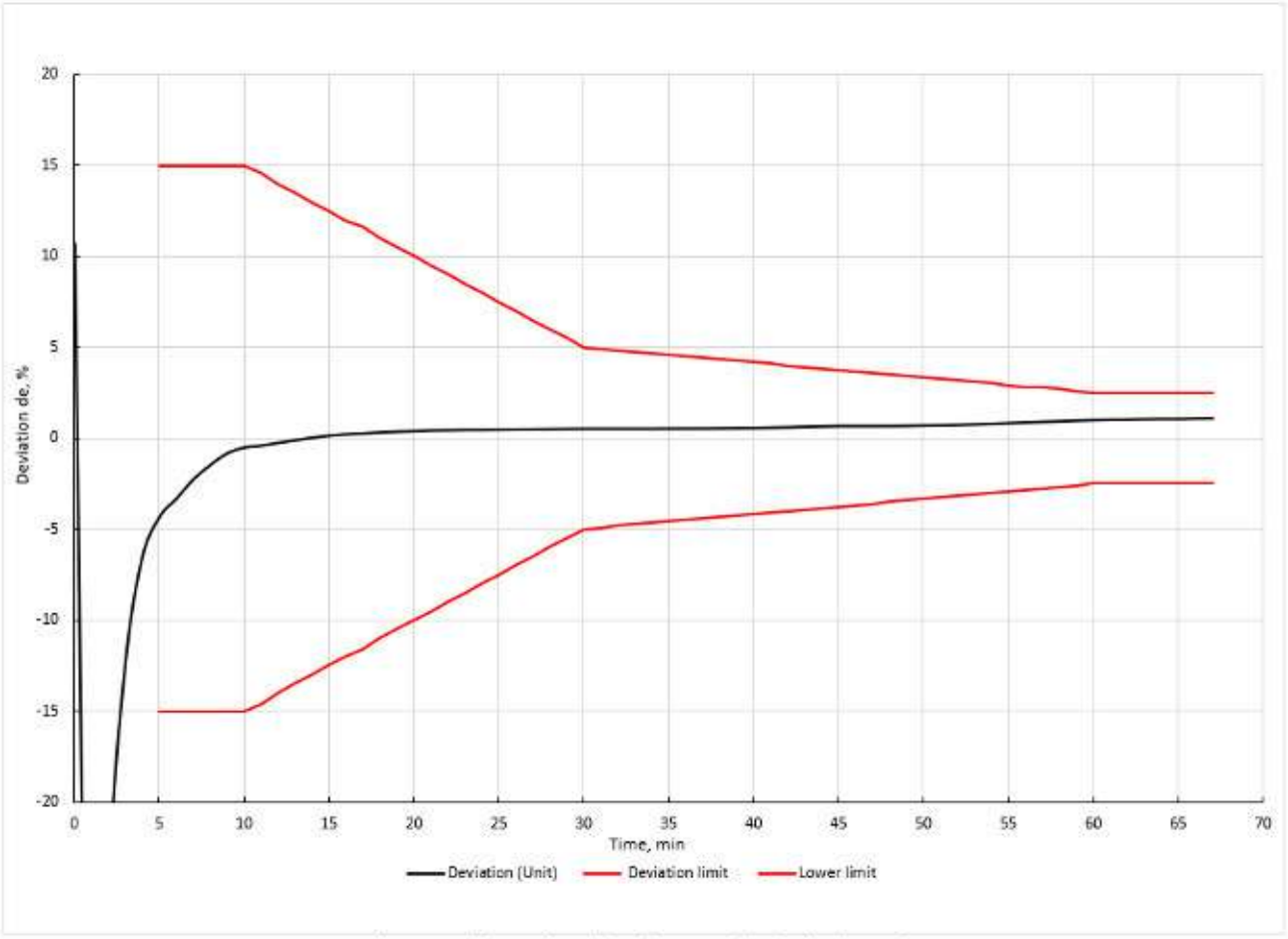
x – Temperature measuring point (standard procedure)
X – Temperature measuring point (standard procedure – frame)
* – Temperature measuring point (supplementary procedure)
▽ – Deflection measuring point

5 TEST RESULTS

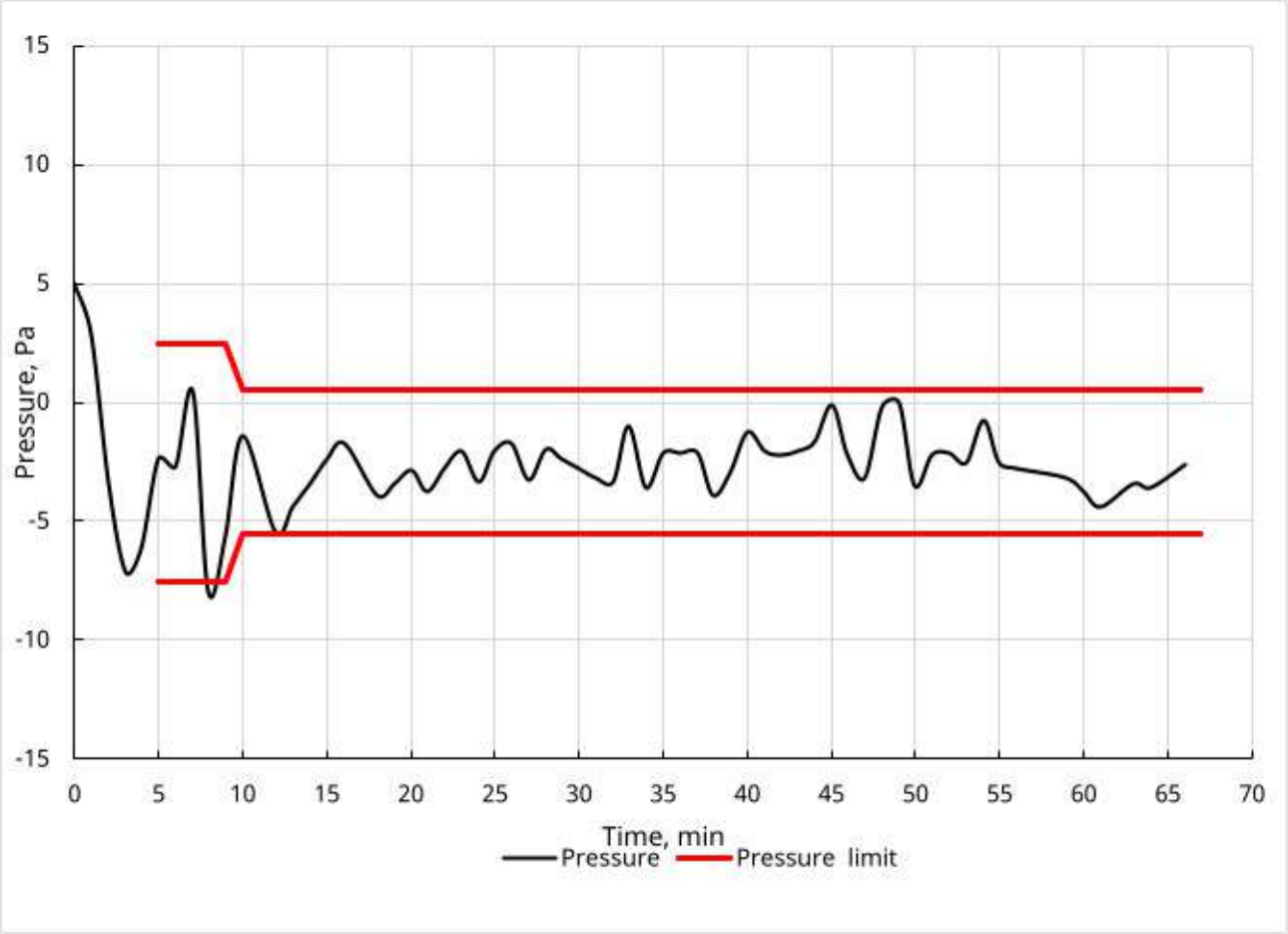
5.1 Furnace conditions



Graph 1.Temperature in the furnace during the test

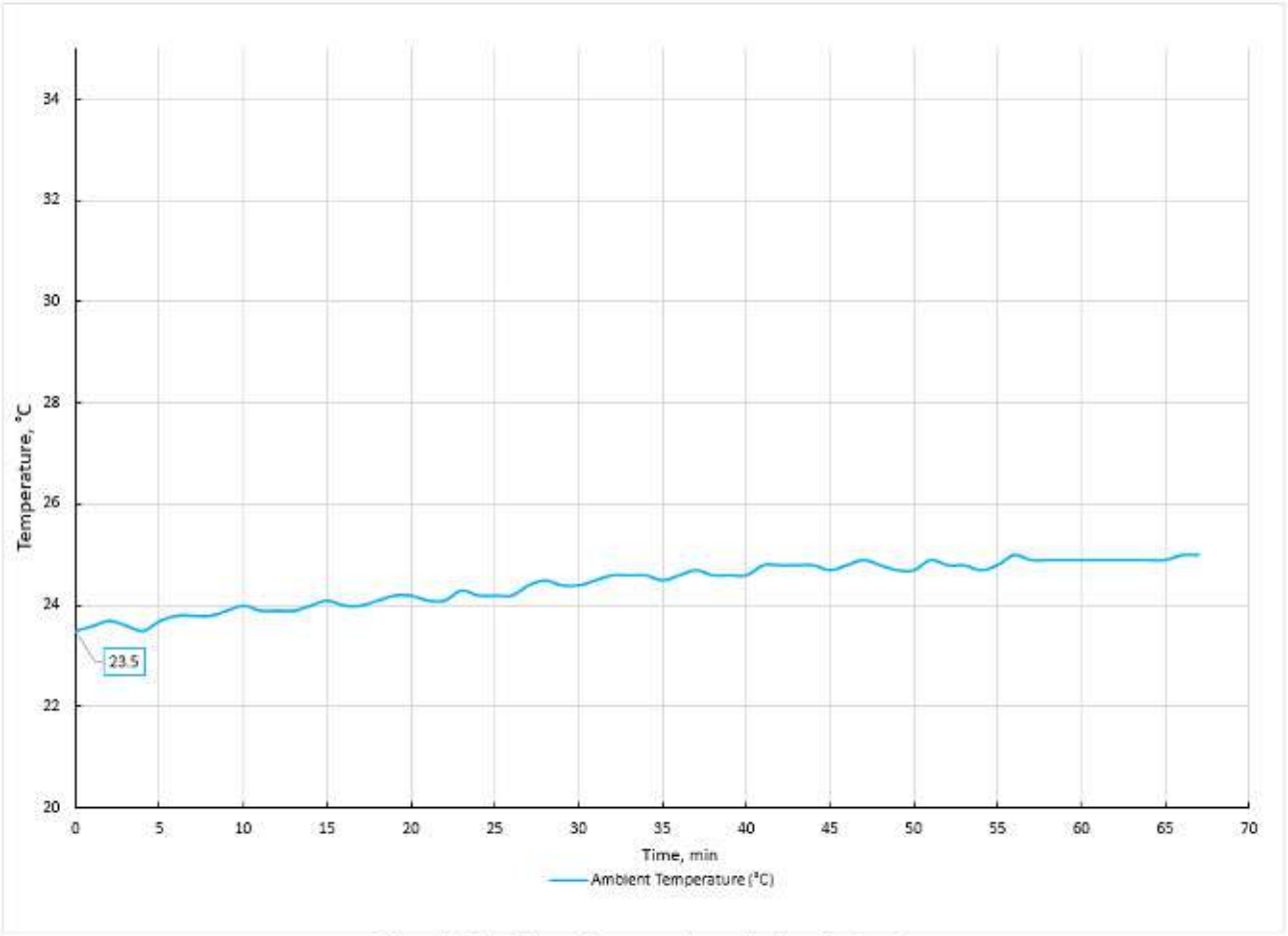


Graph 2. Deviation de with tolerance limits during the test



Graph 3. Pressure inside the furnace during the test

Note: due to the combustion of the specimen before 10 mins, this caused the slight out of tolerance of the specimen.



Graph 4. Ambient temperature during the test.

5.2 Fire test results

5.2.1 Observations

Table 8. test observation for the test.

Time, (min:sec)	OBSERVATION
0:00	The test started. 0079-29-01 (Door 1, right), -02(Door 2, left)
2:00	- Smoke from the door sill of both specimens. - Smoke from the top left edge of door leaf 2 (D2).
9:50	Smoke from the keyhole of D2.
24:42	Smoke from the right vertical architrave of D1.
24:50	Moisture observed from the top horizontal edge of the supporting construction.
27:52	Moisture observed from the top horizontal edge of the supporting construction.
30:00	Deflection measurement.
37:00	Moisture observed from the sill of each specimen
44:25	TC 28 has fallen from D2.
45:50	Roving TC applied at TC28; Max TC = 47.3
53:30	Roving TC applied at TC28; Max TC = 81.6
55:40	Roving TC applied at TC20; Max TC = 76.7
57:05	Cotton pad application at top right corner of D1, ignition of cotton pad (Integrity Failure)
59:46	Cotton pad application at top right corner of D2, no ignition of cotton pad.
63:38	Cotton pad application at top right corner of D2. Charring but not ignition.
65:10	Cotton pad application on D2, at mid height between top right corner and mid height of the door leaf. Charring but no ignition of cotton pad.
66:20	Cotton pad application at the top right corner of D2. No ignition of cotton pad.
66:34	Sustained flaming at the mid height of the left edge of D2 (Integrity Failure)
67:37	Test has ended.

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5.2.2 Deflection measurements

Deflection measurements are shown Table 9.

Table 9

	Time (min.)	*Deflection at the measuring point, mm*													
		Door 1							Door 2						
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
„+" Deflection towards the furnace *„-" Deflection outwards the furnace*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	+6	0	+1	+4	0	+1	0	+3	+5	+3	+3	+1	-2	+3
	20	+3	+3	+1	+4	0	-1	0	+3	+7	+4	+4	+1	-3	+3
	30	+4	+8	+5	+8	-1	0	0	+4	+8	+5	+2	+2	-1	+8
	40	+3	+9	+2	+7	-7	0	0	+6	+10	+4	+9	-3	+7	+4
	50	+6	0	+1	+4	0	+1	0	+3	+5	+3	+3	+1	-2	+3
	55	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1
	60	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1	/1

/1 – measurements where not taken due to safety concerns on some deflection points and after 50+ minutes onwards

5.2.3 Temperature rise & radiation measurements on the unexposed side of the door

Temperature rise on the unexposed side of door set is shown in table 10 and table 11.

Table 10

Time (min)	0079-23-01 (Door 1)																	ΔT_{avg} Avg.	ΔT_{max} pts.: Std.	ΔT_{max} pts.: supp	ΔT_{max} pts.: Frame	Radiation (kW/m²)
	Standard Procedure									Supplementary procedure				Door Frame				1-5,	1-9,	10-13	14 - 17	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	°C	°C	°C	°C	
0	-0.4	0.2	0.3	-0.3	-0.2	-0.2	0.5	0.7	0.1	-0.5	0	-0.3	-0.6	-0.6	0.4	0.4	-0.1	-0.08	0.7	0.7	0.4	0
1	-0.3	0.4	0.5	-0.2	-0.1	-0.1	0.6	0.9	0.1	-0.4	0.3	-0.4	-0.7	-0.7	0.3	0.5	0	0.06	0.9	0.9	0.5	0
2	-0.3	0.3	0.4	-0.2	-0.1	-0.1	0.8	0.7	0.1	-0.5	12.33	-0.1	-0.6	-0.6	0.7	0.4	0	0.02	0.8	12.33	0.7	0
3	-0.2	0.4	0.5	-0.2	-0.1	0	0.9	0.8	0.3	-0.4	19.74	-0.1	-0.5	-0.6	1	0.4	0.1	0.08	0.9	19.74	1	0
4	-0.1	0.4	0.4	-0.2	-0.1	-0.1	1.3	0.7	0.2	-0.3	15.73	0.2	-0.5	-0.5	1.9	0.3	0.2	0.08	1.3	15.73	1.9	0
5	-0.2	0.4	0.3	-0.1	0	0	1.1	0.7	0.2	-0.4	12.73	0.2	-0.5	-0.6	2	0.4	0.1	0.08	1.1	12.73	2	0
6	-0.1	0.3	0.4	0.1	0.2	0.1	1.1	0.8	0.3	-0.3	11.02	0.8	-0.5	-0.5	1.6	0.4	0	0.18	1.1	11.02	1.6	0
7	0	0.4	0.5	0.2	0.2	0.1	0.9	0.7	0.3	0	9.12	1.7	-0.4	-0.4	1.3	0.3	0.1	0.26	0.9	9.12	1.3	0
8	0.1	0.3	0.4	0.2	0.2	0.1	0.9	0.7	0.4	0.9	9.92	2.2	-0.4	-0.5	1.1	0.4	0.1	0.24	0.9	9.92	1.1	0
9	0	0.4	0.4	0.2	0.2	0.1	0.8	0.8	0.3	2.3	9.72	2.51	-0.3	-0.4	1	0.4	0	0.24	0.8	9.72	1	0
10	0	0.4	0.5	0.4	0.3	0.3	1	0.7	0.4	4.21	10.02	2.51	-0.2	-0.4	0.8	0.4	0.2	0.32	1	10.02	0.8	0
11	0	0.5	0.4	0.3	0.2	0.4	0.9	0.8	0.4	5.31	8.12	2.81	0	-0.3	0.7	0.4	0.1	0.28	0.9	8.12	0.7	0
12	0.1	0.4	0.5	0.3	0.2	0.4	1	0.9	0.4	5.81	5.71	3.21	0.2	-0.4	0.6	0.4	0.1	0.3	1	5.81	0.6	0
13	0.1	0.5	0.5	0.3	0.2	0.5	1.1	0.9	0.4	6.71	5.01	3.51	0.4	-0.5	0.5	0.4	0.2	0.32	1.1	6.71	0.5	0

14	0.1	0.6	0.5	0.3	0.2	0.5	1.1	0.9	0.5	7.31	4.81	4.11	0.6	-0.5	0.5	0.3	0.2	0.34	1.1	7.31	0.5	0
15	0.2	0.6	0.6	0.4	0.4	0.7	1.2	0.9	0.5	7.92	4.81	4.61	0.8	-0.4	0.7	0.5	0.2	0.44	1.2	7.92	0.7	0
16	0.3	0.7	0.6	0.4	0.4	1	1.3	1.1	0.5	8.82	4.71	5.21	1.1	-0.4	0.7	0.7	0.1	0.48	1.3	8.82	0.7	0
17	0.3	0.9	0.7	0.5	0.5	1	1.5	1.1	0.7	9.72	5.11	5.81	1.6	-0.4	0.8	0.5	0.2	0.58	1.5	9.72	0.8	0
18	0.4	1	0.9	0.7	0.7	1.2	1.8	1.4	0.8	10.02	5.61	6.61	2	-0.4	0.8	0.6	0.2	0.74	1.8	10.02	0.8	0
19	0.6	1.2	1	0.9	0.8	1.3	1.8	1.4	1.1	10.52	6.11	7.12	2.51	-0.4	0.9	0.7	0.4	0.9	1.8	10.52	0.9	0
20	0.9	1.4	1.2	1.1	1.1	1.8	2.3	1.7	1.4	11.72	6.51	7.82	3.01	-0.4	0.9	0.6	0	1.14	2.3	11.72	0.9	0
21	1	1.6	1.4	1.3	1.3	2.2	2.61	1.9	1.6	14.73	7.32	8.72	3.71	-0.4	1	0.6	-0.1	1.32	2.61	14.73	1	0
22	1.4	2	1.7	1.6	1.6	2.41	3.11	2.2	1.9	21.34	8.42	9.62	4.31	-0.5	1.2	0.7	-0.2	1.66	3.11	21.34	1.2	0
23	1.6	2.31	2.1	2	1.9	2.71	3.41	2.5	2.3	23.95	9.32	10.72	4.91	-0.6	1.6	0.8	-0.3	1.982	3.41	23.95	1.6	0
24	2.01	2.81	2.51	2.3	2.4	3.21	4.01	2.81	2.6	27.96	10.72	11.83	5.71	-0.8	1.7	0.8	-0.3	2.406	4.01	27.96	1.7	0
25	2.41	3.11	2.71	2.71	2.81	3.41	4.31	3.21	3.01	21.54	10.92	14.23	6.41	-0.7	1.7	1.1	-0.2	2.75	4.31	21.54	1.7	0
26	2.81	3.51	3.21	3.11	3.21	3.91	4.81	3.71	3.61	21.64	11.63	17.04	7.32	-0.8	1.7	1.2	-0.3	3.17	4.81	21.64	1.7	0
27	3.31	4.01	3.71	3.61	3.71	4.31	5.11	4.11	4.11	22.24	12.93	17.64	8.22	-0.8	1.9	1.2	-0.2	3.67	5.11	22.24	1.9	0
28	3.81	4.51	4.11	4.01	4.31	4.91	5.71	4.61	4.61	23.15	15.03	19.24	9.12	-0.9	1.9	1.3	-0.2	4.15	5.71	23.15	1.9	0
29	4.41	5.01	4.71	4.61	4.91	5.51	6.21	5.11	5.21	23.75	15.83	20.44	9.92	-0.8	2.2	1.6	-0.1	4.73	6.21	23.75	2.2	0
30	4.81	5.51	5.21	5.21	5.51	6.11	6.82	5.51	5.81	24.55	15.93	22.25	10.92	-0.8	2.41	1.7	-0.1	5.25	6.82	24.55	2.41	0
31	5.41	6.01	5.71	5.71	6.01	6.92	7.52	6.11	6.31	24.55	16.24	23.55	11.63	-0.6	2.51	1.9	0	5.77	7.52	24.55	2.51	0
32	6.01	6.71	6.41	6.31	6.61	7.52	8.12	6.61	7.01	26.55	16.94	25.05	12.33	-0.6	2.61	2.1	-0.1	6.41	8.12	26.55	2.61	0
33	6.61	7.42	7.02	6.91	7.22	8.32	8.72	7.42	7.62	27.96	17.54	26.96	13.23	-0.6	2.71	2.1	-0.1	7.036	8.72	27.96	2.71	0
34	7.22	7.92	7.52	7.62	7.92	9.12	9.42	7.82	8.32	30.06	18.44	28.26	14.13	-0.6	3.01	2.4	0	7.64	9.42	30.06	3.01	0
35	7.82	8.52	8.22	8.02	8.72	9.62	9.92	8.72	9.12	32.67	18.74	30.07	14.93	-0.6	3.11	2.4	0.1	8.26	9.92	32.67	3.11	0

36	8.42	9.12	8.82	8.92	9.32	10.52	10.62	9.22	9.72	34.07	19.94	32.77	15.83	-0.6	3.41	2.61	0	8.92	10.62	34.07	3.41	0
37	9.22	9.92	9.52	9.42	10.12	11.63	11.43	9.92	10.42	34.47	20.54	34.27	16.74	-0.6	3.51	2.81	0.2	9.64	11.63	34.47	3.51	0
38	9.82	10.62	10.22	10.12	10.82	12.23	12.13	10.62	11.22	36.17	21.15	38.68	17.84	-0.6	3.91	3.11	0.2	10.32	12.23	38.68	3.91	0
39	10.52	11.22	10.92	10.62	11.52	13.23	12.83	11.43	11.82	38.18	22.75	41.99	19.14	-0.4	4.31	3.31	0.1	10.96	13.23	41.99	4.31	0
40	11.22	12.02	11.53	11.42	12.23	14.13	13.53	12.13	12.53	39.08	25.66	43.19	21.65	-0.4	4.81	3.41	0.2	11.684	14.13	43.19	4.81	0
41	11.93	12.73	12.23	12.02	13.13	15.33	13.83	13.03	13.53	40.78	31.87	47.3	25.96	-0.3	5.91	3.71	0.4	12.408	15.33	47.3	5.91	0
42	12.73	13.53	13.03	13.03	14.13	16.34	14.33	13.73	14.23	42.79	34.88	51.71	31.77	-0.3	6.32	4.21	0.3	13.29	16.34	51.71	6.32	0
43	13.63	14.43	13.83	13.83	15.33	18.14	15.24	14.53	15.23	43.79	39.29	55.72	38.08	-0.1	8.62	4.61	0.4	14.21	18.14	55.72	8.62	0
44	14.73	15.53	14.73	15.13	17.04	20.14	16.44	15.43	16.33	45.69	40.79	59.13	44.8	-0.2	8.32	5.01	0.4	15.432	20.14	59.13	8.32	0
45	16.13	16.83	15.73	16.63	18.74	22.25	17.84	16.54	17.94	48.9	42.59	62.24	50.31	-0.2	8.32	5.31	0.5	16.812	22.25	62.24	8.32	0
46	18.04	18.74	17.44	19.14	21.85	26.16	20.15	17.84	20.04	52.61	45.5	64.04	54.72	-0.1	8.72	6.41	0.6	19.042	26.16	64.04	8.72	0
47	21.34	21.34	19.54	23.45	26.76	41.39	24.06	19.64	23.65	56.31	50.71	64.34	58.93	0	10.02	7.82	0.6	22.486	41.39	64.34	10.02	0
48	27.86	25.75	22.75	32.57	36.28	66.04	33.68	21.95	31.27	60.82	53.42	63.44	62.04	0.2	11.33	10.02	0.5	29.042	66.04	66.04	11.33	0
49	54.41	34.57	29.06	54.61	49.61	68.25	52.42	26.66	43.49	64.03	55.02	65.74	64.04	0.2	13.63	12.63	0.6	44.452	68.25	68.25	13.63	0
50	69.74	44.99	49.11	66.13	58.03	66.65	65.85	34.78	53.92	66.73	57.22	66.95	64.74	0.3	15.94	15.94	0.7	57.6	69.74	69.74	15.94	0
51	70.54	52.61	65.44	68.94	61.53	66.55	69.36	43.8	61.03	68.14	60.43	70.15	65.44	0.5	17.94	18.44	1.3	63.812	70.54	70.54	18.44	0
52	70.54	57.52	67.35	70.24	63.24	66.55	69.76	54.23	64.64	68.64	64.04	73.16	65.34	0.7	19.15	19.44	1.1	65.778	70.54	73.16	19.44	0
53	70.24	60.52	66.65	70.04	64.04	66.65	69.56	64.85	66.24	68.74	63.14	76.07	65.24	0.8	19.65	20.95	1.2	66.298	70.24	76.07	20.95	0
54	69.94	61.22	66.14	68.64	64.24	66.75	69.36	69.26	66.04	69.34	66.85	78.47	64.54	0.9	20.65	21.85	1.1	66.036	69.94	78.47	21.85	0.02
55	69.34	61.72	66.24	68.14	64.04	66.55	69.16	69.76	66.54	69.64	67.75	90.9	64.04	1	21.35	23.25	1.3	65.896	69.76	90.9	23.25	0
56	69.24	61.42	65.74	67.74	64.14	66.45	68.96	69.76	66.24	70.04	69.45	142.31	63.74	1	21.95	28.37	1.4	65.656	69.76	142.31	28.37	0.02
57	69.44	61.22	65.44	67.54	64.14	65.74	69.06	75.38	65.84	69.54	105.13	208.25	64.04	1.2	21.45	52.82	1.6	65.556	75.38	208.25	52.82	0.02

58	69.04	61.02	65.04	68.04	63.84	65.04	69.46	105.65	65.84	73.75	331.02	256.96	65.04	1.6	22.56	144.44	1.7	65.396	105.65	331.02	144.44	0.03
59	68.24	58.72	60.53	68.44	53.82	64.74	69.36	57.83	61.03	76.05	368	91.9	59.73	1.7	24.56	73.37	1.9	61.95	69.36	368	73.37	0.02
60	68.24	59.42	61.73	69.04	55.02	64.44	92.22	68.36	62.84	80.16	431.24	310.38	63.84	1.8	23.96	62.75	2	62.69	92.22	431.24	62.75	0.06
61	65.43	52.01	53.02	69.64	51.41	60.83	48.21	56.03	47	80.36	308.47	173.38	39.89	6.82	18.14	36.69	1.4	58.302	69.64	308.47	36.69	0.03
62	1	1	4.81	0.1	0.6	0.7	-3.11	0.4	1.1	3.11	29.46	64.74	2.61	-4.41	-1.4	0.7	-0.4	1.502	4.81	64.74	0.7	0.04
63	-2.8	-1.8	-3.51	-3.31	0.2	-2	-3.71	-0.7	-1.6	-2.2	0.8	6.41	-2.91	-2.3	-4.81	-2.51	-3.01	-2.244	0.2	6.41	-2.3	0.03
64	-3.31	-1.8	-3.31	-3.11	0.1	-2.2	-3.81	-2.11	-1.8	-2.3	-0.6	2.61	-3.31	-1.9	-5.01	-3.81	-4.11	-2.286	0.1	2.61	-1.9	0.04
65	-3.51	-2.4	-2.51	-2.81	-0.1	-2.1	-3.61	-3.11	-1.4	-2.4	-1.4	1.4	-3.91	-1.7	-5.01	-3.81	-3.81	-2.266	-0.1	1.4	-1.7	0.07
66	-3.41	-2.3	-1.3	-1.5	0.1	-2.31	-3.81	-3.01	-1.3	-2.71	-1.4	0.5	-3.81	-1.7	-4.81	-4.21	-3.91	-1.682	0.1	0.5	-1.7	0.05
67	24.56	27.16	26.16	27.16	24.46	27.66	29.46	26.87	24.96	57.73	147.07	74.39	31.35	3.51	14.63	8.22	3.01	25.9	29.46	147.07	14.63	0.18

Table 11

Time, min	0079-23-02 (Door 2)																	ΔT_{avg} Avg.	ΔT_{max} pts.: Std.	ΔT_{max} pts.: supp	ΔT_{max} pts.: Frame	Radiation, kW/m²
	Standard Procedure									Supplementary Procedure				Door frame				18-22	18-26	27-30	22 - 26	
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	°C	°C	°C	°C	
0	0.4	-0.2	0.3	0	-0.3	-0.3	0.7	0.7	0.2	-0.1	-0.8	-0.9	-0.4	-0.7	0	0.2	0.6	0.04	0.7	0.7	0.6	0
1	0	-0.9	-0.9	-0.4	-0.6	0	0.4	0.6	-0.2	-0.3	-0.4	-0.1	-0.5	0.1	0.7	0.9	-0.2	-0.56	0.6	0.6	0.9	0
2	0	-0.8	-0.8	-0.3	-0.6	0	0.3	0.6	-0.1	-0.3	-0.5	0	-0.5	0	0.5	0.9	-0.2	-0.5	0.6	0.6	0.9	0
3	0	-0.7	-0.8	-0.4	-0.5	0.2	0.3	0.7	0	-0.2	-0.5	0	-0.5	0.1	0.6	0.8	-0.2	-0.48	0.7	0.7	0.8	0
4	0.2	-0.8	-0.7	-0.3	-0.5	0.2	2.1	0.7	0	-0.1	-0.4	1.6	-0.5	0.1	1	0.9	-0.2	-0.42	2.1	2.1	1	0
5	0	-0.8	-0.8	-0.3	-0.5	0.2	1.8	0.7	0	-0.1	-0.5	3.41	-0.5	0.1	1.7	0.8	-0.1	-0.48	1.8	3.41	1.7	0
6	0.1	-0.6	-0.7	-0.2	-0.4	0.3	2.4	0.7	0	-0.1	-0.4	5.11	-0.5	0.1	1.2	0.9	-0.1	-0.36	2.4	5.11	1.2	0
7	0	-0.6	-0.6	-0.1	-0.3	0.3	2	0.7	0.1	0	-0.2	4.81	-0.5	0.2	1.1	0.8	-0.1	-0.32	2	4.81	1.1	0
8	0.1	-0.6	-0.6	-0.1	-0.3	0.3	1.6	0.7	0	-0.1	-0.2	3.71	-0.4	0.2	1	0.8	0	-0.3	1.6	3.71	1	0
9	0	-0.5	-0.5	-0.1	-0.3	0.4	1.3	0.7	0	0.8	-0.1	3.51	-0.4	0.2	0.8	0.8	-0.1	-0.28	1.3	3.51	0.8	0
10	0.2	-0.5	-0.5	-0.1	-0.4	0.4	1.1	0.7	0.1	2	-0.2	3.11	-0.5	0.1	0.6	0.7	-0.1	-0.26	1.1	3.11	0.7	0
11	0.1	-0.5	-0.5	-0.1	-0.3	0.4	1.1	0.7	0	2.7	-0.2	3.01	-0.4	0.2	0.8	0.8	0	-0.26	1.1	3.01	0.8	0
12	0.2	-0.6	-0.5	0	-0.2	0.5	1.2	0.8	0.1	4.21	-0.2	3.31	-0.3	0.2	0.7	0.9	-0.1	-0.22	1.2	4.21	0.9	0
13	0.3	-0.5	-0.4	0	-0.2	0.6	1.1	0.8	0.1	5.21	-0.2	3.71	-0.3	0.1	0.7	0.8	-0.1	-0.16	1.1	5.21	0.8	0
14	0.3	-0.5	-0.5	0.1	-0.1	0.8	1.1	0.9	0.2	6.01	-0.1	4.21	-0.2	0.3	0.8	0.8	0	-0.14	1.1	6.01	0.8	0
15	0.3	-0.4	-0.5	0.1	-0.1	0.7	1.1	0.9	0.2	6.82	-0.2	4.61	-0.1	0.3	0.9	0.8	0	-0.12	1.1	6.82	0.9	0
16	0.4	-0.5	-0.5	0.2	0	1	1.2	0.9	0.3	7.42	-0.2	5.31	0	0.3	0.9	0.9	0.1	-0.08	1.2	7.42	0.9	0
17	0.5	-0.3	-0.3	0.3	0.1	1.1	1.2	1.1	0.5	7.72	0	6.01	0.1	0.2	0.9	1	0	0.06	1.2	7.72	1	0

18	0.6	-0.4	-0.4	0.4	0.2	1.2	1.3	1.3	0.7	9.12	-0.1	6.71	0.2	0.2	0.8	1	0.1	0.08	1.3	9.12	1	0
19	0.9	-0.3	-0.2	0.6	0.3	1.3	1.4	1.4	0.8	10.32	0.1	7.42	0.5	0.3	0.9	1.1	0.1	0.26	1.4	10.32	1.1	0
20	1	-0.2	-0.3	0.7	0.6	1.8	1.7	1.6	1	11.03	0.1	8.32	0.7	0.4	1	1	0.1	0.36	1.8	11.03	1	0
21	1.3	-0.2	-0.3	0.9	0.8	1.7	1.8	1.7	1.2	12.93	0.1	9.12	1.1	0.3	1	1	0.1	0.5	1.8	12.93	1	0
22	1.6	-0.2	-0.3	1.1	1.1	1.8	2.1	2.1	1.6	13.53	0.1	10.12	1.5	0.3	0.8	1.1	0.1	0.66	2.1	13.53	1.1	0
23	1.9	-0.2	-0.3	1.5	1.4	2.1	2.4	2.3	1.9	12.83	0.2	11.02	1.8	0.4	0.9	1	0.1	0.86	2.4	12.83	1	0
24	2.3	-0.3	-0.3	1.7	1.8	2.5	2.6	2.7	2.4	13.13	0.1	12.13	2.4	0.4	1	1	0.1	1.04	2.7	13.13	1	0
25	2.6	-0.1	-0.2	2.2	2.2	2.8	2.8	3	2.8	13.43	0.2	13.33	2.91	0.3	1.1	1.1	0.1	1.34	3	13.43	1.1	0
26	3.11	-0.1	0	2.6	2.71	3.11	3.21	3.61	3.21	14.03	0.3	14.33	3.51	0.4	1.3	1.1	0.2	1.664	3.61	14.33	1.3	0
27	3.51	0	-0.1	2.91	3.21	3.61	3.61	4.01	3.71	15.04	0.2	15.53	4.01	0.4	1.3	1.2	0.2	1.906	4.01	15.53	1.3	0
28	4.01	0	0	3.31	3.71	3.91	3.91	4.41	4.21	16.14	0.4	16.64	4.71	0.4	1.3	1.3	0.2	2.206	4.41	16.64	1.3	0
29	4.41	0.1	0.1	3.91	4.31	4.61	4.51	4.91	4.71	17.04	0.4	18.14	5.51	0.4	1.4	1.4	0.3	2.566	4.91	18.14	1.4	0
30	5.01	0.1	0.2	4.41	4.81	4.91	4.81	5.51	5.31	18.24	0.5	19.44	6.21	0.4	1.6	1.5	0.2	2.906	5.51	19.44	1.6	0
31	5.61	0.2	0.2	5.01	5.51	5.71	5.61	6.01	5.81	18.64	0.4	19.44	6.81	0.4	1.7	1.6	0.3	3.306	6.01	19.44	1.7	0
32	6.11	0.1	0.2	5.51	6.11	6.21	6.21	6.61	6.41	19.85	0.6	14.33	7.52	0.4	2	1.7	0.3	3.606	6.61	19.85	2	0
33	6.81	0.3	0.4	6.21	6.71	6.91	6.81	7.22	6.81	20.35	0.6	15.33	8.22	0.5	2	2.1	0.3	4.086	7.22	20.35	2.1	0
34	7.42	0.3	0.3	6.71	7.52	7.31	7.21	7.92	7.62	21.85	0.6	16.64	9.32	0.5	2.1	2.1	0.3	4.45	7.92	21.85	2.1	0
35	8.02	0.3	0.3	7.32	8.12	8.12	7.91	8.52	8.12	22.86	0.7	17.44	10.12	0.4	2.2	2.3	0.4	4.812	8.52	22.86	2.3	0
36	8.82	0.3	0.4	7.82	8.82	8.52	8.52	9.32	8.92	23.96	0.6	18.94	10.82	0.5	2.2	2.3	0.4	5.232	9.32	23.96	2.3	0
37	9.52	0.3	0.4	8.52	9.52	9.42	9.22	9.92	9.42	25.06	0.6	19.84	11.53	0.5	2.5	2.6	0.4	5.652	9.92	25.06	2.6	0
38	10.02	0.3	0.4	9.02	10.12	10.02	10.02	10.72	10.22	26.26	0.7	21.35	12.83	0.5	2.7	2.7	0.5	5.972	10.72	26.26	2.7	0
39	10.72	0.4	0.5	9.62	10.62	10.52	10.32	11.43	10.82	27.57	0.7	22.95	13.43	0.5	2.7	2.9	0.6	6.372	11.43	27.57	2.9	0
40	11.53	0.4	0.4	10.32	11.13	11.62	11.22	12.13	11.22	28.77	0.7	24.05	14.03	0.6	3	3.2	0.6	6.756	12.13	28.77	3.2	0
41	12.13	0.5	0.5	10.82	11.83	12.33	12.12	12.93	12.13	29.87	0.7	24.56	15.03	0.6	3.21	3.5	0.7	7.156	12.93	29.87	3.5	0
42	13.03	0.5	0.5	11.53	12.53	13.43	12.72	13.73	12.83	30.98	0.8	26.46	15.64	0.7	3.51	3.81	0.7	7.618	13.73	30.98	3.81	0
43	13.73	0.4	0.6	12.23	13.13	14.33	13.63	14.63	13.43	32.38	0.8	28.36	16.94	0.7	3.81	4.11	1	8.018	14.63	32.38	4.11	0
44	14.53	0.5	0.6	12.83	14.13	14.93	14.33	15.74	14.33	34.18	0.8	30.37	18.04	0.7	3.91	4.41	1	8.518	15.74	34.18	4.41	0
45	15.54	0.4	0.6	13.43	14.93	16.23	15.43	17.04	15.33	35.69	0.8	32.47	18.84	0.8	4.41	4.81	0.9	8.98	17.04	35.69	4.81	0

46	16.84	0.4	0.5	14.13	16.04	17.64	16.73	18.74	16.44	37.59	0.7	34.68	20.25	0.8	4.61	5.41	1.2	9.582	18.74	37.59	5.41	0
47	18.64	0.5	0.5	15.03	17.74	18.24	18.34	21.65	18.14	40.4	0.8	37.79	22.55	0.8	4.81	6.21	1.4	10.482	21.65	40.4	6.21	0
48	21.15	0.4	0.4	15.94	20.35	20.84	21.44	26.36	20.75	44.81	0.7	41.6	25.76	0.9	5.41	7.31	1.6	11.648	26.36	44.81	7.31	0
49	25.36	0.4	0.6	17.14	24.56	22.15	26.75	36.49	25.36	51.13	0.6	43.9	32.27	0.8	5.71	9.12	1.8	13.612	36.49	51.13	9.12	0
50	33.68	0.3	0.6	19.14	35.98	25.25	40.78	54.03	35.98	58.04	0.7	46.81	42.8	0.9	6.81	11.92	2	17.94	54.03	58.04	11.92	0
51	50.92	0.4	0.7	22.05	58.04	29.66	61.62	65.56	65.55	63.86	0.7	49.82	53.42	0.9	8.62	14.13	2.6	26.422	65.56	65.56	14.13	0
52	65.35	0.5	0.6	28.06	66.76	38.98	66.83	68.87	70.56	67.87	0.8	53.52	60.04	1.1	11.12	17.44	2.9	32.254	70.56	70.56	17.44	0
53	67.56	0.6	0.7	45.81	66.86	48.7	67.84	69.57	70.56	69.17	0.7	53.62	63.35	1.2	13.73	18.94	3.41	36.306	70.56	70.56	18.94	0
54	67.36	0.6	0.8	61.14	66.46	55.82	68.04	69.37	70.26	69.57	0.8	69.26	65.05	1.5	15.63	21.15	3.81	39.272	70.26	70.26	21.15	0.03
55	66.96	0.7	0.7	65.15	66.86	60.83	68.44	68.37	70.26	69.17	0.8	71.07	65.65	1.8	17.74	20.65	4.41	40.074	70.26	71.07	20.65	0
56	66.25	0.8	0.8	67.16	66.46	62.23	67.74	67.77	71.17	69.37	0.8	72.77	66.05	1.9	18.04	22.05	5.11	40.294	71.17	72.77	22.05	0
57	65.65	0.8	0.8	67.26	65.85	63.14	67.84	67.07	71.17	69.17	0.9	74.37	65.85	2	18.94	22.25	5.41	40.072	71.17	74.37	22.25	0
58	65.15	0.8	0.7	67.06	65.45	62.94	67.43	66.76	71.07	68.97	0.9	78.28	65.25	2.2	19.44	23.15	6.01	39.832	71.07	78.28	23.15	0
59	64.35	0.7	0.7	66.65	65.05	63.54	67.53	66.36	70.46	68.37	0.8	81.29	65.65	2.3	20.14	23.45	6.41	39.49	70.46	81.29	23.45	0
60	63.85	0.7	0.7	65.35	64.05	62.53	67.23	66.46	70.26	67.77	0.9	87.4	66.76	2.5	19.94	23.85	7.11	38.93	70.26	87.4	23.85	0
61	63.85	1	1.2	63.95	63.35	61.23	66.33	66.16	69.96	67.57	0.9	90.61	67.16	2.4	19.24	25.86	7.32	38.67	69.96	90.61	25.86	0
62	63.65	1	1.2	63.35	63.35	60.73	65.93	66.46	69.86	67.77	0.9	100.03	67.66	2.9	19.14	30.27	7.82	38.51	69.86	100.03	30.27	0
63	63.55	1	1	62.04	62.85	60.43	65.53	66.46	69.76	68.17	1	121.98	68.06	2.8	19.84	34.98	8.72	38.088	69.76	121.98	34.98	0
64	63.35	0.9	1.1	61.64	62.25	60.23	65.63	67.17	69.56	70.48	1	179.72	69.26	3.1	20.84	40.59	9.12	37.848	69.56	179.72	40.59	0
65	63.65	1	1.1	61.44	61.94	60.03	65.73	67.57	69.06	75.99	0.9	183.73	69.86	3	22.45	51.32	9.72	37.826	69.06	183.73	51.32	0
66	63.85	0.9	1.1	61.04	61.34	59.93	65.43	70.47	68.96	79.8	1.2	246.48	70.87	3.31	24.85	62.84	10.12	37.646	70.47	246.48	62.84	0
67	26.26	25.96	25.26	25.46	25.26	27.87	27.87	26.65	25.25	56.33	46.4	54.12	30.27	5.11	8.61	7.32	4.81	25.64	27.87	56.33	8.61	0

6 PHOTOGRAPHS

6.1 Unexposed side view of the test specimen

Photo 1. At 00:00 seconds into the test.

Photo 2. At 57:49 minutes after Door #1 has failed due to ignition of the cotton pad.

Photo 3. At 67:14 minutes after Door #2 has failed due to sustained flaming.

6.2 Exposed side view of the test specimen

Photo 4. Before the start of the test.

Note: Due to the complete burning of both doorsets, it was not possible to retain them after the test. Extinguishment was exercised right after the test.

7 SUMMARY OF TEST RESULTS

Results of the fire resistance test of fire rated door detail single leaf door with PSB frame (EN - 60 Min. Fire rated door) and fire rated door detail single leaf door with hard wood frame (EN - 60 Min. Fire rated door) are presented in tables 7-9, graphs 1-4 and photos 1-4, refer only to the construction described in clause 3 of herein test report.

Table 5. 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, E	Sustained flaming					No failure	66:34 minutes [Mid-height, door handle area]	57 minutes	66 minutes
	Gaps disqualifying the product					No failure	No failure		
	Ignition of the cotton pad					57:05 minutes [Top right corner of door leaf]	No Failure		
Insulation, I_2	Average temperature rise (≤140 °C)					No Failure	No Failure	57 minutes	66 minutes
	Maximum temperature rise (≤180°C)					No Failure	No Failure		
	Maximum temperature rise at the door frame (≤360°C)					No Failure	No Failure		
Insulation, I_1	Average temperature rise (≤140 °C)					No Failure	No Failure	56 minutes	64 minutes
	Maximum temperature rise (≤180°C)					57 minutes [TC 12]	65 minutes [TC29]		
Radiation, W	5 kW/m²	10 kW/m²	15 kW/m²	20 kW/m²	25 kW/m²	No failure	No Failure	57 minutes	66 minutes
	-	-	-	-	-				
Duration of the test: 67 minutes									

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.
This report details the method of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in EN 1363-1. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application contained in the EN 1634-1 standard is not covered by this test report.

8 FIELD OF DIRECT APPLICATION OF TEST RESULTS

8.1 General

The field of direct application defines the allowable changes to the test specimen following a successful fire resistance test. These variations can be applied automatically without the need for the sponsor to seek additional evaluation, calculation or approval.

8.2 Materials and construction

8.2.1 General

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

8.2.2 Specific restrictions on materials and construction

The thickness of the door panel(s) shall not be reduced but may be increased.

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

For timber-based board products (e.g. particle board, blockboard, etc), the composition (e.g. type of

resin) shall not change from that tested. The density shall not be reduced but may be increased.

The cross-sectional dimensions and/or the density of the timber frames (including rebates) shall not be reduced but may be increased.

8.2.3 Decorative finishes

8.2.3.1 Paint

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

8.2.3.2 Decorative laminates

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

Decorative laminates and timber in excess of 1,5 mm thickness shall not be added without additional test.

8.2.4 Fixings

The number of fixings per unit length used to attach doorsets to supporting constructions may be

increased, but shall not be decreased and the distance between fixings may be reduced but shall not be increased.

8.2.5 Building hardware

The number of hinges and dog bolts may be increased but shall not be decreased.

NOTE 1: The number of movement restrictors such as locks and latches is not covered by direct application.

As the doorset has been tested with a door closing device fitted and with the retention force applied, then the doorset may be provided only with that closing device.

NOTE 2 Interchange of building hardware is not covered by the field of direct application.

8.3 Permissible size variations

8.3.1 General

Doorsets of sizes different from those of tested specimens are permitted within certain limitations as shown below

8.3.1.1 For size variations

No increase is allowed. Unlimited reductions from the tested specimen are permitted

8.3.1.2 Other changes

For smaller doorset sizes the relative positioning of movement restrictors (e.g. hinges and latches) shall remain the same as tested or any change to the distances between them will be limited to the same percentage reduction as the decrease of test specimen size.

8.3.1.3 Timber constructions

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

8.3.1.4 Gaps

Table 13. Maximum allowable gaps

GAPS		Measurements, mm					
		Average		Maximum		Permitted gap size	
		D1	D2	D1	D2	D1	D2
Along the horizontal edges	At the top	3.2	3.0	3.3	3.3	5.2	5.2
	At the bottom	4.1	3.9	4.8	4.2	6.5	6.0
Along the vertical edges	Hinge side	2.7	3.0	3.3	3.1	5.0	5.1
	Non-hinge side	3.1	2.4	3.2	3.0	5.2	4.7

The minimum size of the primary gaps may be reduced.

The permitted gap size may be different for different parts of the door

8.4 Asymmetrical assemblies

As the wooden doorset were tested opening into the furnace then other direction (away of the furnace) is also covered.

8.5 Supporting constructions

8.5.1 General

The fire resistance of a door assembly tested in one form of standard supporting construction may or

may not apply when it is mounted in other types of construction

8.5.2 Rigid standard supporting constructions (high or low density)

The fire resistance of a doorset tested in a high- or low-density rigid standard supporting construction 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 doorset as tested.

8.5.3 Specific rules for hinged or pivoted doorsets

a) For timber door leaves hung in timber frames, the result of a test in a rigid standard supporting

construction is applicable to that door assembly mounted in a flexible construction.

The rules above assume that the fixing methods used in each type of supporting construction are

appropriate to that construction. Thus, for example in a), the test on the timber door leaf in a timber

frame will have been carried out with appropriate fixings for timber frames in rigid constructions. The result is applicable to a timber door leaf in a timber frame mounted into a flexible construction with appropriate fixings for timber frames in flexible constructions.

9 TEST WITNESSES

	Name	Company
Test sponsor representative(s) witnessing the test.	Preman Mavilakkandy	Al Talah Board
	Rodrigo Afonso Candeo	
	Deepesh Srivastava	Intertek
	Anselmo Tabadero	Abanos Furniture and Decoration Industry
	Hari babu	
Other people witnessing the test (subject to approval from test sponsor)		

10 ATTACHMENTS

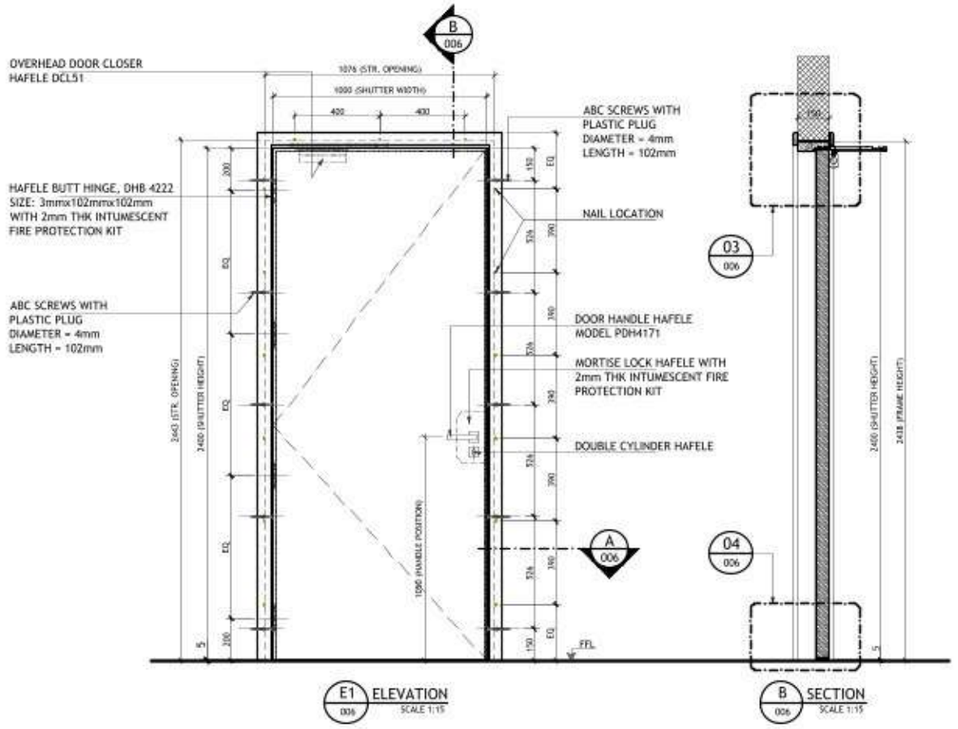
Technical documentation No.:

- J2717-STD-FR-PSB-006
- J2717-STD-FR-PSB-011
- Door Handle Sets (Model PDH4171) - 903.92.076
- Intumescent Fire Protection Kits
  - Hinge – 950.11.107
  - Mortice lock – 950.11.011
- Door lock – 911.02.145
- Lock cylinder – 916.96.027
- Butt hinge – 926.98.090
- Door Closer (DCL 51) – 931.84.829
- Boss 813+ Firestop.
- Drop seal protection kit (LAS8001 SI)
- Fire seal
  - LP1506
  - LP1504
- Intumescent sealant – Lorient
- ETT 4718 SILICONE RUBBER GASKET
- PSB board TDS
- Hardwood Beechwood
- Ritver wood glue - PW1612

11 SIGNATORIES

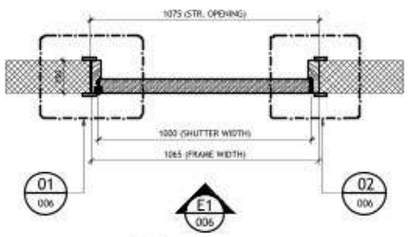
Prepared by	*Reviewed by*	*Authorized by*
Cedric Montecillo	Sebastian Ukleja	Sebastian Ukleja
Testing Technician	*Testing Manager*	*Testing Manager*
Signature	Signature	Signature

--END OF REPORT--

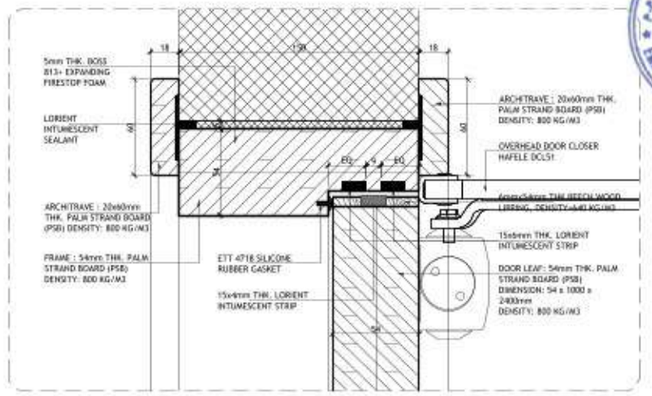


E1 006 ELEVATION SCALE 1:15

B 006 SECTION SCALE 1:15



A 006 SECTION PLAN SCALE 1:15



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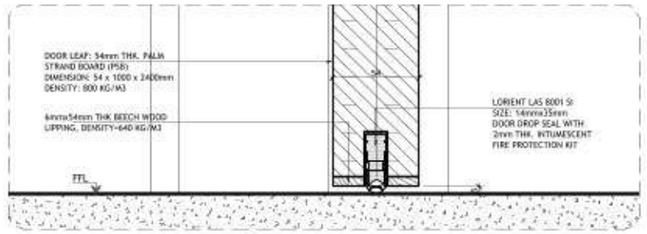

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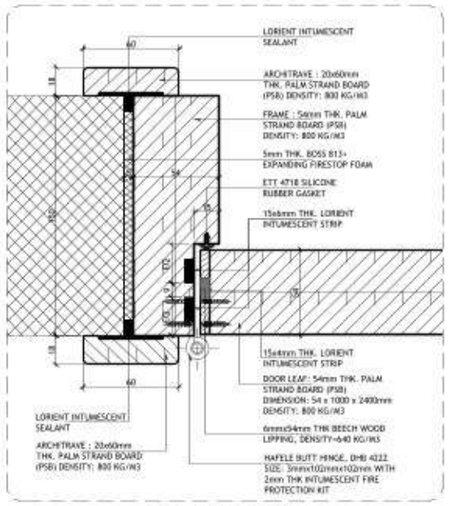

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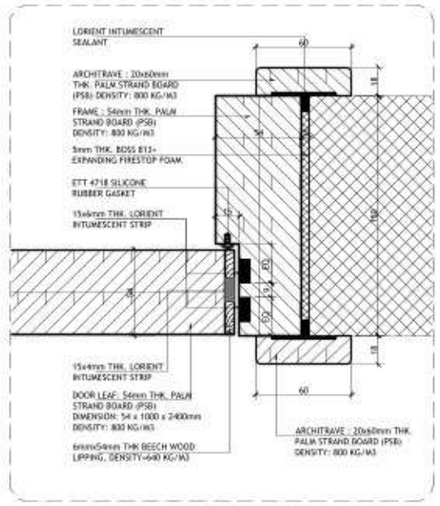

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NOTES:-

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

Rev.	Date	Description.	By

CLIENT

ABANOS

CONSULTANT

.

MAIN CONTRACTOR

.

PROJECT

CERTIFICATION/TEST
REPORT FOR EN & UL

SUB- CONTRACTOR

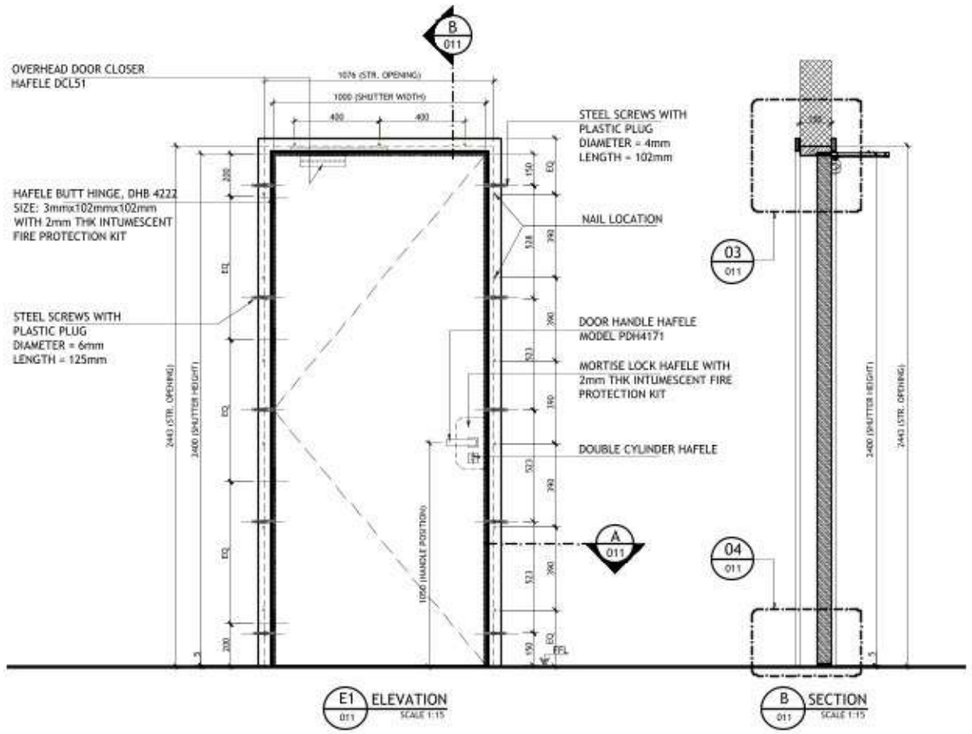
ABANOS
FURNITURE & DECORATION
INDUSTRY L.L.C
P.O. BOX 114480, DUBAI, TEL.:+971 4 8996111, FAX : +971 4 8859966
E-mail: mail@abanos.ae, Web: www.abanos.ae

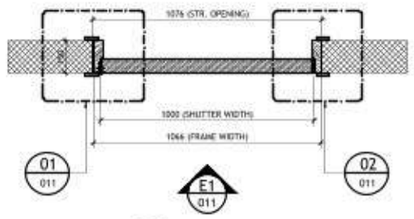
DRAWING TITLE

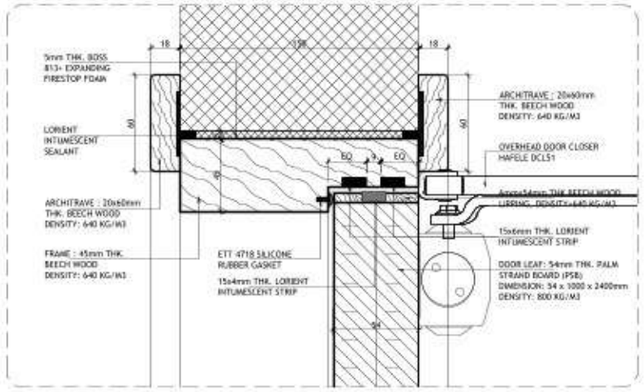
FIRE RATED DOOR DETAIL
SINGLE LEAF DOOR WITH PSB FRAME
(EN - 60 Min. FIRE RATED DOOR)

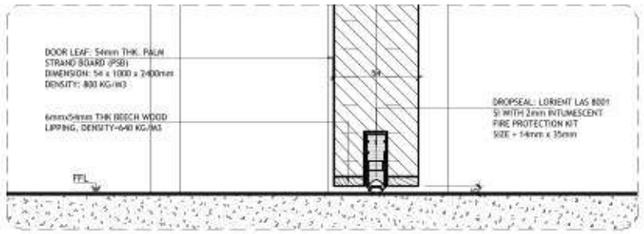
DRAWN BY	CHK.	APPD.	DATE
SJ	.	.	05.05.2023

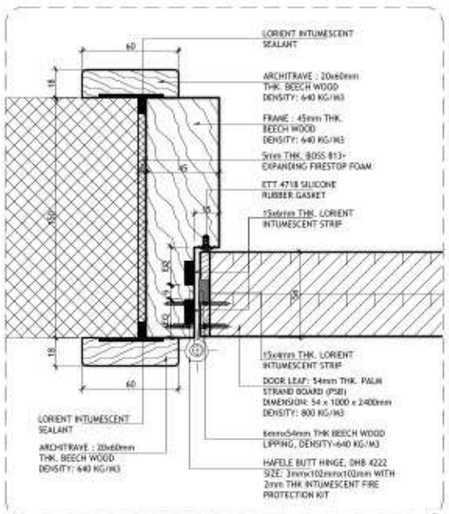
SCALE	DRAWING NO.	REV.
1:15 @ A3	J2717/STD/FR-PSB/006	01

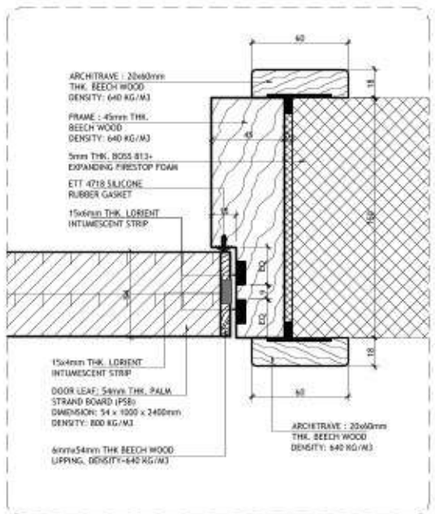












NOTES:-

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

Rev.	Date	Description.	By

CLIENT

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CONSULTANT

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DRAWING TITLE

FIRE RATED DOOR DETAIL
SINGLE LEAF DOOR WITH HARD WOOD FRAME
(EN - 60 Min. FIRE RATED DOOR)

DRAWN BY	CHK.	APPD.	DATE
SJ	.	.	08.06.2023

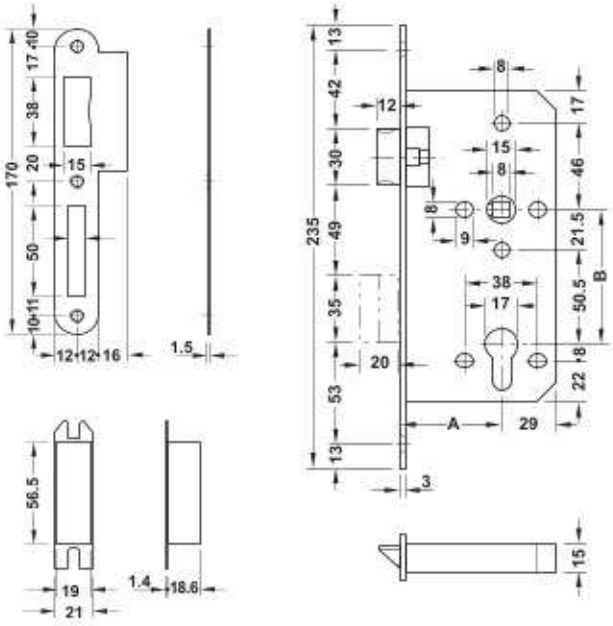
SCALE	DRAWING NO.	REV.
1:15 @ A3	J2717/STD/FR-PSB/011	01

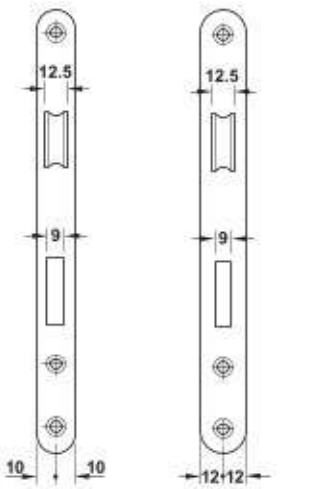
Mortice lock, profile cylinder

F

CAD

2





Forend width 20 mm for rebated doors

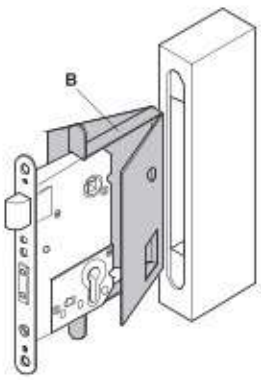
Forend width 24 mm for flush doors

> Area of application:	For rebated or flush doors
> Material:	Forend, latchbolt and deadbolt: Stainless steel, lock case: Steel, deadbolt pocket: Plastic
> Type of locking:	Prepared for profile cylinder
> Deadbolt:	2-turn
> Version:	With key action
> Forend:	Round or square
> Lever follower:	8 mm
> Distance B:	72 mm
> Mounting:	DIN left and DIN right, reversible
> Standard:	Certified in compliance with EN 12209:2003
> Class:	3 X 8 | 1 0 G | 3 B C | 2 0

Supplied with
1 mortice lock
1 flanged striking plate
2 deadbolt pockets

Forend width mm	Finish	Square	Round
Backset A 55 mm			
20	Matt brushed	911.02.143	911.02.151
	Brass coloured PVD coated	911.25.444	911.25.452
	Graphite black PVD coated	911.25.420	911.25.421
24	Matt brushed	911.02.145	911.02.153
	Brass coloured PVD coated	911.25.446	911.25.454
	Graphite black PVD coated	911.25.422	911.25.200
Backset A 60 mm			
24	Matt brushed	911.02.464	911.02.468
Backset A 65 mm			
24	Matt brushed	911.02.480	911.02.484

→ Intumescent fire protection kit for mortice locks



B = intumescent fire protection kit for mortice locks

Dim. (L x W) mm	Material thickness mm	Cat. No.
165 x 90	1	950.11.010
	2	950.11.011

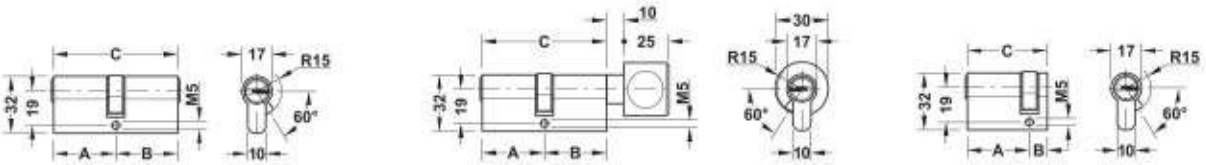
Packing: 1 set

23.04.2021
ID 2479

CAD

2

Profile Cylinder



Double cylinder | Thumbturn cylinder | Single cylinder

> Material:	Cylinder housing: Brass
> Finish:	Nickel plated
> Type of locking:	Keyed to differ
> Locking system:	With 5 pin tumblers

Note
No secured locking.

Supplied with
1 cylinder (double, single or thumbturn cylinder)
3 keys, nickel plated steel
1 fixing screw

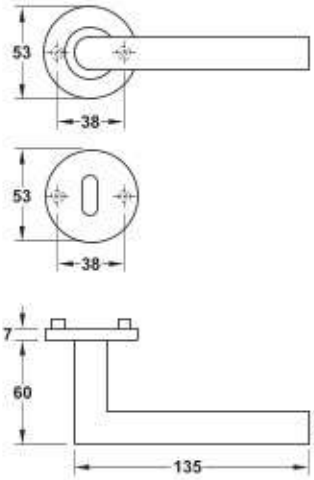
Dim. A mm	Dim. B mm	Dim. C mm	Cat. No.
Double cylinder			
31.5	31.5	63	916.59.007
31.5	35.5	67	916.59.008
35	35	70	916.96.066
40	40	80	916.96.027
Thumbturn cylinder			
31.5	31.5	63	916.59.407
31.5	35.5	67	916.59.408
35.5	31.5	67	916.59.410
Single cylinder			
31.5	10	41.5	916.59.202

Technical Information > Timber Species Database > Beech, European

Fagus sylvatica
Also known as: European Beech

Wood type	Hardwood
Environmental	Not listed in CITES. Believed available from well-managed sources. Check certification status with suppliers.
Distribution	Europe, especially central Europe and Britain.
The Tree	Beech has been called the mother of the forest, since without it in mixed broad-leaved forests, other hardwood timber trees would have greater difficulties for survival. The rain drip from beech destroys many soil-exhausting weeds, its shade prevents over-evaporation of moisture from the soil, and its heavy crop of leaves provides humus to the soil. In close forest, it can reach a height of 45m with a clear bole of 1 5m but on average this is usually about 9m with a diameter averaging 1.2m occasionally more.
The Timber	Normally, there is no clear distinction by colour between sapwood and heartwood, the wood being very pale brown when freshly cut, turning reddish-brown on exposure, and deep reddish-brown under the influence of steaming treatment commonly applied in parts of the Continent before shipment. Some logs show an irregular, dark reddish-coloured kern or heart, caused it is believed, by the effect of severe frosts, and occurring more frequently in Continental beech. The wood is typically straight grained, with a fine, even texture, but varying in density and hardness according to the locality of growth. Thus beech from central Europe, notably that from Yugoslavia (Slavonian), and that from Romania is milder and lighter in weight, about 672 kg/m³, than beech from Britain, Denmark and northern Europe, which weighs about 720 kg/m³ when dried.
Drying	Although it dries fairly rapidly and fairly well, beech is moderately refractory, tending to warp, twist, check and split, and shrink considerably. It therefore requires care both in air drying and kiln drying.
Strength	Green beech has general strength properties roughly equal to those of oak, but after drying, most values increase, and beech is stronger than oak in bending strength, stiffness and shear by some 20 per cent, and considerably stronger in resistance to impact loads.
Working Qualities	Good - * Red heart extremely difficult to work. Beech varies somewhat in its ease of working and machining according to growth characteristics and dried condition. Thus fairly tough material, or badly dried stock may tend to bind on the saw, or burn when cross-cut, or, if distorted due to drying provide difficulties in planing. On the whole, however it works fairly readily, and is capable of a good smooth surface. Beech turns well, takes glue readily, and takes stains and polish satisfactorily. It produces excellent veneer
Durability	Not durable
Treatability	Easy
Moisture Movement	Large
Density (mean, Kg/m³)	720 ( )
Texture	Fine
Availability	Readily available at timber merchant
Price	Low
Chemical Properties	Excellent bending properties
Use(s)	Joinery - Interior, Furniture, Flooring
Colour(s)	Pink/pale red, Reddish brown (after steaming), White/cream

Model PDH4171



> Material: Stainless steel, substructure: Steel
> Bearing: Lever handle pivot-fitted in rose, sprung
> Standard: Certified in compliance with EN 1906:2010
> Class: 4 7 – B 1 4 0 B

	Supplied with		Door thick-ness mm	Satin	Polished	Polished brass coloured, PVD coated
CB set	2 Lever handle aperture parts with handle roses 1 Spindle 8 x 100 mm 1 Pair of CB escutcheons 4 Threaded screws M4 x 60 mm, can be shortened		38–55	903.91.076	903.91.077	903.91.078
PC set	2 Lever handle aperture parts with handle roses 1 Spindle 8 x 100 mm 1 Pair of PC escutcheons 4 Threaded screws M4 x 60 mm, can be shortened	F	38–55	903.92.076	903.92.077	903.92.078
WC set	2 Lever handle aperture parts with handle roses 1 Spindle 8 x 100 mm 1 Pair of WC escutcheons with red/green indicator disc 1 Locking pin 8 x 75 mm 4 Threaded screws M4 x 60 mm, can be shortened		38–55	903.93.076	903.93.077	903.93.078

Individual components ►AH 1.68
Mounting accessories for other door thicknesses ►AH 1.69

Distributed By....

emirates technotrade L.L.C

sales@emiratestechnotrade.com,+971 55 672 7484

ETT: 4718 – Technical Data Sheet

SILICONE BIG HEXAGONAL SEALS

Material : Elastomer SILICONE Synthetic Rubber.

Function : For Door Sealing, excellent sealing against dust, water and winds, thermal Insulation, shock absorber, good aesthetic appearance. Silicone Rubber Vulcanizates process excellent working properties at high and low temperature.

GENERAL PHYSICAL PROPERTIES
(ASTM C 1115 Table 2, Type C)

PROPERTIES	SPECIFICATION	TEST METHOD
Hardness(Shore A)	70 ± 5	ASTM D 2240
Tensile strength (MPa.)	5.0	ASTM D 412
Elongation Break (%)	125(min)	ASTM D 412
Compression Set-22Hrs at 100 °C	15(%)Max	ASTM D 395
Heat Ageing 70Hours @ 150 °C		ASTM D 573
Change in Hardness (Shore A)	± 5	ASTM D2240
Change in Tensile Strength (%)	± 15	ASTM D412
Change in Elongation, (%)	± 30	ASTM D412
Ozone Resistance at 70 °C ,300 mPa for 100 Hrs	No Cracks	ASTM D 1149

Disclaimer:
This Technical Data Sheet is for reference purpose only and should not be considered as warranty certificate

RITVER
PAINTS & COATINGS
where paints come to life

WOOD FINISHES
DATA SHEET

WOOD GLUE

Product No. PW1612

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

USE

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

SPECIFICATIONS

Properties

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

SURFACE PREPARATION

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

APPLICATION METHODS

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

WOOD GLUE

Product No. **PW1612**

PRODUCT PREPARATION

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

Dilution

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

SUBSEQUENT TREATMENT

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

PACKING & STORING

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

SAFETY & FLAMMABLE

Do not expose product to direct sun light.

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

Date Revised: 01st Jan 2012

DesertBoard.
By Al Talah Board Manufacturing Co. LTD

WORLD'S FIRST WOODEN BOARD MADE FROM DATE PALM WASTE

ABOUT DESERTBOARD

ABOUT OUR LABS

Desert Board has effectively pledged its reputation as the market leader in the quality of Strand board manufacturing and product innovation. Our labs are equipped with State-of-the-art process control instrumentation, advanced automation, and quality control systems.

With constant strive for success, the Testing Laboratory works with our Research and Development laboratory endlessly to ensure the quality of our product is comparable to the best available in the market at all times.

With the efforts of our laboratories and our management's innovation, we have produced a board that complies with the European Standards EN30:2006 and certified by various local and global entities as a sustainable solution for a better future.

EMIRATES SAFETY LABORATORY LLC
Dubai - U.A.E.

ABOUT OUR PLANT

With special functions and advanced technologies, our plant can be classified is as state-of-the-art. Being the first plant in the world that can transform palm waste into functional palm strand boards, we can ensure that we can lead the market and the industry with confidence.

Our plant is certified by ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018, and our processes are certified by the Forest Stewardship Council, Emirates Green Building Council, and a United Nations signatory of the Global Compact initiative and Climate Neutral Now.

Our plant is equipped with high-efficiency wood dust filtration systems, which are installed for the main manufacturing process as well as at various transfer points to avoid dust emissions into the atmosphere. The plant is controlled by a Central Control Room with built-in software and the latest technologies to recycle up to 80% of wood dust generated during the board manufacturing process for energy production.

DesertBoard.
By Al Talah Board Manufacturing Co. LTD

WORLD'S FIRST WOODEN BOARD MADE FROM DATE PALM WASTE

PALM STRAND BOARD

PSB

Palm Strand Board

DESCRIPTION

PSB is an Environmentally-friendly wooden board made from palm waste materials, making it a 100% sustainable board suitable for a wide range of applications. PSB Design is made from PSB Structural boards sandwiched between high destiny fiberboards that provide a smooth finish and increase the board's durability.

These boards were developed to meet the exacting Al Sa'fat Green Building System and Japanese Industrial Standards (JIS) for formaldehyde emissions. This superior grade F also known as Super E0 (SE0) with Formaldehyde Emissions not exceeding 0.05 mg/kg, has formaldehyde levels similar to natural wood, giving you assurance in the best controls available.

FEATURES

- 100% Sustainable
- Environmentally Friendly
- Zero Emissions
- High-Strength & Durable
- Load-Bearing Capabilities
- Superior Screw Withdrawal
- Sutiable in Humid Areas
- Variation of Finishes

APPLICATIONS

PSB is a wood-based panel suitable for furnitures, kitchen cabinets and wooden structures such as wall decors, booths, floors and panelling and many more.

- Furnitures
- Kitchen Cabinets
- Booths & Stands
- Panelling

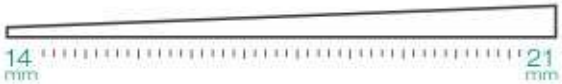
PSB

Palm Strand Board

MEASURMENTS

PSB comes in various sizes and thinkness, the standard size for the board is:

2438 mm x 1219 mm (8 ft. x 4 ft.)



TESTS

PSB has been tested by Internal and Third-Part Labratories to ensure the quality of the boards.

PROPERTY	TEST	UNIT	VALUE
Foremaldehyde release	EN 717-1	mg/kg	< 0.05
Moisture Content	EN 322	%	3.16
Density	EN 323	kg/m³	816.4
Modulus Elasticity	EN 310	N/mm²	3592.50
Tensile Strength Prependicular to the plane	EN 319	N/mm²	0.96
Bending Strength	EN 310	N/mm²	19.55
Thickness Swelling 2 hours	EN 317	%	3.2
Thickness Swelling 24 hours	EN 317	%	7.78
Screw Withdrawal	EN 320	N	1543
Tolerance on Nominal Dimensions (Thickness)	EN 324	mm	± 0.5
Tolerance on Nominal Dimensions (Length-Width)	EN 324	mm/m	± 0.2
Tolerance on Nominal Dimensions (Squareness)	EN 324	mm/m	± 0.2
Tolerance on Nominal Dimensions (Edge Straightness)	EN 324	mm/m	± 0.2

CERTIFICATIONS

PSB Design has been tested by Dubai Central Laboratory and other 3rd part laboratories. It has been certified by Dubai Municipality as per Al Sa'fat Green Building System and is in compliance with the European Standards EN300:2006, and BS EN 717-1:2004.

Dubai - U.A.E. EMIRATES SAFETY LABORATORY LLC

CE EN 300:2006 DesertBoard

CE BS EN 717-1:2004 DesertBoard

DesertBoard

INTUMESCENT SEALANT

Lorient Intumescent Sealant is a versatile seal solution to fill gaps and movement joints; and for use where rigid seals are impractical.

When exposed to fire, it expands in volume to fill all cavities; providing a necessary hot smoke seal.

It's suitable for sealing gaps between fire resistant walls and floors, between conduits and walls/floors and between fire resistant walls and structural supports. Lorient Intumescent sealant is also recommended for sealing the perimeter of fire and smoke resistant damper/air transfer grilles.

Intumescent Sealant

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20: 1987.

Performance
- Provides effective acoustic containment.
- Can provide up to 240 minutes fire resistance.

Material
- Polymer content increased for improved flexibility - tolerates differential movement in everyday servic

Finish
- White as standard. Other colours available to special order

Applications
- Specially formulated for adhesion to a wide range of materials including: wood; metal; plastic; concrete; masonry and plasterboard materials.
- A linear gap seal for gaps in wall and floor constructions and as a linear joint seal where wall and floor constructions abut.
- A penetration seal around metallic pipes and electrical cables to reinstate the fire resistance performance of wall and floor constructions.
- Sealing the perimeter around fire and smoke resistant damper/air transfer grilles in doors, walls, ducts floors and ceilings.

Availability
- Supplied in individual 310ml cartridges or in boxes of 25 units.
- Also available in 600ml foils.

Storage + cleaning
- Store in cool dry conditions between 5°C - 30°C. Do not allow to freeze.
- Water based - tools can be cleaned using soap and water.

T: +44 (0)1626 834252
E: mktg@lorientuk.com

www.lorientgroup.com

LORIENT

LAS8001 si

HEAVY DUTY 39dB

A slimline, mortised automatic drop seal. It features a high efficiency mechanism, which lifts the seal clear of the floor as soon as the door is opened by a few millimetres; resulting in lower door operating forces. Requires no power connection. Self-levelling on uneven floors; seal height can be adjusted independently of fixing screws.

ID No. 518

LAS8001 si

LAS8001 si (shown with LAS4001)

SYSTEM SPECIFICATIONS

Test evidence

- Acoustic: BS EN ISO 10140-2: 2010 (up to Rw 39dB).
- Smoke: BS EN 1634-3: 2004 & BS 476-31.1: 1983.
- Fire: BS 476: Pt.20/22: 1987 & BS EN 1634-1: 2014.
- Durability: 1 million cycles.

Performance

- Meets smoke requirement: BS 9999: 2017.
- Protects against sound, smoke, fire, draught, light and insects.
- Suitable for wheeled traffic.

Location

- Single swing, single and double leaf doors. For use on both right and left hinged doors.

Use with

- Any perimeter seal. Any threshold plate.

Min/max gap size

- 1mm/13mm.

Seal material

- Grey or black silicone rubber.

Standard lengths

- 335mm, 435mm, 535mm, 635mm, 735mm, 835mm, 935mm, 1035mm, 1135mm and 1235mm. Sizes above 1235mm are available on request.
- Note: Each length can be cut back to the next size down. The 335mm can be cut back to 255mm.

Fixing

- Fixing screws are supplied. This seal is mortised. Pre-drilled radiused end plates are supplied which also secure the product in place. (Square end plates available on request).

Adjustment

- Self-levelling on uneven surfaces.

Finishes

- Silver anodised aluminium with silver end plates, and grey silicone rubber gasket.
- Silver anodised aluminium with bronze end plates, and black silicone rubber gasket.

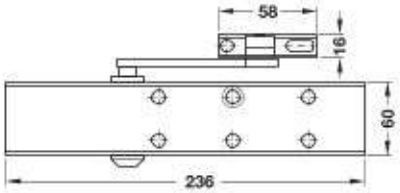
Accreditations

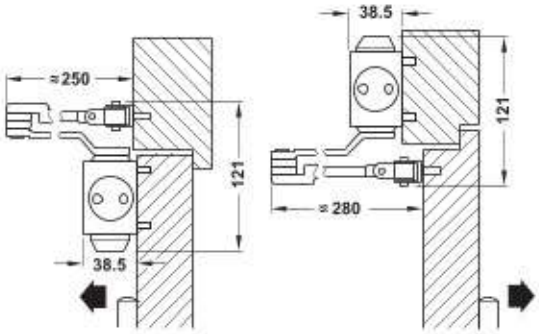
(R27972) (CF5179)

T: +9714 883 7206
E: sales@lorientgulf.ae

LORIENT

DCL 51
EN 2–5





Standard installation
(door leaf installation)
on pull side

Overhead installation
(transom fixing)
on push side

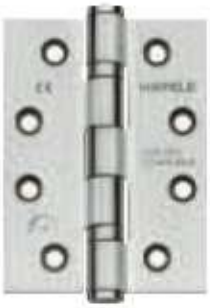
Fire resistance and smoke control

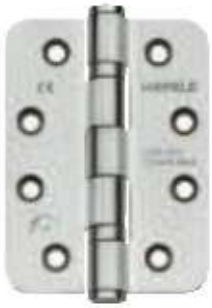
F Tested for fire resistant and smoke control doors.

> Version:	With standard arm or hold-open arm (optional)
> Installation:	Standard installation on pull side and overhead installation on push side
> Adjustment facility:	Closing speed, backcheck and latching action adjustable
> Closing force:	2–5
> Door width:	≤1,250 mm
> Opening angle:	≤180°
> Hold-open angle:	≤150°
> Mounting:	For DIN left and DIN right hand use
> Standard:	Certified in compliance with EN 1154:1996/A1:2002
> Class:	4 | 8 | 2–5 | 0/1 | 1 | 3

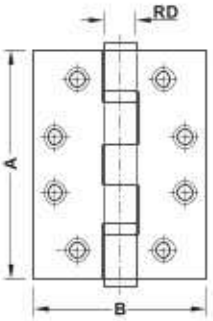
		Silver colour lacquered	Satin stainless steel	Brass Polished	Matt black
DCL 51 Set with standard arm					
1 DCL 51 with standard arm	F	931.84.829	931.84.820	931.84.828	931.84.823
DCL 51 Set with hold-open arm					
1 DCL 51 with hold-open arm	–	931.84.669	931.84.660	931.84.668	931.84.663

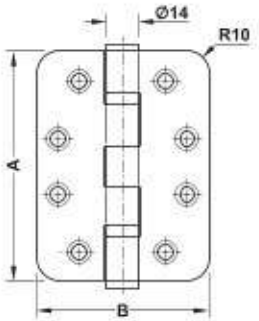
Butt hinge
For flush doors



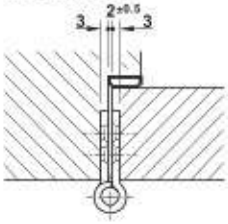


- > Area of application: For wooden frames, for flush interior doors
- > Material: Stainless steel
- > Door weight: 120 kg
- > Bearing: With fixed pin, knuckle with two ball bearings
- > Mounting: For DIN left and DIN right hand use
- > Standard: Certified in compliance with DIN 1935:2002
- > Class: 4 7 6 | 1 1 4 | 0 13





Installation



RD = knuckle diameter

Knuckle Ø mm	Flange thickness mm	Dim. A	Dim. B	Model	Material	Satin	Polished	Burnished	Polished brass coloured, PVD coated	Matt black, PVD coated
Flange shape square										
12	2.5	4"/ 102 mm	3"/ 76 mm	DHB 2122	Stainless steel, quality 201	926.98.010	926.98.011	926.98.019	926.98.018	926.98.013
				DHB 2222	Stainless steel, quality 304	926.98.020	926.98.021	926.98.029	926.98.028	926.98.023
14	3	4"/ 102 mm	3"/ 76 mm	DHB 3122	Stainless steel, quality 201	926.98.030	926.98.031	926.98.039	926.98.038	926.98.033
				DHB 3222	Stainless steel, quality 304	926.98.040	926.98.041	926.98.049	926.98.048	926.98.043
				DHB 3322	Stainless steel, quality 316	926.98.060	926.98.061	926.98.069	926.98.068	926.98.063
			3.5"/ 89 mm	DHB 5222	Stainless steel, quality 304	926.98.100	926.98.101	926.98.109	926.98.108	926.98.103
			4"/ 102 mm	DHB 4122	Stainless steel, quality 201	926.98.070	926.98.071	926.98.079	926.98.078	926.98.073
				DHB 4222	Stainless steel, quality 304	926.98.090	926.98.091	926.98.099	926.98.098	926.98.093
		4.5"/ 114 mm	4"/ 102 mm	DHB 6222	Stainless steel, quality 304	926.98.110	926.98.111	926.98.119	926.98.118	926.98.113
		5"/ 127 mm	3.5"/ 89 mm	DHB 8222	Stainless steel, quality 304	926.98.130	926.98.131	926.98.139	926.98.138	926.98.133
			4"/ 102 mm	DHB 9222	Stainless steel, quality 304	926.98.140	926.98.141	926.98.149	926.98.148	926.98.143
15	3.5	4.5"/ 114 mm	4"/ 102 mm	DHB 7222	Stainless steel, quality 304	926.98.120	926.98.121	926.98.129	926.98.128	926.98.123
Flange shape rounded										
14	3	4"/ 102 mm	3"/ 76 mm	DHB 3221	Stainless steel, quality 304	926.98.050	926.98.051	926.98.059	926.98.058	926.98.053
			4"/ 102 mm	DHB 4121	Stainless steel, quality 201	926.98.080	926.98.081	926.98.089	926.98.088	926.98.083

Packing: 1 or 10 pieces

Order reference
Fixing screws for wooden frames and doors supplied.
Please order fixing screws for metal frames and doors 020.00.136 separately.

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.

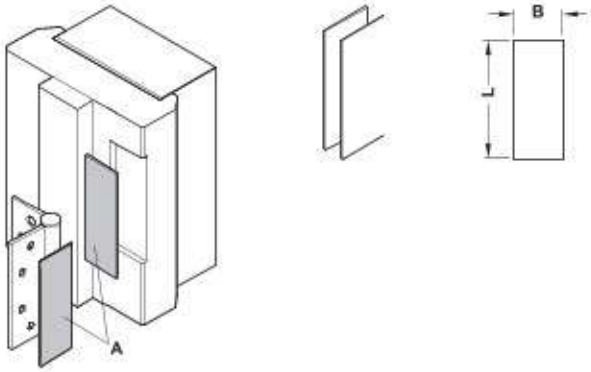
Packaging

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.

Intumescent fire protection kit for door hinges



A = intumescent fire protection kit for door hinges

> Area of application: The material expands substantially when exposed to hot temperatures for protection of door hinges, provides fire resistance of up to 60 minutes
> Version: Shaped pads of intumescent material, cut to size
> Material thickness: 2 mm
> Replaces intumescent wood putty or paste

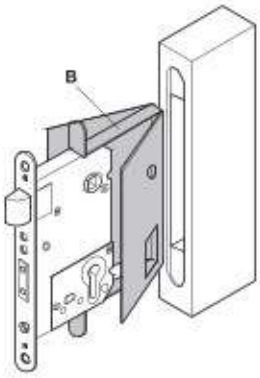
Note
The installation must comply with specifications and testing must have been carried out in accordance with EN 1634 in order to guarantee the fire resisting properties of the door. The applicable national and international guidelines, standards, approvals and other relevant regulations with regard to smoke control and fire resistance also have to be taken into consideration.

Dim. (L x W) mm	Cat. No.
76 x 31	950.11.085
102 x 30	950.11.087
102 x 36	950.11.097
102 x 42	950.11.107
126 x 37	950.11.119
114 x 43	950.11.117
114 x 48	950.11.118

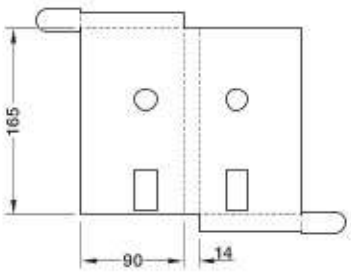
Packing: 1 set

Door Hinges ►See product group 04

Intumescent fire protection kit for mortice locks



B = intumescent fire protection kit for mortice locks



> Area of application: The material expands substantially when exposed to hot temperatures for protection of mortice locks, provides fire resistance of up to 30 minutes or 60 minutes (material thickness 2 mm), for standard DIN mortice locks, for backset 55 mm, for distance 72 mm
> Version: Shaped pads of intumescent material, self-adhesive, cut to size
> Replaces intumescent wood putty or paste

Note
The installation must comply with specifications and testing must have been carried out in accordance with EN 1634 in order to guarantee the fire resisting properties of the door. The applicable national and international guidelines, standards, approvals and other relevant regulations with regard to smoke control and fire resistance also have to be taken into consideration.

Dim. (L x W) mm	Material thickness mm	Cat. No.
165 x 90	1	950.11.010
165 x 90	2	950.11.011

Packing: 1 set

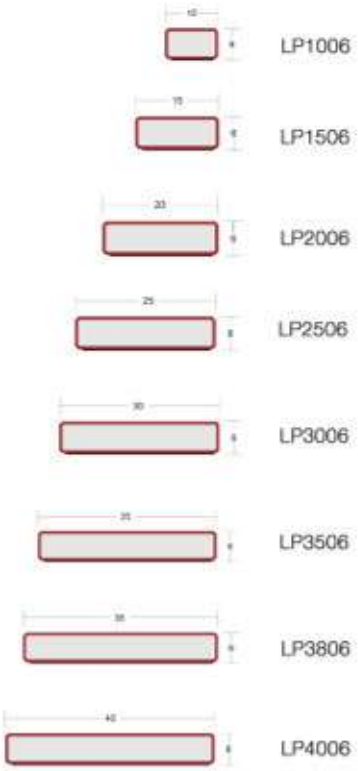
Door Locks ►See product group 02

LORIENT

Fire Seal

Intumescent fire seal for use where no smoke sealing is required.

- **Key benefits**
  The sodium silicate intumescent material is activated at temperatures of between 100 – 150˚C, forming a rigid foam with a high level of thermal insulation; it expands to 5 – 10 times its original size.
- **Location**
  Fitted into the head and jams of the door frame or alternatively into the top and sides of the door leaf itself.
- **Use with**
  Any smoke seal.
- **Min/max gap size**
  3mm / 4mm.
- **Lengths**
  1m & 2.1m. Other lengths are available to special order.
- **Fixing**
  Our intumescent fire seals have a self-adhesive backing. The adhesive used has been specially selected to provide excellent adhesion on a wide range of materials, including MDF on which it is usually difficult to obtain an effective bond.
- **Finishes**
  Our fire seals are available in a range of standard and special order colours.



certifire
CF341

EMIRATES SAFETY LABORATORY LLC
Dubai - U.A.E.

Lorient Gulf Building Materials Trading LLC
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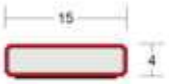
Tel: + 9714 883 7206 Fax: +9714 883 7207 Email: sales@lorientgulf.ae Website: www.lorientgulf.ae

FIRE SEALS

LP1004, LP1504, LP2004, LP2504

Our intumescent fire door seals offer fire protection where no smoke sealing is required. Combine a fire seal with a Batwing® seal for acoustic + smoke containment. Available in a choice of sizes to cover 30 + 60 minute applications, the fire seal also includes integral antimicrobial protection.

LP1004 Fire seal



LP1504 Fire seal

LP2004 Fire seal

LP2504 Fire seal

Fire seal

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS EN 1634-1: 2008.
- Fire: BS 476-22: 1987.

Performance
- Protects against fire.
- Integral antimicrobial protection.

Size
- 10 x 4mm.
- 15 x 4mm.
- 20 x 4mm.
- 25 x 4mm.
- Other sizes available, please ask for details.

Location
- Single and double leaf doors.

Use with
- Smoke seals and any architectural seals.

Min/max gap size
- 3mm/4mm.

Seal material
- PVC encased sodium silicate.

Standard lengths
- 1m and 2.1m.
- Other lengths to special order.

Fixing
- Heavy duty self-adhesive backing tape.

Finishes
- Available in a range of standard colours, plus woodgrain and metallic finishes for superior aesthetics.

Accreditations

certifire
(CF330 & CF341)

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LORIENT