ESL

مختبر الإمارات للسلامة
EMIRATES SAFETY LABORATORY

TEST REPORT

No.0428-24-TR-01

Fire Resistance Test for **"Latched Palm strand board (PSB) Fire Rated Single door"** as per Technical Documentation No. ABS00036-STD-FR-PSB-116 No. ABS00036-STD-FR-PSB-123.

according to:

- UL10-C:2016(R2021)

Date of issue: July 19 2024

ilac-MRA IAS ACCREDITED Testing Laboratory TL-1038

1 EXCLUSIVE SUMMARY

Test method:	UL10-C:2016(R2021) – Positive Pressure Fire Tests of Door Assemblies
Name and address of the testing laboratory:	Emirates Safety Laboratory Al Warsan III, Dubai United Arab Emirates
Date of specimen(s) delivery:	Test element with the technical documentation was delivered by the manufacturer to the laboratory on 20th of June 2024
Date of specimen(s) installation:	24th June 2024
Date of testing:	27th June 2024
Name and address of the test sponsor:	Abanos Furniture & Decoration Industry LLC P.O. Box 114480 Dubai Investment Park 1 Dubai United Arab Emirates
Name and address of the manufacturer/supplier:	Door and Frame Assembly – Abanos Furniture & Decoration Industry LLC P.O. Box 114480 Dubai Investment Park 1 Dubai United Arab Emirates 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(s):	Latched Palm strand board (PSB) Fire Rated Single doors
Identification of the test specimen(s):	Two wooden single leaf doors were installed in a high density rigid supporting construction with butt hinges and locks (with hinges on the exposed side, opening towards the furnace.)
ESL Identification number:	0428-24-03 (Door 1) – PSB 116 1-layer door leaf core, opened toward the furnace 0428-24-04 (Door 2) – PSB 123 2-layer door leaf core, opened toward the furnace
Description of sampling procedure including date if applicable:	Test specimens were selected, marked, and signed by Mr. Alireza Tabatabaei from Intertek Middle East (Certification Body) on 14 06 2024 as shown below, and delivered to ESL by the test sponsor. The results apply to the specimens as received. The Laboratory members were 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 UL 10C. The furnace thermocouples were placed at 6 in. (152 mm) from the surface of the test element. Heating conditions are shown in Graphs 1 and 2.
Furnace pressure:	The pressure in the furnace has been established at the top of the assembly and 40in. above the sill, in accordance with paragraph 7.2 of UL 10C. The pressure level during the test is shown in Graph 3.
Ambient temperature:	Measured during the test at 2000mm away from the specimen's unexposed face, at the test's commencement was 32.9°C. The ambient temperature during the test is shown in Graph 6.

3 DESCRIPTIONS OF THE TEST SPECIMEN

Constructional details of the single leaf doorsets of dimensions in the below table are presented in the technical documentation enclosed to this report.

Table 1

Measurement	Nominal (mm)		Measured by ESL (mm)	
	Door 1	Door 2	Door 1	Door 2
Width of the door leaf	1000	1000	1001	1000
Height of the door leaf	2440	2440	2442	2442
Door leaf thickness	44	44	44.6	43.7
Door frame thickness (Jamb)	120	120	120	120
Door frame (w x h)	1064 x 2477	1064 x 2477	1066x2480	1064 x 2475
Door frame clear opening (w x h)	-	-	980 x 2435	980 x 2435

3.1 Description of the doorset

3.1.1 Door Frame Construction:

3.1.1.1 Door 1:

The door frame, of 120x44mm cross-section, was made of Desertboard Palm strand board manufactured by Al Talah Board, with a density of 650 kg/m^3.The door stop of 72x15mm of the same material and density was created within the door frame cross-section (see Figure 1).

The architrave consists of 18x60mm and 18x40mm thick Desertboard PSB with a density of 880 kg/m^3, was fixed on the exposed and unexposed sides, respectively.

3.1.1.2 Door 2:

The door frame, measuring 120x44 mm, was made of Desertboard Palm strand board (PSB) produced by Al Talah Board, with a density of 650 kg/m^3. The door stop of 72x15mm of the same material and density was created within the door frame cross-section (see Figure 1).
The architrave consists of 18x60mm and 18x40mm thick Desertboard PSB with a density of 880 kg/m^3, was fixed on the exposed and unexposed sides, respectively.

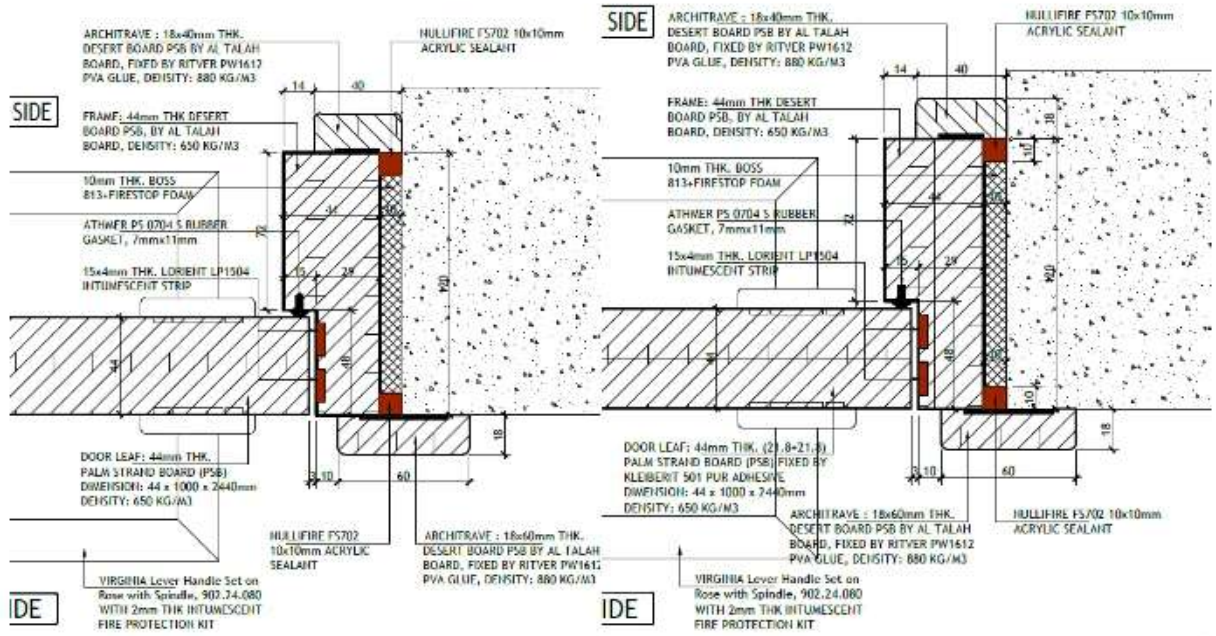


Figure 1. Door frame profile and door leaf core construction with sizes for Door 1 and 2, respectively.

3.1.2 Door Leaf Construction:

3.1.2.1 Door 1:

The 44mm thick door leaf of dimensions 2442x1000mm consisted of Desertboard PSB with a density of 650 kg/m^3.

3.1.2.2 Door 2:

The door dimensions were 2442x1000x44mm and it consisted of two (2) layers of 21.8mm thick Desertboard PSB with a density of 650 kg/m3 which were joined with the use of Kleiberit 501 PUR Glue produced by Kleiberit.

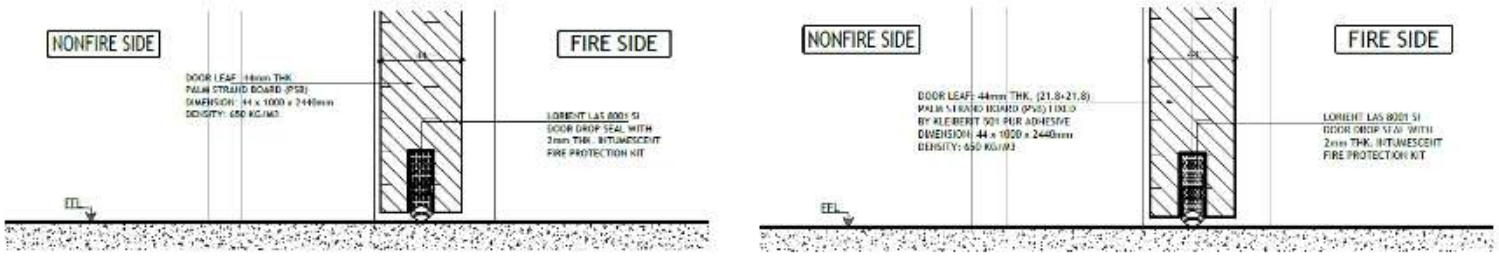


Figure 2. Bottom edge detail for door 1 and door 2, respectively Doorset gaskets:

Both of the doorsets have the same gaskets.

- 2 pcs of 15x4mm PVC encapsulated fire seal (LP1504), produced by Lorient – see figure 1 and photo 1– door frame rebates.
- 1 pc of drop seal (LAS 8001 SI) with 2mm intumescent fire protection kit, produced by Lorient – see figure 2 and photo 2 – bottom of the door leaf.
- 1 pc of 11x7mm Rubber gasket (PS-0704-S), produced by Athmer – see figure 1 and photo 1 – door frame rebate.

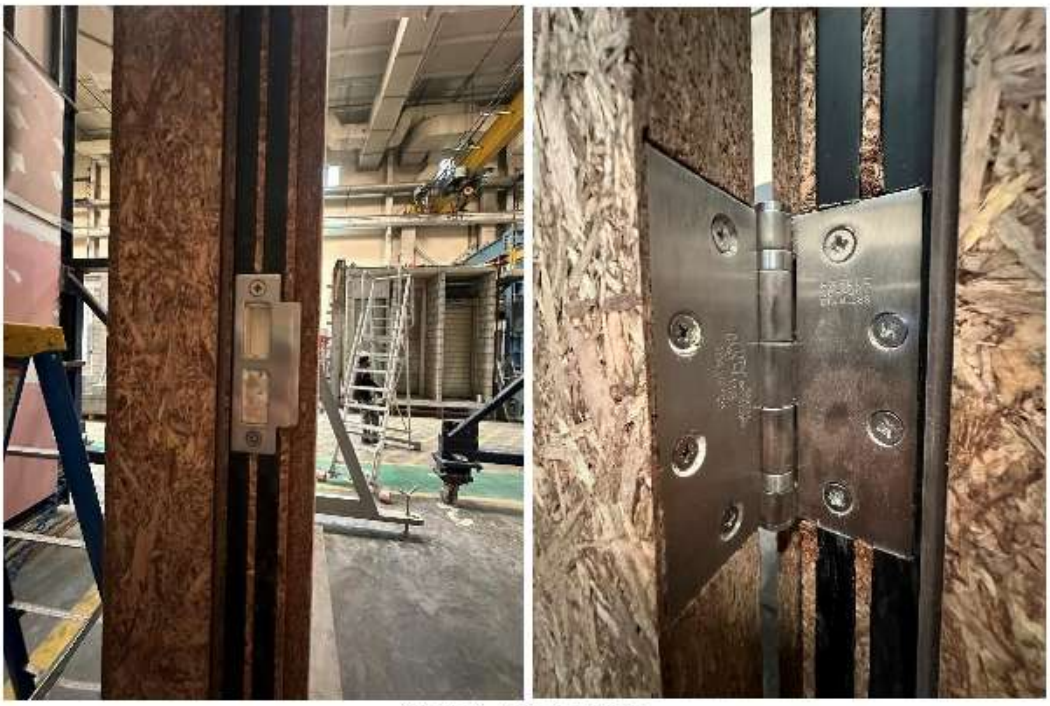


Photo 1. Frame rebate

Photo 2. Drop seal

3.1.3 Door Hardware: Door 1 & Door 2

Table 2

Lock		
	Door 1	Door 2
Manufacturer	HAFELE	HAFELE
Description	LMD14 MORTISE LOCK	LMD14 MORTISE LOCK
Length of latch throw	19.18 mm (measured by ESL)	18.2 mm (Measured by ESL)
Reference:	LMD series – 911.82.167	LMD series – 911.82.167
Quantity	1 pc of the lock set	1 pc of the lock set
Fixing	the lock was fixed at 1028 mm from the bottom of the door leaf to the center of the lock case. (measured by ESL)	the lock was fixed at 1026 mm from the bottom of the door leaf to the center of the lock case. (measured by ESL)
Lock case protection	1mm thick fire protection pad	

Table 3

Handle		
	Door 1	Door 2
Manufacturer	HAFELE	HAFELE
Description	VIRGINIA Lever Handle Set on Rose with Spindle	VIRGINIA Lever Handle Set on Rose with Spindle
Reference:	902.23.080	902.23.080
Quantity	1set for the lock set	1set for the lock set
Fixing	the handle was fixed at 1045 mm from the bottom of the door leaf. (measured by ESL)	the handle was fixed at 1045 mm from the bottom of the door leaf. (measured by ESL)
Lock case protection	**2mm thick intumescent fire protection kit**	

Table 4

Cylinder		
	Door 1	Door 2
Manufacturer	HAFELE	HAFELE
Description	Mortise Cylinder	Mortise Cylinder
Reference:	LX220 Series (916.61.800)	LX220 Series (916.61.800)
Quantity	1 pc	1 pc
Fixing	the cylinder was fixed at 1145 mm from the bottom of the door leaf. (measured by ESL)	the cylinder was fixed at 1145 mm from the bottom of the door leaf. (measured by ESL)

Table 5.

Hinges		
	Door 1	Door 2
Manufacturer	HAFELE	HAFELE
Type	144x102x3.4mm Ball Bearing hinge	114x102x3.4mm Ball Bearing hinge
Reference	HB125 (926.43.020)	HB125 (926.43.020)
Quantity	4 pcs in total	4 pcs in total
Fixing	Hinges were fixed to the door leaf using 4 nos. of ABC screws with plug at 200 mm, 885 mm, 1560 mm and 2240 mm from the bottom of the door leaf, (measured by ESL).	Hinges were fixed to the door leaf using 4 nos. of ABC screws with plug at 200 mm, 880 mm, 1560 mm and 2240 mm from the bottom of the door leaf, (measured by ESL).
Protection	2mm thick intumescent fire protection kit	

Table 6.

Door closer		
	Door 1	Door 2
Manufacturer	HAFELE	GEZE
Type	Surface Door Closer	Concealed Door Closer,
Reference	CSD92 (931.67.039)	Geze boxer size 2-4 (931.14.299)
Quantity	1	1
Fixing	Fixed on the exposed side of the door leaf (hinge side)	Installed in a cut-out made in the door.
Protection	Not fitted	2mm thick fire protection kit

Table 7

Drop Seal		
	Door 1	Door 2
Manufacturer	Lorient	Lorient
Description	Slimline, mortised automatic drop seal.	Slimline, mortised automatic drop seal.
Reference:	LAS8001 si	LAS8001 si
Quantity	1 pc	1 pc
Fixing	Fixed at the bottom of the door leaf.	Fixed at the bottom of the door leaf.
Protection	2 mm drop seal protection kit	2 mm drop seal protection kit

3.2 Installation

The door frame was fixed to a rigid supporting construction using 10 nos. of ø8x100mm ABC screws and plastic wall plug (5 nos. on each jamb, positioned 150mm from the top and bottom of the door frame, spaced at 537mm center to center, as illustrated in Figures 3 & 4). The 10mm gap on the perimeter of the door frame was filled with 813+ fire retardant foam from Boss products.

The architrave was fixed onto the frame on both sides, using adhesive (Ritver PW1612) produced by RAR Paints and nails of ø1.5x34mm on each jamb, spaced 390 mm on vertical edges and 400 mm on the top edge.

The doorset was flushed to the exposed side of the test construction, and the door leaf was opening into the furnace. A lining of concrete blocks of 150mm thick constituted a floor simulation projected 150mm from the door leaf on the exposed side, as shown in Photo 1.

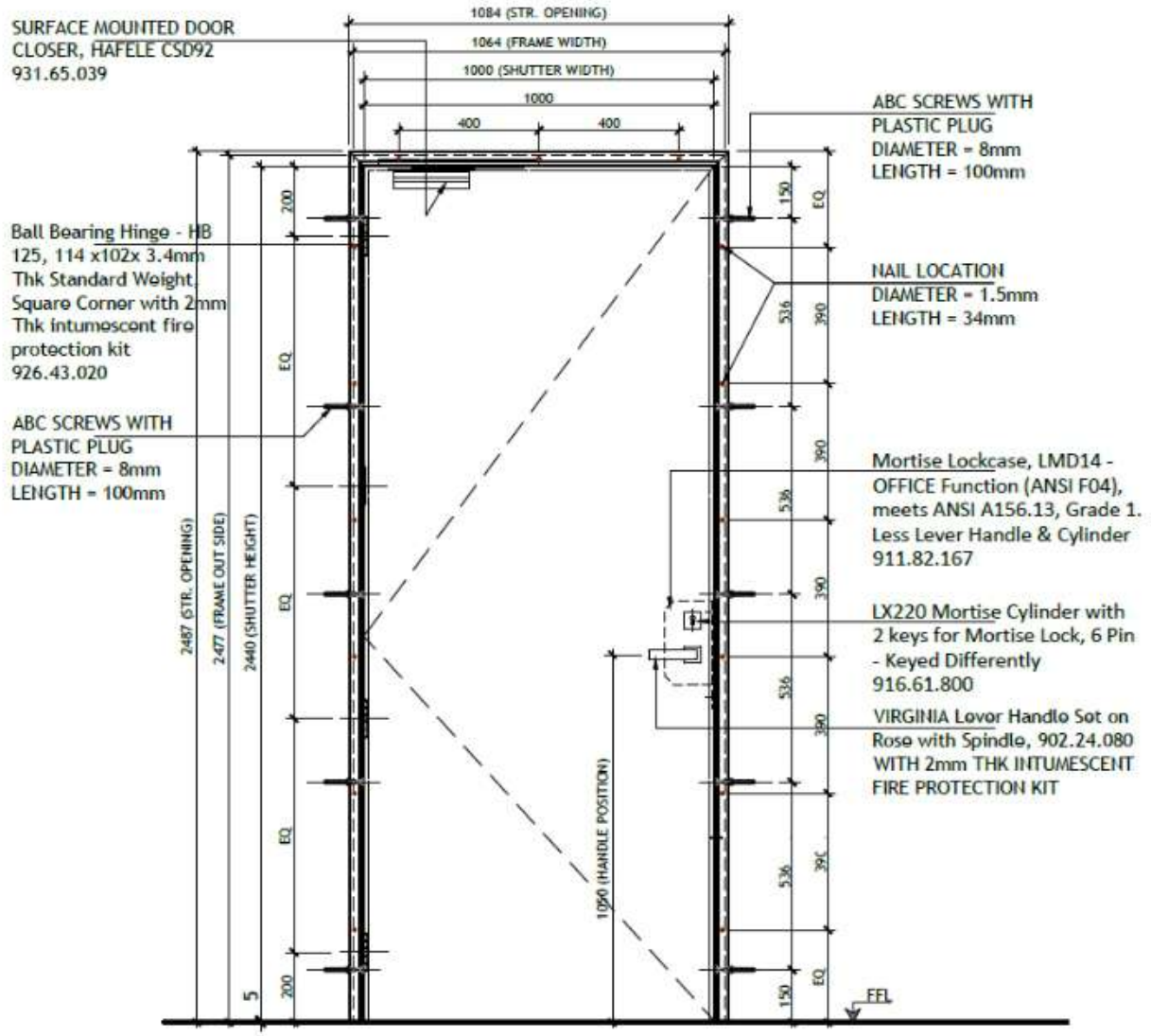


Figure 3. Unexposed side of the door leaf for door 1.

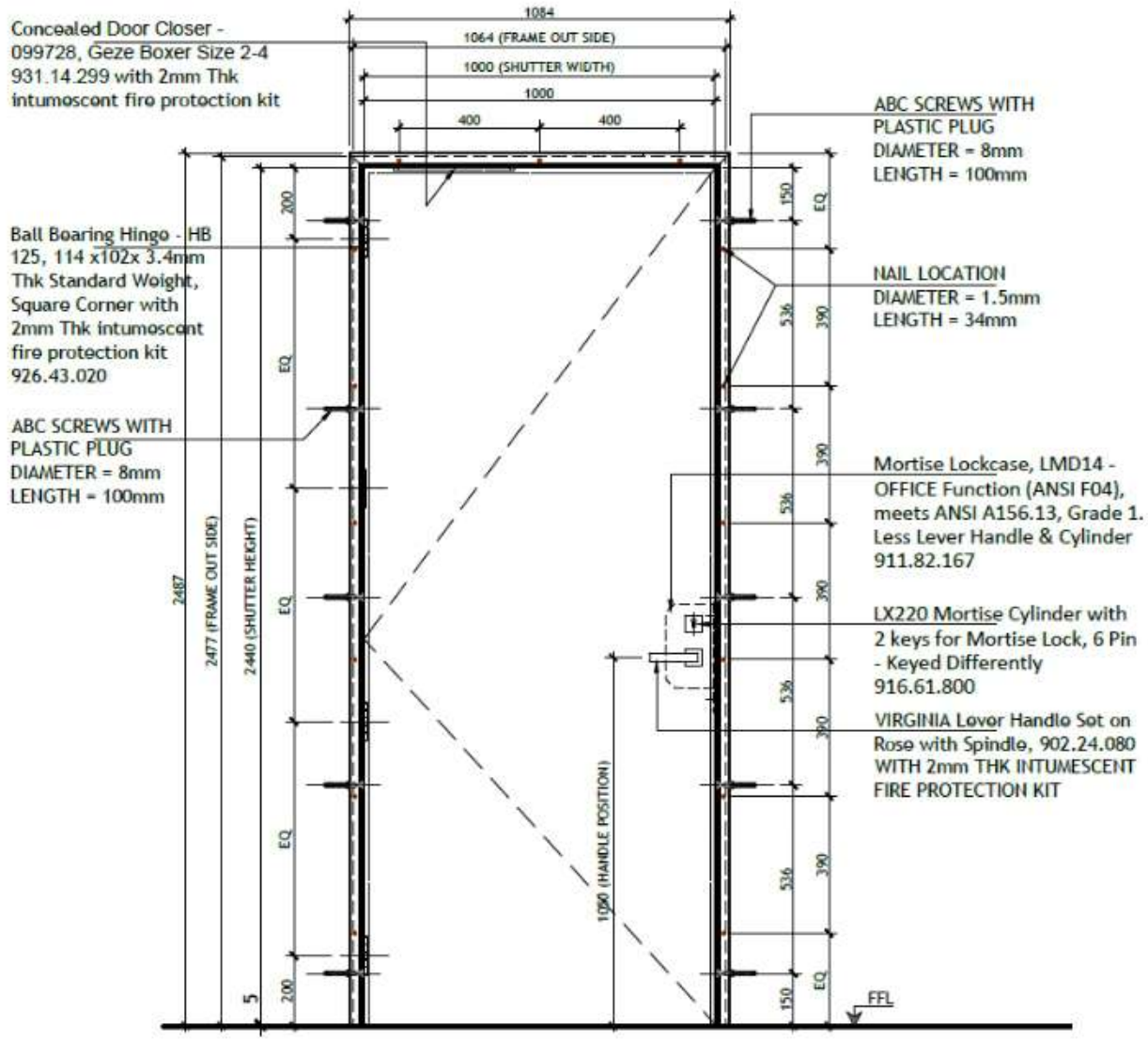


Figure 4. Unexposed side of the door leaf for door 2.

Photo 3. Floor simulation on the unexposed side

3.3 Description of the supporting construction

The specimen was installed within a high-density rigid supporting construction made of 150mm thick solid concrete masonry blocks and two structural openings of size 1084x2487mm (w x h). The supporting construction filled the test frame of dimensions 4240x4240mm, made of a steel H-profile.

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 manufacturer installed the door set on the 24th-25th of June, 2024 in the previously mentioned conditioned supporting construction. The test specimen was conditioned for 1 days afterward under the following conditions:

- Average humidity: min RH (%): 45.8
- Average temperature: temp. (°C): 33.9

4.2 Gaps measurements

Prior to the fire endurance test, gaps between the stationary and movable parts of the specimen were measured as per section 9.3 of UL 10C:2021. Measurements were taken on both the exposed and unexposed sides. The provided table references the measurements, and the figure illustrates the details.

All measurements are in mm, as viewed from the exposed face of the specimen.

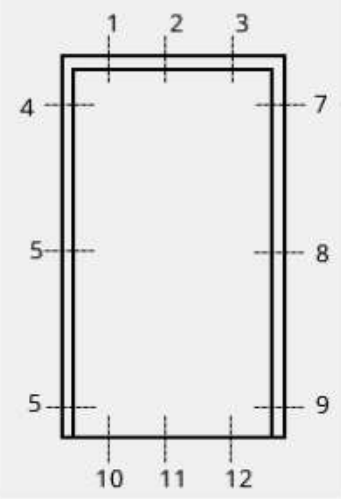


Figure 5. Measurement locations for gaps.

Table 8

Door No. 1		Door No. 2	
No.	Exposed side	No.	Exposed side
1	3.05	1	5.23
2	4.75	2	4.15
3	4.52	3	4.95
4	3.19	4	3.12
5	2.56	5	2.87
6	2.29	6	3.02
7	3.54	7	2.57
8	3.44	8	3.01
9	3.88	9	3.39
10	5.22	10	3.34
11	6.29	11	1.92
12	6.11	12	1.54

Some of the measurements were out of tolerances specified in section 9.3 of UL 10C:2021. For reference, the requirements are outlined below.

Table 9

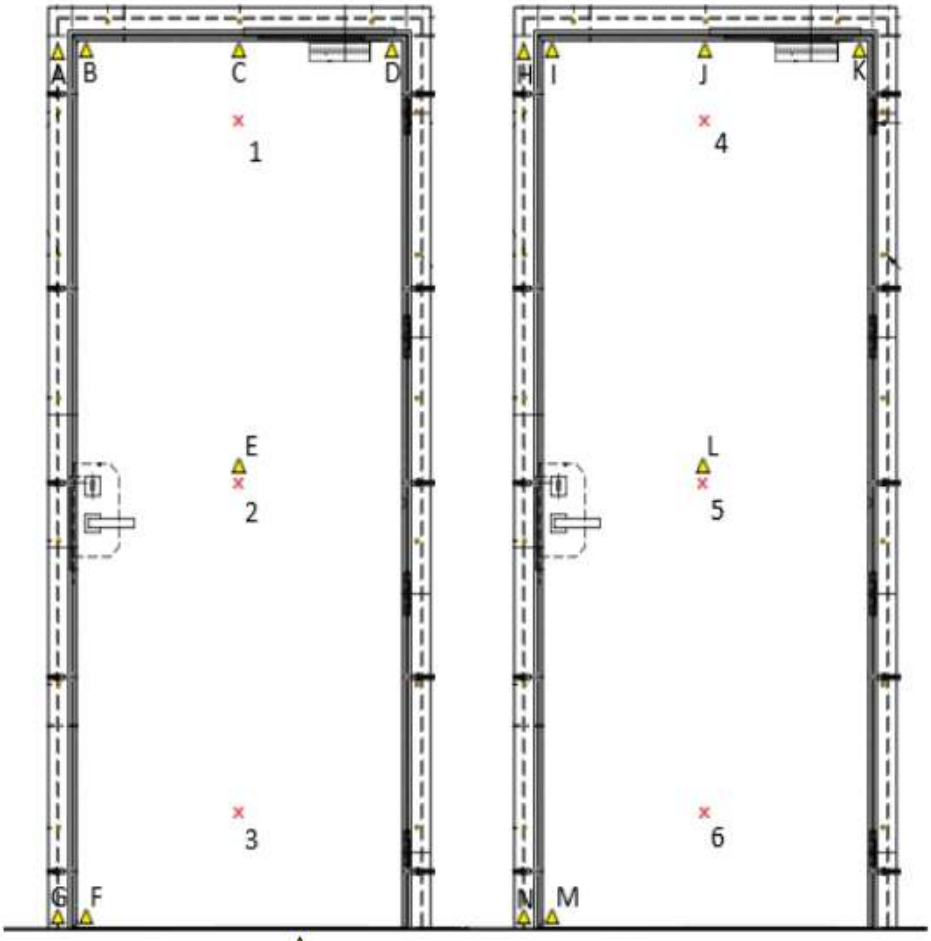
GAPS			***Measurements, mm***	
			Permitted gap size	***Actual gap size***
Door set	Along the horizontal edges	At the top	3.1±1	As per the above table
		At the bottom (Sill)	9.5(Single) or 6.4(Double) +0, - (minus) 1.6	
	Along the vertical edges	Hinge side	3.1±1	
		Between door leaves	3.1±1	
		Lock side	3.1±1	

4.3 Final Settings

Prior to the fire endurance test, the door was latched.

4.4 Arrangement of surface thermocouples and deflection measurement points

The positioning scheme of the surface thermocouples and deflection measuring points is shown in Figure 7 below.

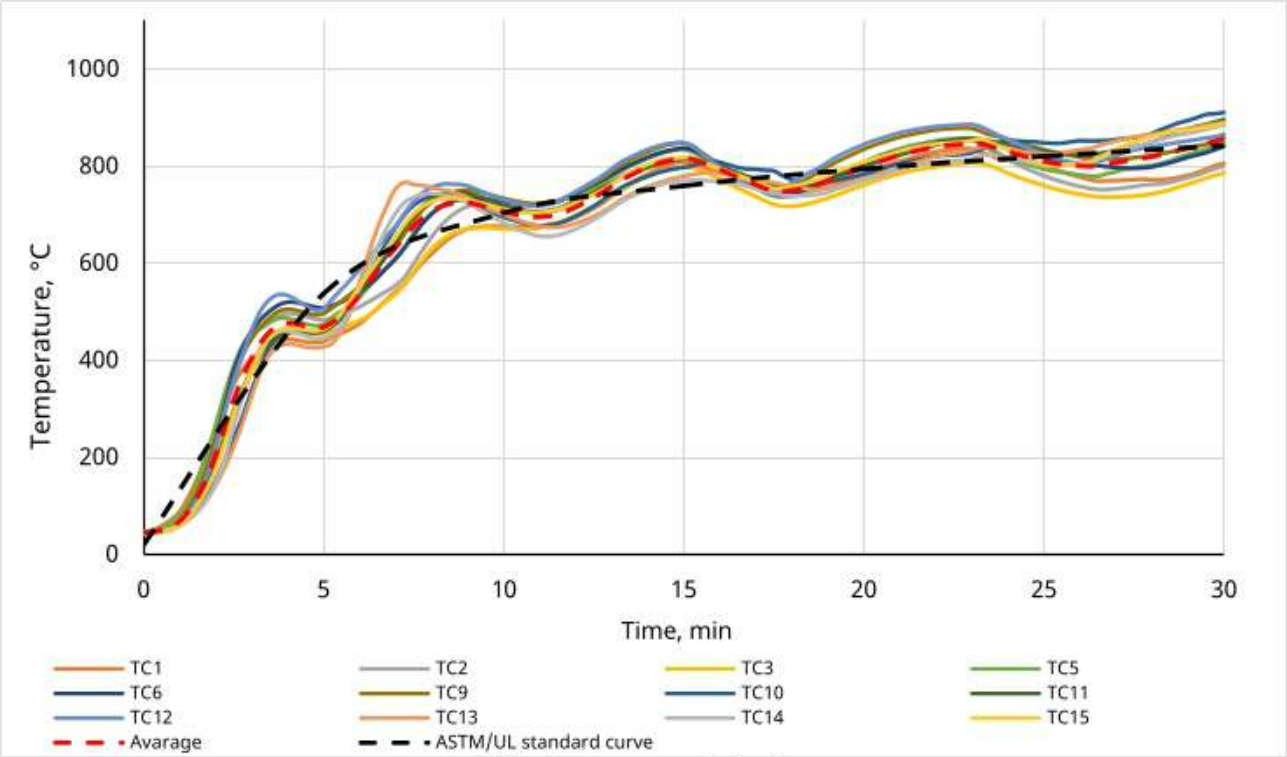


△ – Deflection measuring point
X- Temperature measuring point

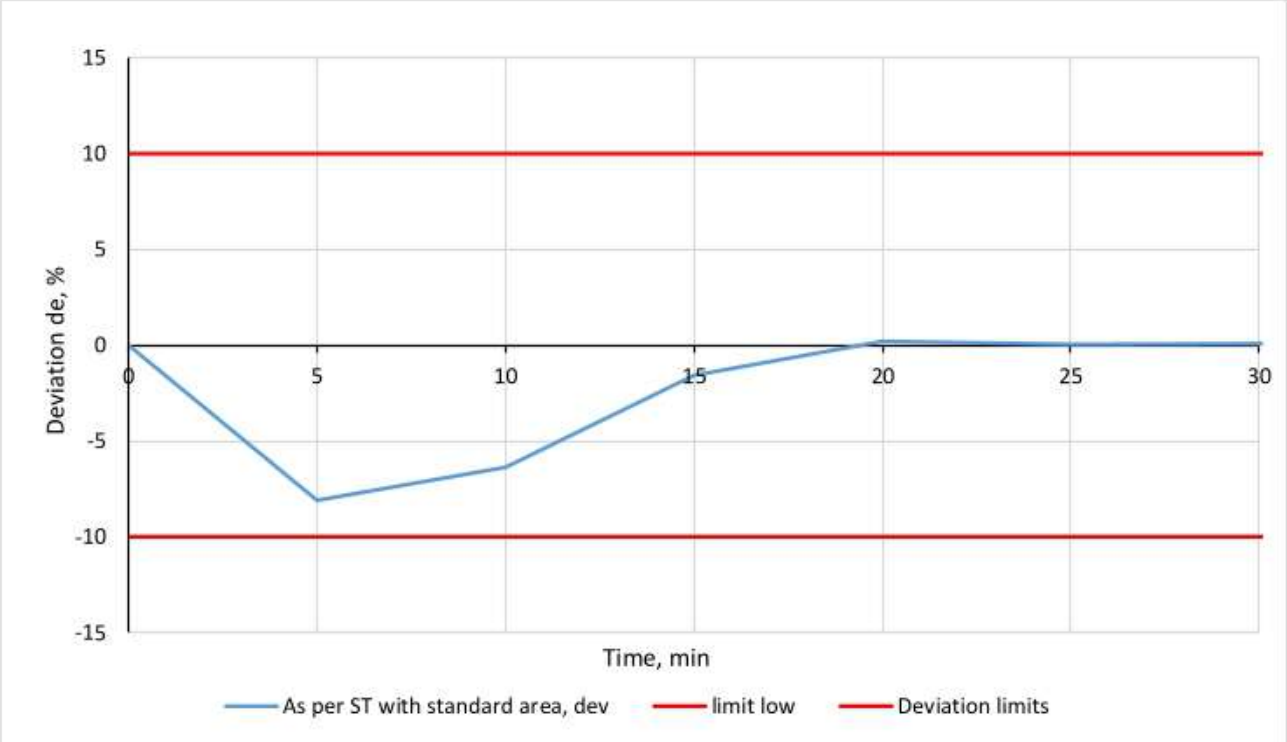
Figure 6. Scheme of the unexposed surface thermocouples and deflection measuring points on the door set.

5 TEST RESULTS

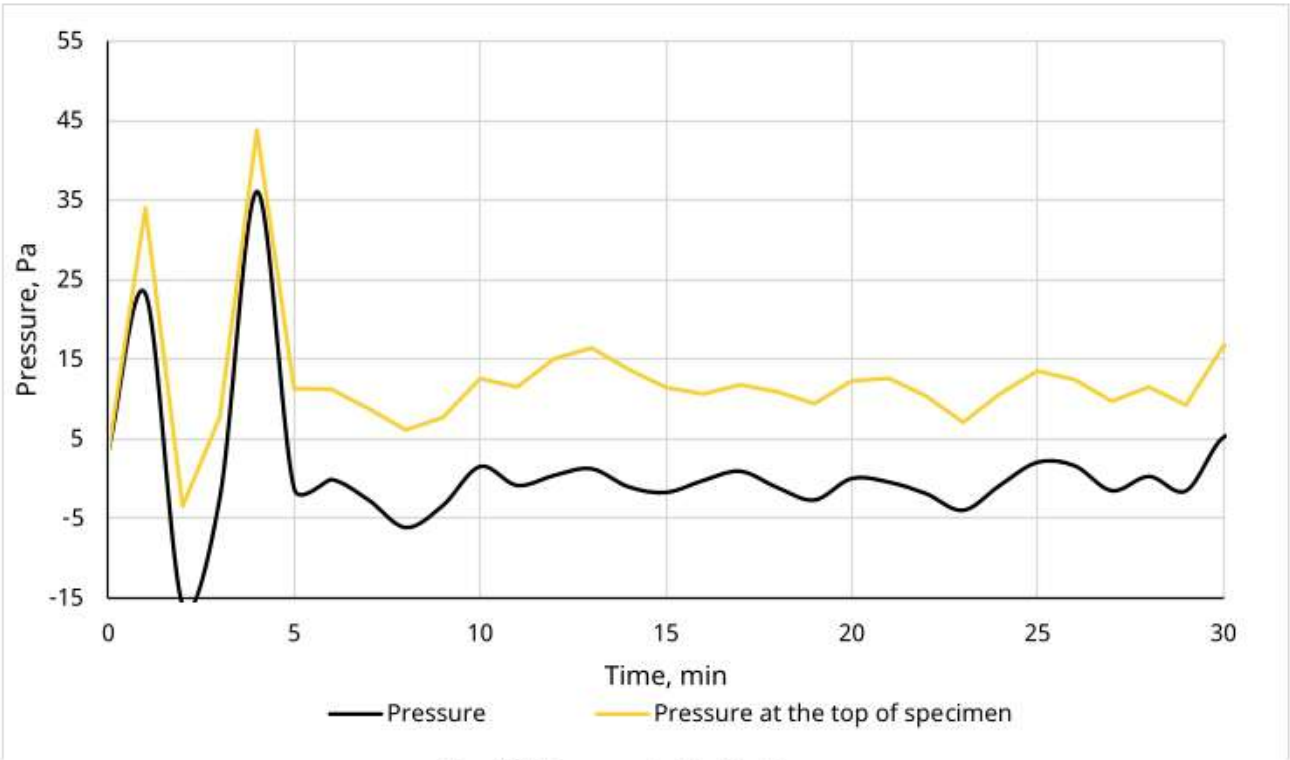
5.1 Furnace conditions



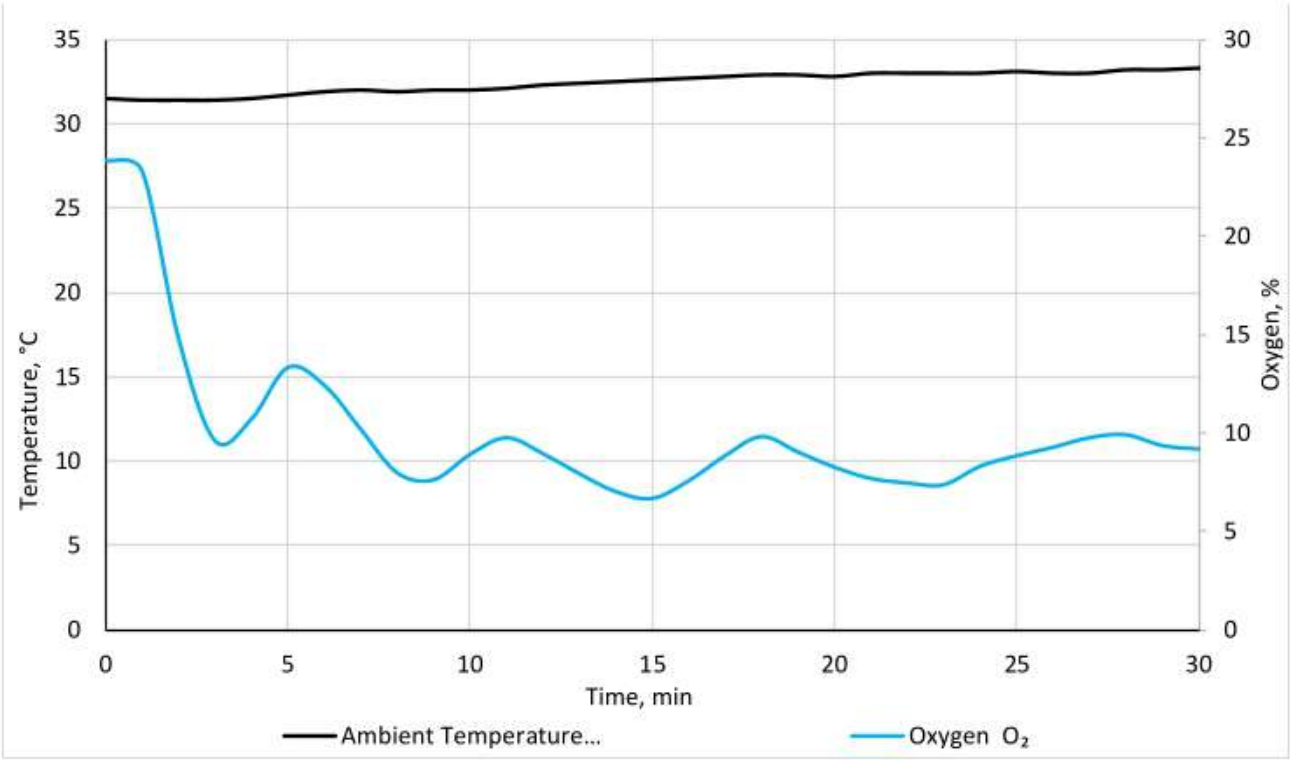
Graph 1. Temperatures in the furnace



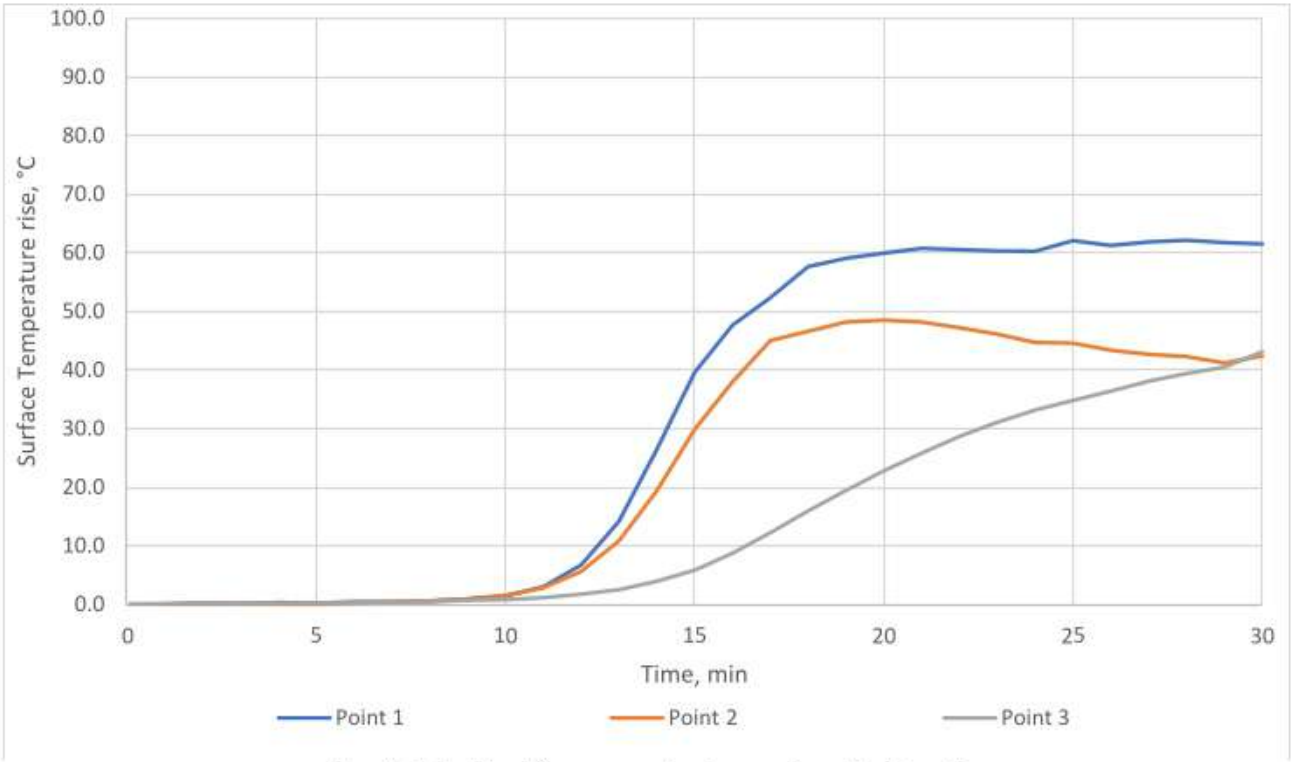
Graph 2. Deviation with tolerance limits



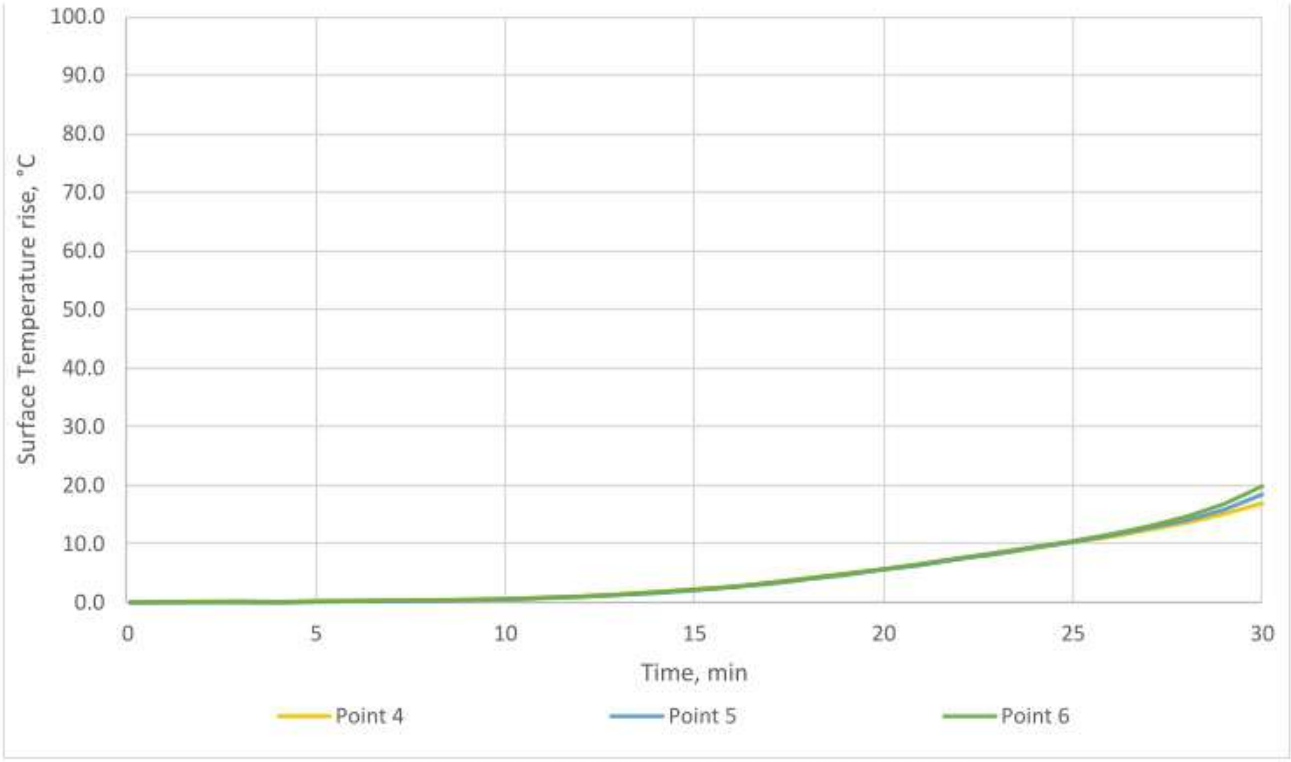
Graph 3. Pressure inside the furnace



Graph 4. Ambient Temperature & Oxygen measurement



Graph 5. Surface Thermocouple rise readings for Door 1



Graph 6. Surface Thermocouple rise readings for Door 2

5.2 Fire Endurance Test

5.2.1 Observations

Table 10

Time, (min)	OBSERVATIONS
0	Commencement of the test
4	Dense smoke from the sill and top edge of both door leaf.
9	Charring at the top edge of the door leaves.
16	Top corners of door 1 has charred.
27:24	Cotton pad application@ top right corner of door 1. no ignition, no charring.
29:35	Cotton pad application @ top left corner of door 1. No ignition, heavy charring.
30	End of Fire endurance test.

5.2.2 Deflection measurements during the Fire Endurance Test

Table 11

„+" Deflection toward the furnace „-" Deflection outwards the furnace	*Time*	*Deflection at the measuring point, mm*													
		Door 1							*Door 2*						
	(min.)	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	10	-3	+2	+1	+3	-1	0	+2	+5	+5	+4	0	+10	0	-4
	20	+2	+7	0	0	-20	0	+2	+5	+8	+5	0	+10	0	-4
	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum deflection	**+7 mm at Point B and -20 mm at point E in 20-minutes**								**+10 mm at Point L and -4 mm at point N in 20-minutes**						

5.3 Post Hose Stream Test Observations

5.3.1 Observations

Table 12

Time, (min:sec)	OBSERVATIONS
0:00	Start of the hose stream test.
0:40	End of the hose stream test. The specimen has been subjected to the impact, erosion, and rapid cooling effects of the hose stream, and continued for 40 seconds at 30psi.

5.4 Post Hose Stream Test Observations

5.4.1 Unexposed Face Observations

Both door 1 and door 2 were still intact after the hose stream test, and the door frame was still intact to the supporting construction.

5.4.2 Exposed Face Observations

Both door 1 and door 2 were still intact, but there were noticeable cracks and charring on the entire surface of the doors and frames. The latch on both doors are intact and the doors are still attached to the hinges.

6 PHOTOGRAPHS

6.1 Unexposed side view of the test specimen

Photo 4. Before the Fire Endurance test.

Photo 5. 16:59 minutes of the Fire Endurance Test.

Photo 6. 30 minutes and the end of the Fire Endurance Test.

Photo 7. End of the Hose Stream Test.

7.1 6.2 Exposed side view of the test specimen

Photo 8. Before the Fire Endurance test.

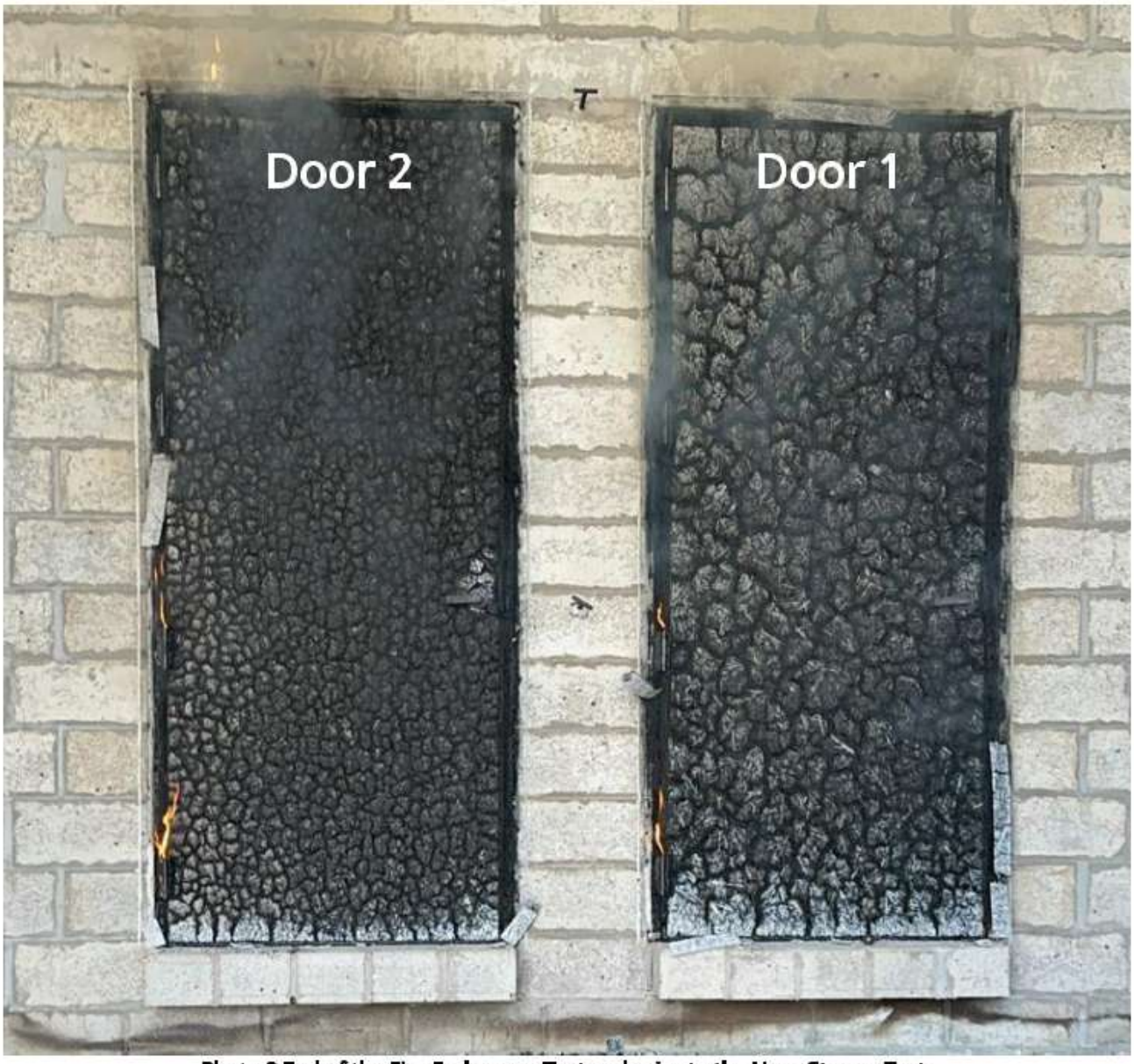


Photo 9.End of the Fire Endurance Test and prior to the Hose Stream Test.

Photo 10.End of the Hose Stream Test.

8 TEST RESULTS

Results of the Fire Endurance and Hose Stream Test for the ***"Latched Palm strand board (PSB) Fire Rated Single door"*** are presented in Tables 1-13, Figures 1-6, Graphs 1-6, and Photos 1-8, refer only to the construction described in Clause 3 of herein Test Report.

Table 13. Summary of the test results

Performance criteria	*Description of the criterion requirements*	*Time and location of criterion failure*		*Test result*	
		Door 1 (0428-24-01)	**Door 2 (0428-24-02)**	**Door 1**	**Door 2**
Fire Endurance Test	**Sustained flaming**	No failure	No failure	½hours	½ hours
	Ignition of the cotton pad	No failure	No failure		
	As per Clause 14 & 15 of UL 10C	No failure	No failure		
Hose Stream Test	**Requirements as per Clauses 14 & 15 of UL 10C**	No failure	No failure.	The door assembly has complied with the clauses 14 and 15 of UL 10C	The door assembly has complied with the clauses 14 and 15 of UL 10C
Duration of the Fire Endurance Test: ½ hours					

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.

9 TEST WITNESSES

Test sponsor representative(s) witnessing the test.	Mr. Alireza Tabatabaei	Representative of Intertek Middle East
	Mr. Anselmo Tabadeo	Representative of Abanos Furniture & Decoration Industry L.L.C.

10 ATTACHMENTS

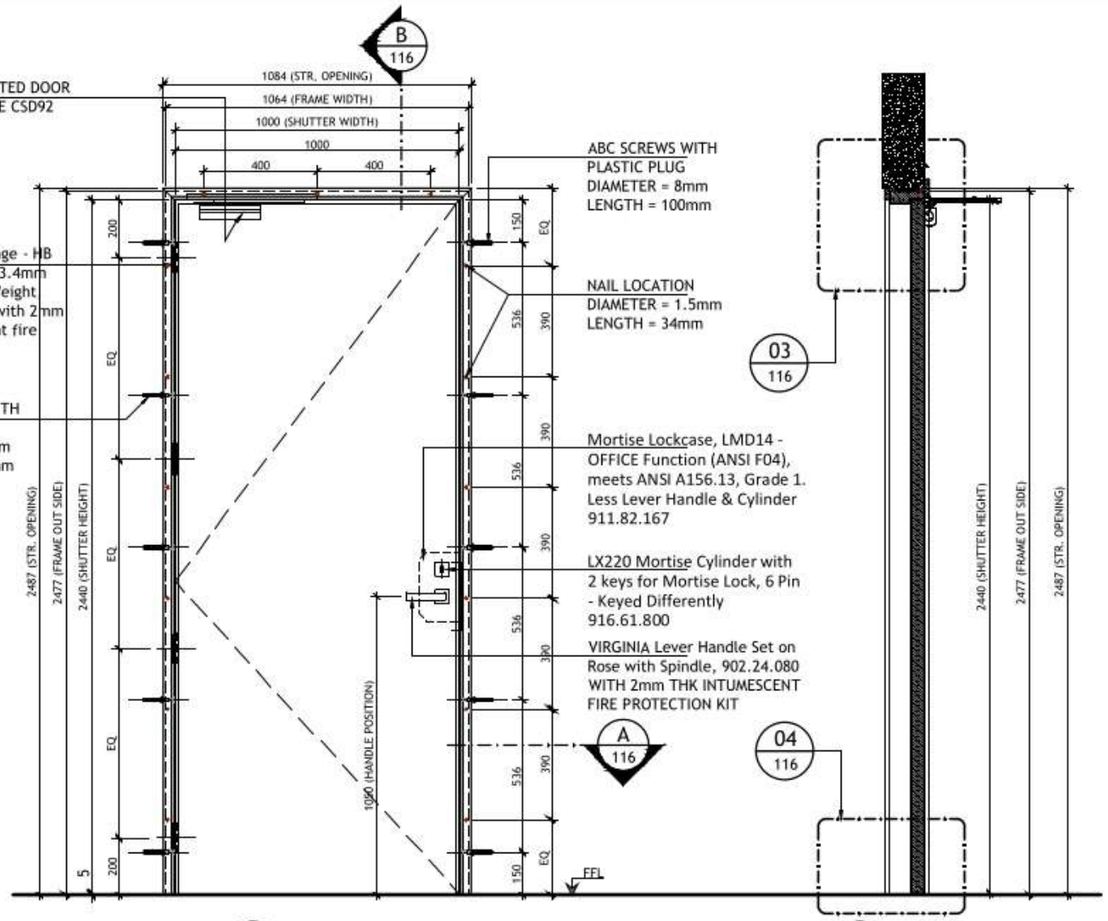
- Technical documentation No.
  - ABS00036-STD-FR-PSB-116 R4
  - ABS00036-STD-FR-PSB-123 R2

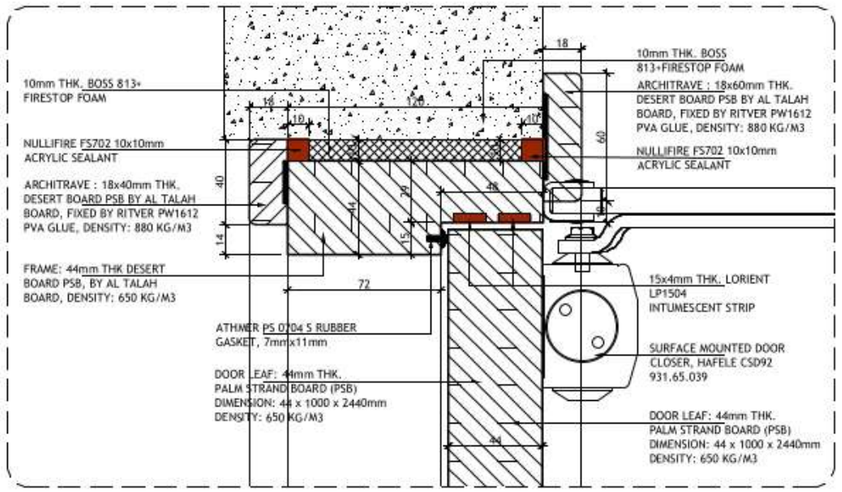
- Other documents:
  - Handle TDS - 902.24.080
  - Mortice lock TDS – 911.82.167
  - Lock cylinder TDS – 916.61.800
  - Intumescent fire protection kits TDS – 950.11.107 & 950.11.011
  - Lorient fire seal LP1504 TDS
  - PS 0704 S silicone rubber gasket TDS
  - Door closer
    - HAFELE CSD92 - 931.65.039 (Door 1)
    - Concealed Door Closer 099728, Geze Boxer Size 2-4 TDS – 931.14.299 (Door 2)
  - Hinge TDS - 926.43.020
  - LAS8001 si and Protection kit TDS
  - Palm strand board TDS
  - Kleiberit 501 TDS
  - RAR Ritver PW1612 TDS
  - BOSS 813+ TDS

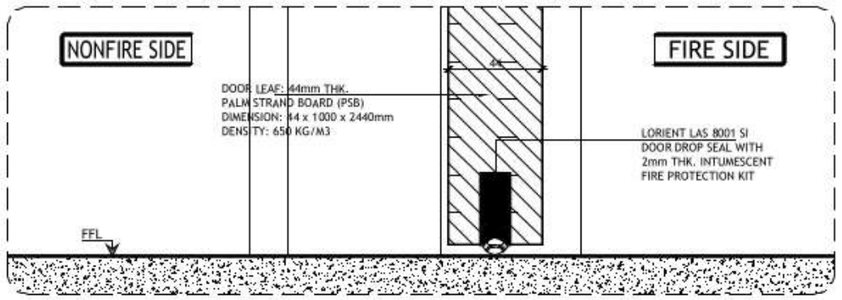
11 SIGNATORIES

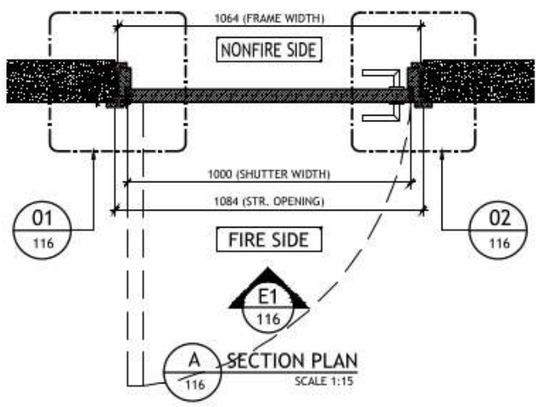
Prepared by	***Reviewed by***	***Authorized by***
Cedric Dave Montecillo	Daniel Wysokinski	Dr. Sebastian Ukleja
Fire Resistance Testing Technician	*Principal Engineer – Fire Resistance*	*Testing Manager*
Signature	Signature	Signature

--END OF REPORT-

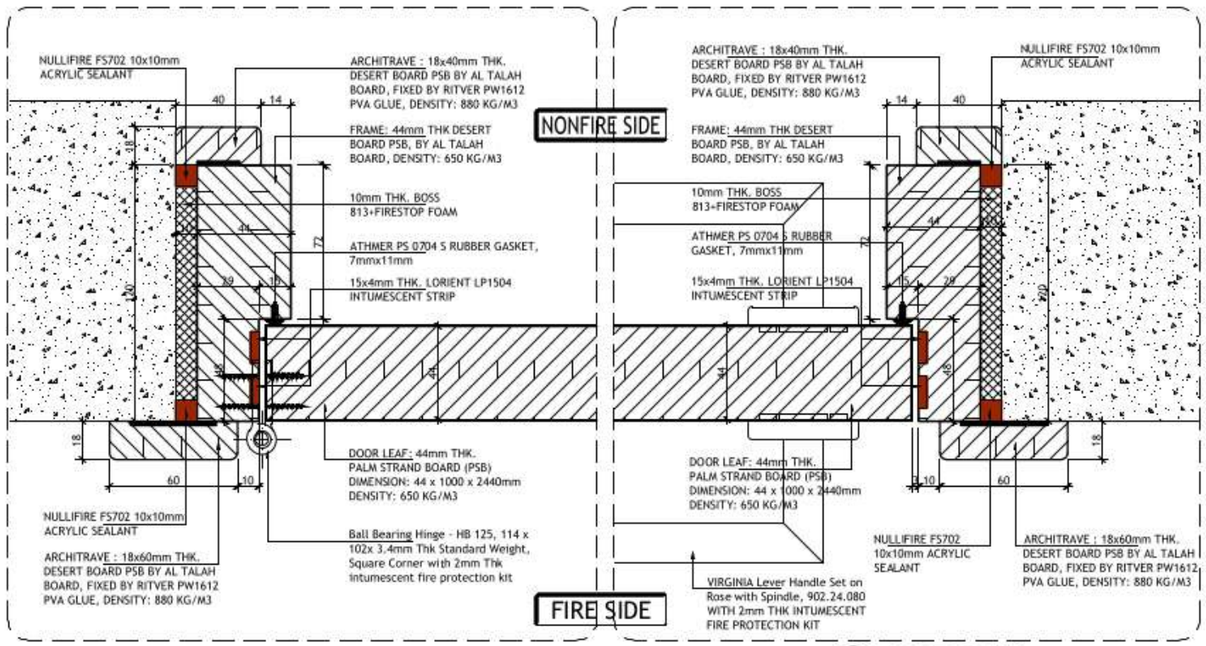








Article No.	No.	Items	Ref.	Hardware Description.	Qty.	Image
926.43.020	Each	Hinge	HB125 RP	Two Ball Bearing Hinge HB125 114 x102x 3.4mm thick, Standard Weight, Square Corner, removable Pin.	8	
931.67.039	Each	Door Closer	CSD92	Heavy Duty Door Closer, CSD92 Adjustable Size 1-6, Grade 1, Regular Arm with PA Bracket, Plastic Cover	1	
911.82.167	Each	Mortise Lockcase	LMD14	Mortise Lockcase, LMD14 - OFFICE Function (ANSI F04), meets ANSI A156.13, Grade 1. Less Lever Handle & Cylinder	2	
902.24.080	Each	Lever Handle		VIRGINIA Lever Handle Set on Rose with Spindle	2	
916.61.800	Each	Mortise Cylinder	LX220	LX220 Mortise Cylinder with 2 keys for Mortise Lock, 6 Pin - Keyed Differently	2	



NOTES:-

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

Rev.	Date	Description.	By
04	15-07-24	FOR APPROVAL	SJ
03	19-06-24	FOR APPROVAL	SJ
02	12-06-24	FOR APPROVAL	SJ
01	12-05-24	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 115480, DUBAI, TEL:+971 4 8996111, FAX : +971 4 8859966
E-mail: mail@abanos.ae, Web: www.abanos.ae

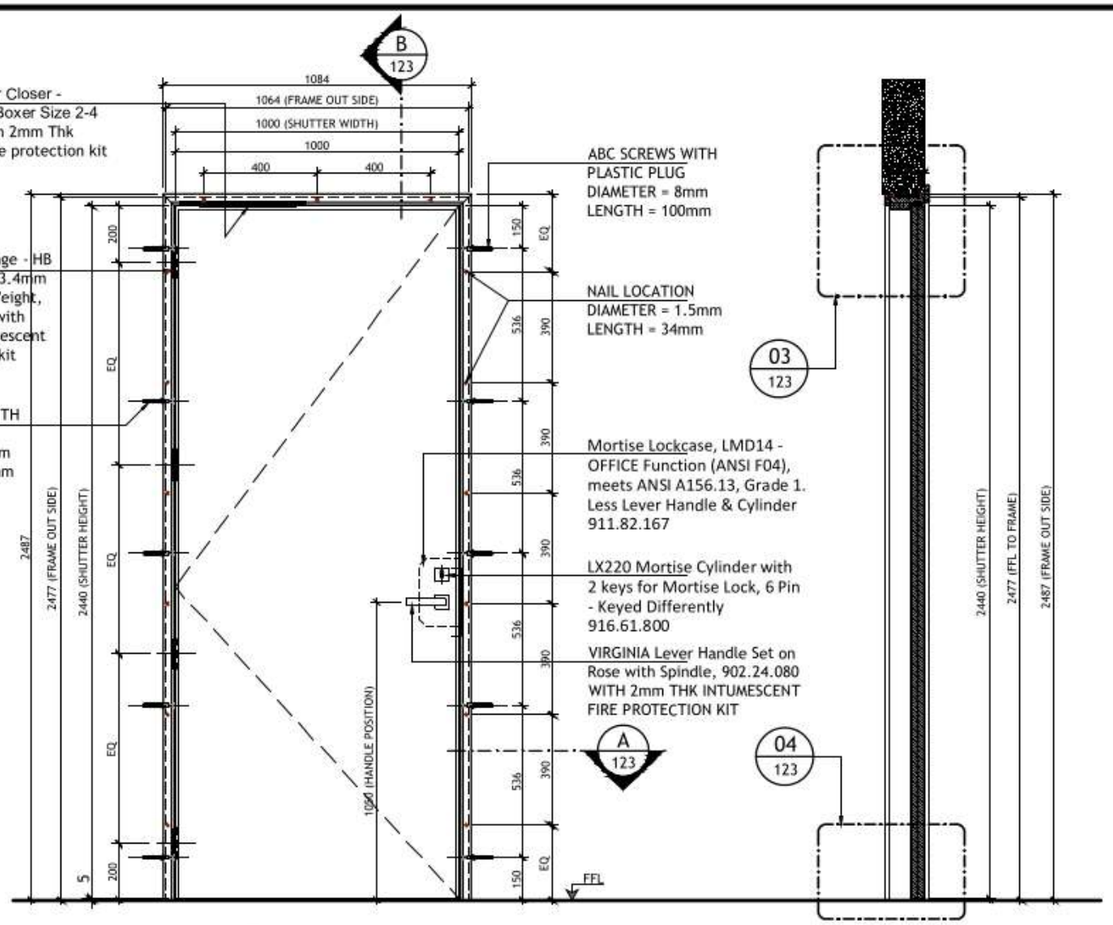
DRAWING TITLE

PSB FIRE RATED SINGLE LEAF DOOR
(DESERT BOARD : 44mm Thk)
UL - 30 Min. FIRE RATED DOOR
(BUTT HINGE & SURFACE MOUNTED DOOR CLOSER)

DRAWN BY	CHK.	APPD.	DATE
SJ	.	.	19.03.2024

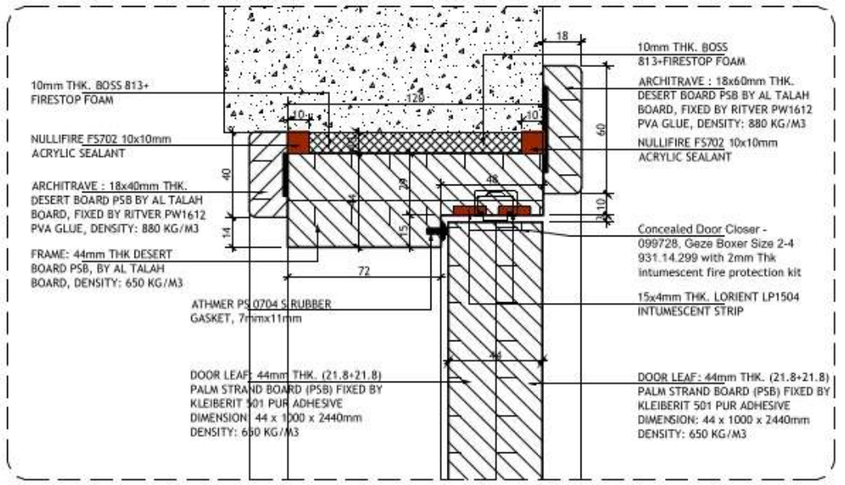
SCALE	DRAWING NO.	REV.
1:15 @ A3	ABS00036-STD-FR-PSB-116	04

Sr. # -

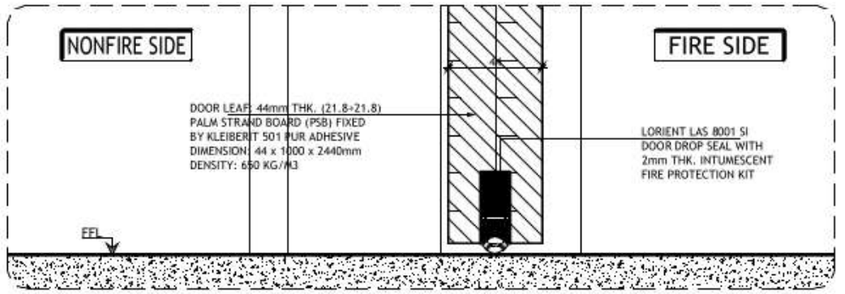


E1 / 123 ELEVATION SCALE 1:15

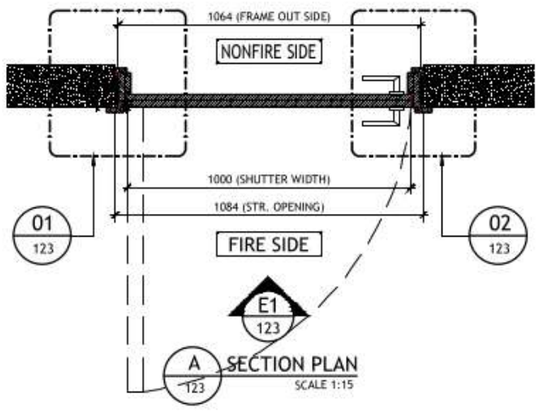
B / 123 SECTION SCALE 1:15



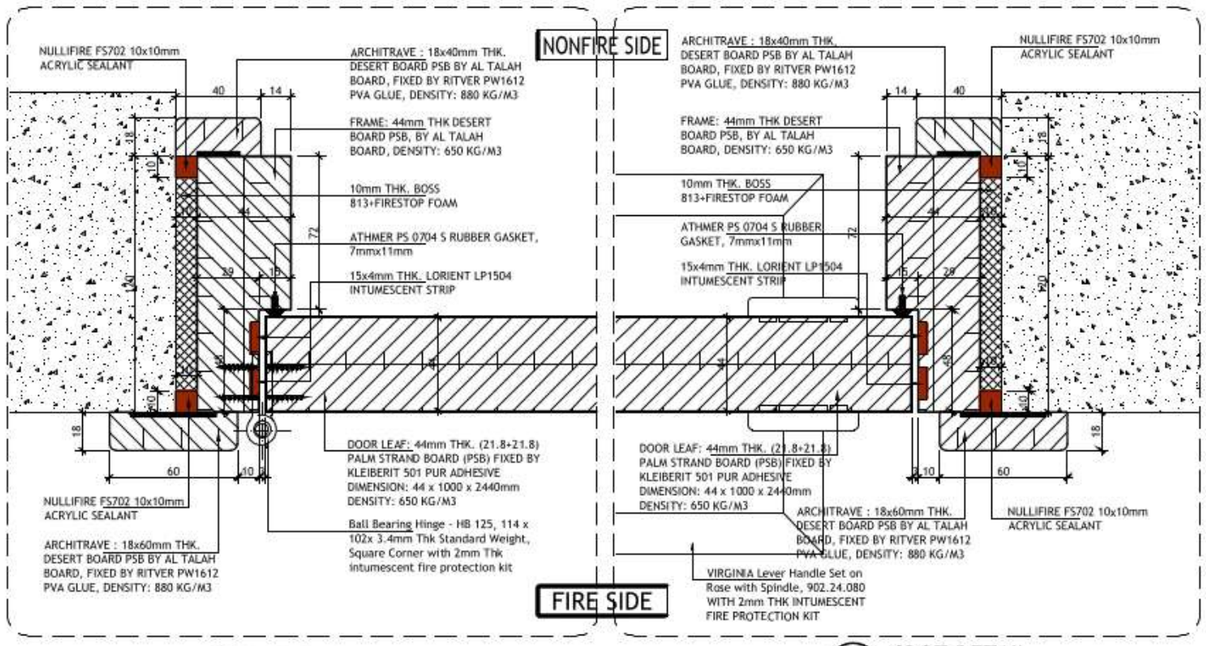
03 / 123 SPOT DETAIL SCALE = 1:2



04 / 123 SPOT DETAIL SCALE = 1:2



Article No.	No.	Items	Ref.	Hardware Description.	Qty.	Image
926.43.020	Each	Hinge	HB125 RP	Two Ball Bearing Hinge HB125 114 x102x 3.4mm thick, Standard Weight, Square Corner, removable Pin.	8	
931.14.689	Each	Door Closer	099728	Concealed Door Closer with Guide Rail, Boxer, EN2-4; Non-Hold Open	1	
911.82.167	Each	Mortise Lockcase	LX220	Mortise Lockcase, LMD14 - OFFICE Function (ANSI F04), meets ANSI A156.13, Grade 1. Less Lever Handle & Cylinder	2	
902.24.080	Each	Lever Handle		VIRGINIA Lever Handle Set on Rose with Spindle	2	
916.61.800	Each	Mortise Cylinder	LX220	LX220 Mortise Cylinder with 2 keys for Mortise Lock, 6 Pin - Keyed Differently	2	



01 / 123 SPOT DETAIL SCALE = 1:2

02 / 123 SPOT DETAIL SCALE = 1:2

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NOTES:-

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

Rev.	Date	Description.	By
02	15-07-24	FOR APPROVAL	SJ
01	19-06-24	FOR APPROVAL	SJ

CLIENT

ABANOS

CONSULTANT

.

MAIN CONTRACTOR

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DRAWING TITLE

PSB FIRE RATED SINGLE LEAF DOOR (DESERT BOARD : 21.8+21.8 = 44mm Thk) UL - 30 Min. FIRE RATED DOOR (BUTT HINGE & CONCEALED DOOR CLOSER)

DRAWN BY	CHK.	APPD.	DATE
SJ	.	.	12.06.2024

SCALE	DRAWING NO.	REV.
1:15 @ A3	ABS00036-STD-FR-PSB-123	02

Sr. # -

DesertBoard.
By Al Taleh 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.

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 Taleh 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

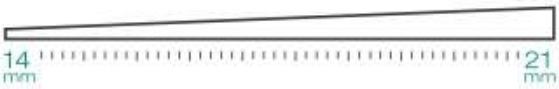
PSB

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

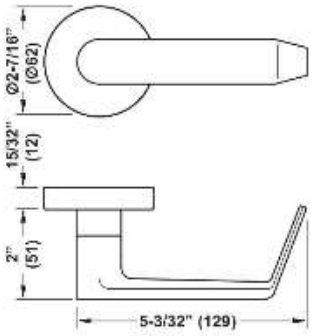
PSB has been tested by Internal and Third-Part Labratories to ensure the quality of the boards.

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 party 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.

Virginia – Sectional Trim



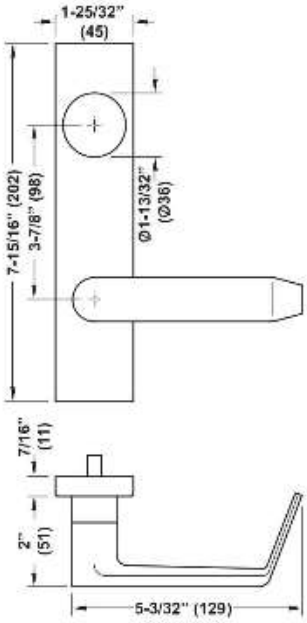
- Material: Stainless steel grade 304
- Finish: 630 (US32D)

Supplied with
1 Pair of lever handles on rose
1 Spindle 8 mm

	Cat. No.
Cast Lever Handle	902.24.080

Packing: 1 pair

Virginia – Escutcheon Trim



Note
Please contact Häfele to determine the correct escutcheon trim for your lock function.

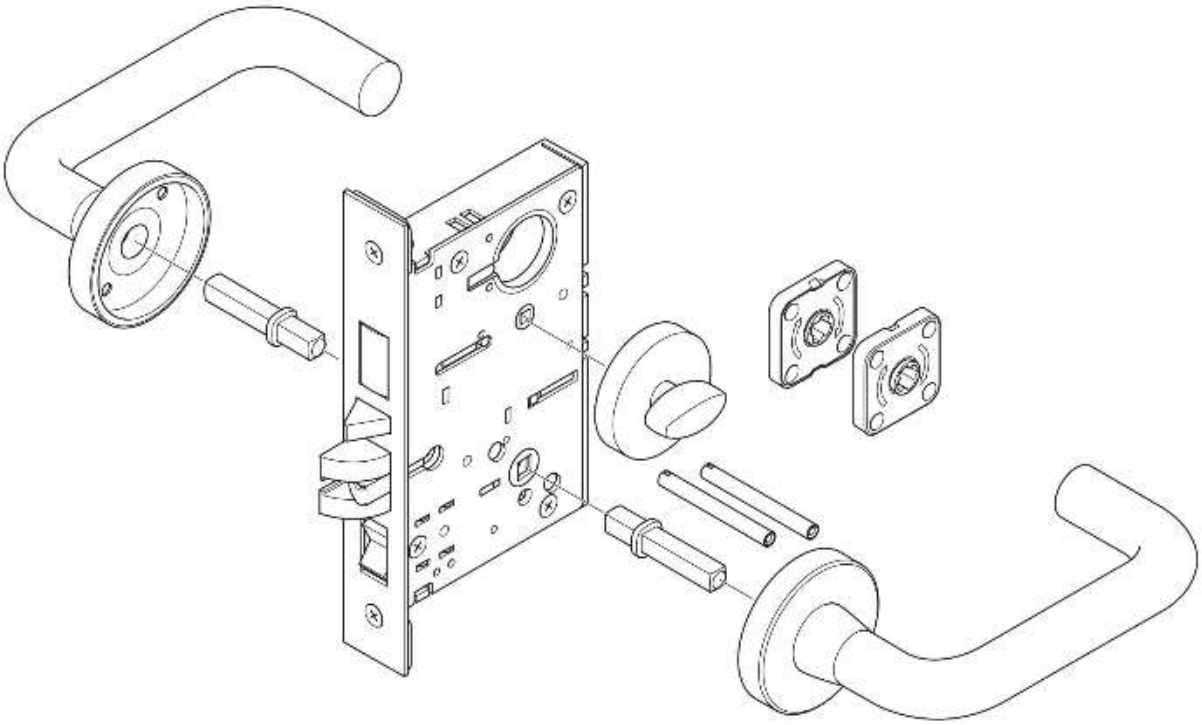
- Material: Stainless steel grade 304
- Finish: 630 (US32D)

Supplied with
1 Pair of lever handles on escutcheon
1 Spindle 8 mm

HÄFELE

LMD Series

UL LISTED BHMA CERTIFIED



Heavy Duty Grade 1 Lock

HÄFELE

An extra heavy duty mortise lockset, designed to surpass the requirements of ANSI A156.13 Grade 1.
It will function in excess of 1,000,000 times.
It is suitable for frequently used doors in public buildings, commercial buildings, hotels and hospitals.

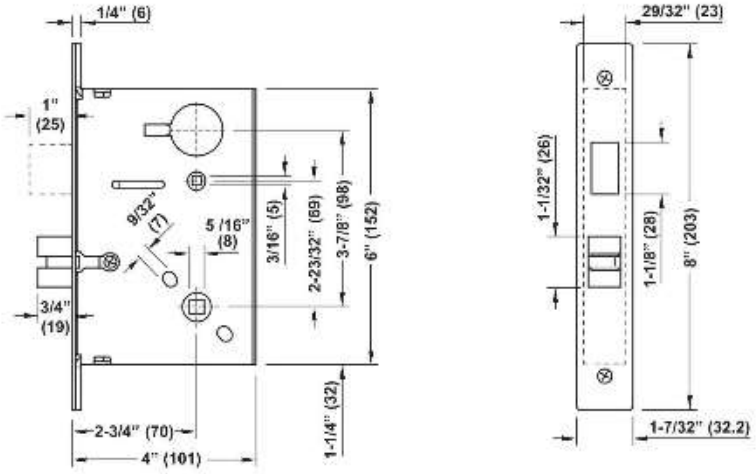
Features

- All bolts are made of Stainless Steel, most working parts inside the case are made of high strength steel alloy.
- Rose and escutcheon are through-bolted. Steps of installation are minimal, fast and easy.

• Area of application:	For commercial and institutional buildings where the finest mortise locks are required
• Material:	Deadbolt and Latchbolt: Stainless Steel
• Finish:	630 (US32D) Stock
• Handing:	Field reversible without opening case
• Version:	Strike: Curved lip, non-handed (ASA) Cylinder: Mortise 1-1/8" (29 mm) for sectional trim and 1-1/4" (32 mm) for escutcheon trim
• Latchbolt:	3/4" (19 mm) Throw
• Deadbolt:	1" (25 mm) Throw
• Dimensions:	4 5/16" x 6" x 1" (110 mm x 152 mm x 25 mm)
• Backset:	2 3/4" (70 mm)
• Door thickness:	1 3/8" (35 mm) to 2 1/2" (64 mm)
• Spindle:	Breakable to prevent the lock case from unlocking or being damaged
• Door preparation:	Conforms to ANSI A 115.1
• Certification:	ANSI A156.13, Grade 1 operational and security UL listed for 3-Hour-Fire Rating

Note

Please see cylinder section for masterkeying possibilities.
Other finishes are available upon request.



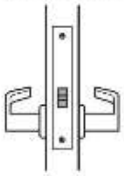
Order reference

For a complete and functional mortise lock, the following components have to be ordered separately.

1. Lock case with desired function
2. Lever trim set
3. Mortise Cylinder(s) (if applicable)
4. Doors need to be prepared by using templates supplied

Cylinder section ▶AHAS 2.80

Model LMD10

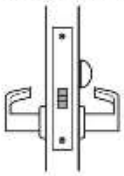


- Functionality: Latchbolt retracted by lever on either side
- Finish: 630 (US32D)

Function	ANSI Code	Cat. No.
Passage	F01	911.82.161

Packing: 1 piece

Model LMD11

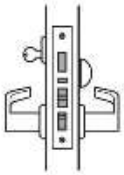


- Functionality: Latchbolt retracted by lever on either side unless outside is locked by thumbturn inside
  Operating inside lever or emergency turn outside unlocks outside
  Inside lever always free
- Finish: 630 (US32D)

Function	ANSI Code	Cat. No.
Privacy	F22	911.82.165

Packing: 1 piece

Model LMD13

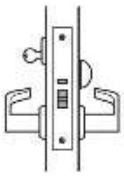


- Functionality: Latchbolt retracted by lever on either side unless outside is locked by toggle switch
  Deadbolt operated by key outside or thumbturn inside
  Throwing deadbolt automatically locks the outside lever
  Auxiliary latch deadlocks latchbolt when door is closed
  Inside lever always free
- Finish: 630 (US32D)

Function	ANSI Code	Cat. No.
Entrance	F20	911.82.162

Packing: 1 piece

Model LMD14

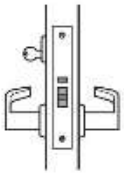


- Functionality: Latchbolt retracted by lever on either side unless outside is locked by thumbturn inside or key
  Auxiliary latch deadlocks latchbolt when door is closed
  Inside lever always free
- Finish: 630 (US32D)

Function	ANSI Code	Cat. No.
Office	F04	911.82.167

Packing: 1 piece

Model LMD15



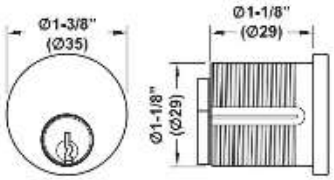
- Functionality: Latchbolt retracted by lever on either side unless outside is locked by key
  Auxiliary latch deadlocks latchbolt when door is closed
  Inside lever always free
- Finish: 630 (US32D)

Function	ANSI Code	Cat. No.
Classroom	F05	911.82.163

Packing: 1 piece

Cylinder section ▶AHAS 2.80

LX220 Series



- Features: Typical US mortise cylinder assembly
- Material: Brass or Bronze
- Keyway: Schlage Classic "C"
- Length: 1 1/8" (29 mm)

6 Pin – Under Master Key System

Supplied with
1 Mortise cylinder
2 Keys
1 Fixing screw

	Finish	Cat. No.
Mortise cylinder	606 (US4)	916.61.850
	613 (US10B)	916.61.870
	626 (US26D)	916.61.810
	625 (US26)	916.61.830

Packing: 1 piece

Note
There will be additional charges for GMK and GGMK Systems.

6 Pin – Non Master Key System

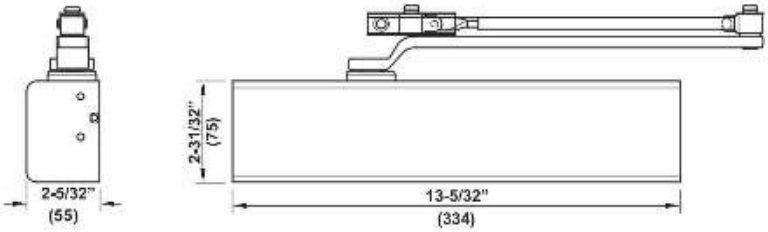
Supplied with
1 Mortise cylinder
2 Keys
1 Fixing screw

	Finish	Cat. No.
Mortise cylinder	606 (US4)	916.61.840
	613 (US10B)	916.61.860
	626 (US26D)	916.61.800
	625 (US26)	916.61.820

Packing: 1 piece

Note
Please contact Häfele for additional keyways, cylinder lenghts and cams.

CSD90 Series
Heavy Duty, Grade 1



- Features: Heavy duty with backcheck, barrier free
- Closing force: Adjustable spring size 1 through 6
- Adjustment facility: Closing and latch speed, backcheck and delayed action
- Material: Closer body: Cast aluminium
  Arm: Steel
  Cover: Plastic (Optional steel cover available)
- Finish: Painted aluminium or bronze
- Handing: Non-handed
- Installation: Regular arm, top jamb and parallel arm (Parallel arm bracket is included)
- Certification: BHMA Certified/ANSI A156.4 – Grade 1
  UL10C, 3-Hour-Fire Rated

	Cover	689 (US28)	695 Bronze painted
Door Closer CSD92	Painted plastic cover	931.67.039	931.67.031

Packing: 1 piece

→ Option Accessories

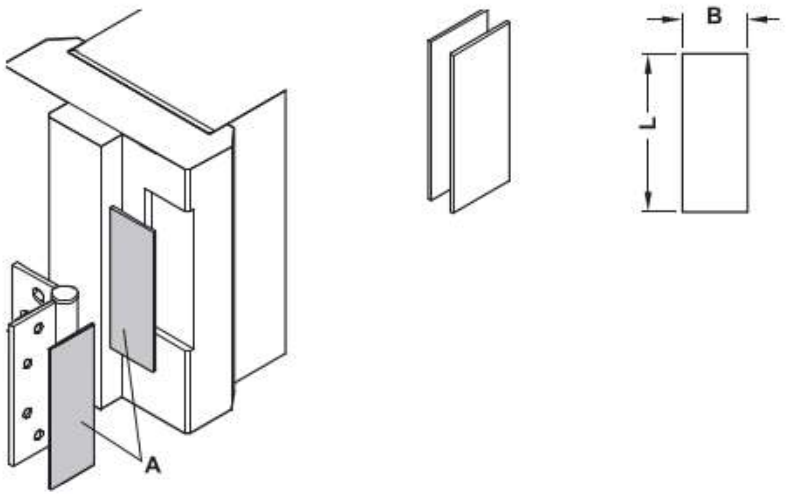
	689 (US28)	695 Bronze painted
Cush and Stop Arm	931.67.529	931.67.521
Hold Open Arm	931.65.539	931.67.531

Packing: 1 piece

	Stainless steel
CSD92 Cover	931.67.920

Packing: 1 piece

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

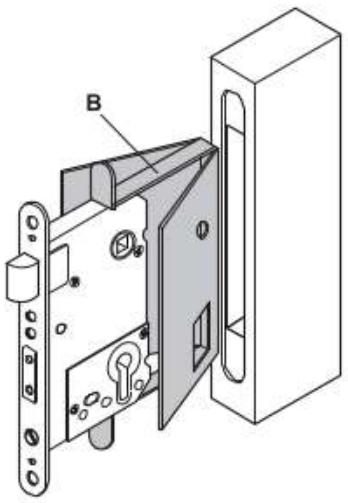
Note
The installation must comply with specifications and testing must have been carried out in accordance with EN 1634 in order to guarantee the fire resisting properties of the door. The applicable national and international guidelines, standards, approvals and other relevant regulations with regard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

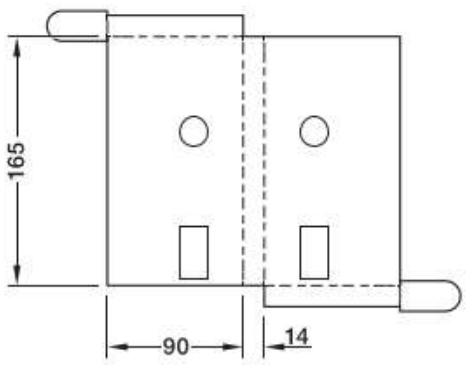
Packing: 1 set

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

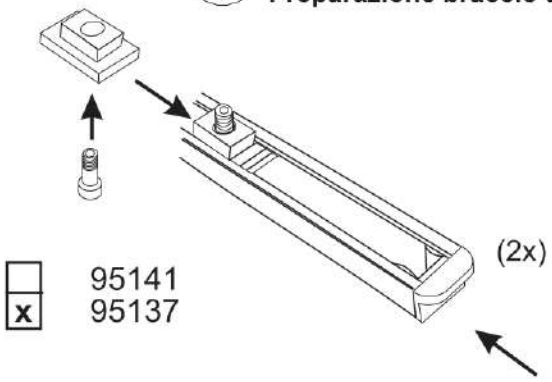
(D)	Abmessungen	Schließkraft	Gewicht
(GB)	Dimensions	Closing force EN size	Weight
(F)	Dimensions	Force de fermeture	Poids
(I)	Dimensioni	Forza secondo	Peso
(NL)	Afmetingen	Sluitkracht	Gewicht
(S)	Dimensioner	Stängningskraft	Vikt
(PL)	Wymiary	Siła zamykania	Ciężar
Gr. 2 - 4	**271 x 42 x 32 mm**	**Gr. 2 - 4**	**1,4 kg**
Gr. 3 - 6	**276 x 51 x 40mm**	**Gr. 3 - 6**	**2,1 kg**

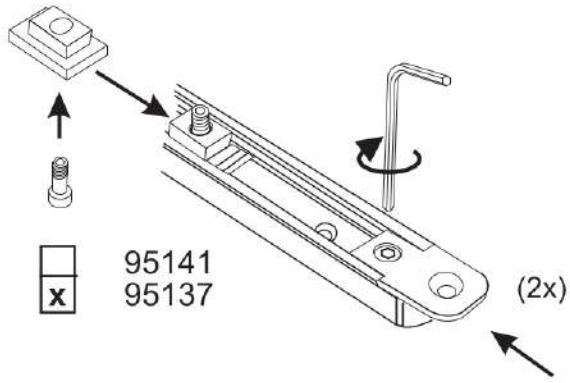
(D) Holztür und -Rahmen
(GB) Wooden door and frame
(F) Portes et cadres en bois
(I) Porta e telaio in legno
(NL) Houten deur en kozijn
(S) Trädörr och -karm
(PL) Drzwi i ościeżnice drewniane

(D) Metalltür und -Rahmen
(GB) Metal door and frame
(F) Portes et cadres en métal
(I) Porta e telaio in metallo
(NL) Metalen deur en kozijn
(S) Metalldörr och -karm
(PL) Drzwi i ościeżnice metalowe

(D) **Vormontage Gleitschiene**
(GB) **Preset guide rail**
(F) **Préassemblage de la coulisse**
(I) **Preparazione braccio a slitta**

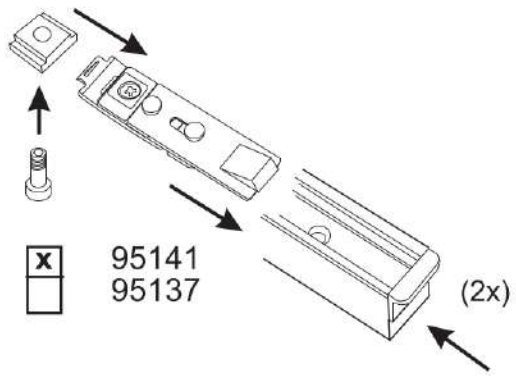
(NL) **Voormontage glijrail**
(S) **Förbereda glidskenan**
(PL) Montaż wstępny szyny ślizgowej

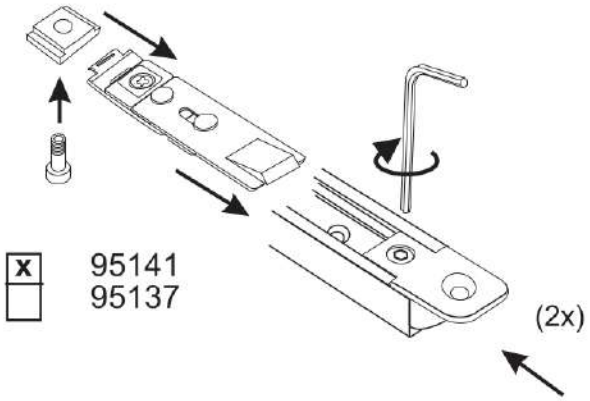




(D) **Vormontage mechanische Feststellung**
(GB) **Preset mechanical hold-open device**
(F) **Préassemblage arrêt mécanique**
(I) **Preparazione fermo meccanico**

(NL) **Voormontage mechanische vastzetting**
(S) **Förbereda mekanisk uppställning**
(PL) Montaż mechaniczną blokadą otwarcia skrzydła

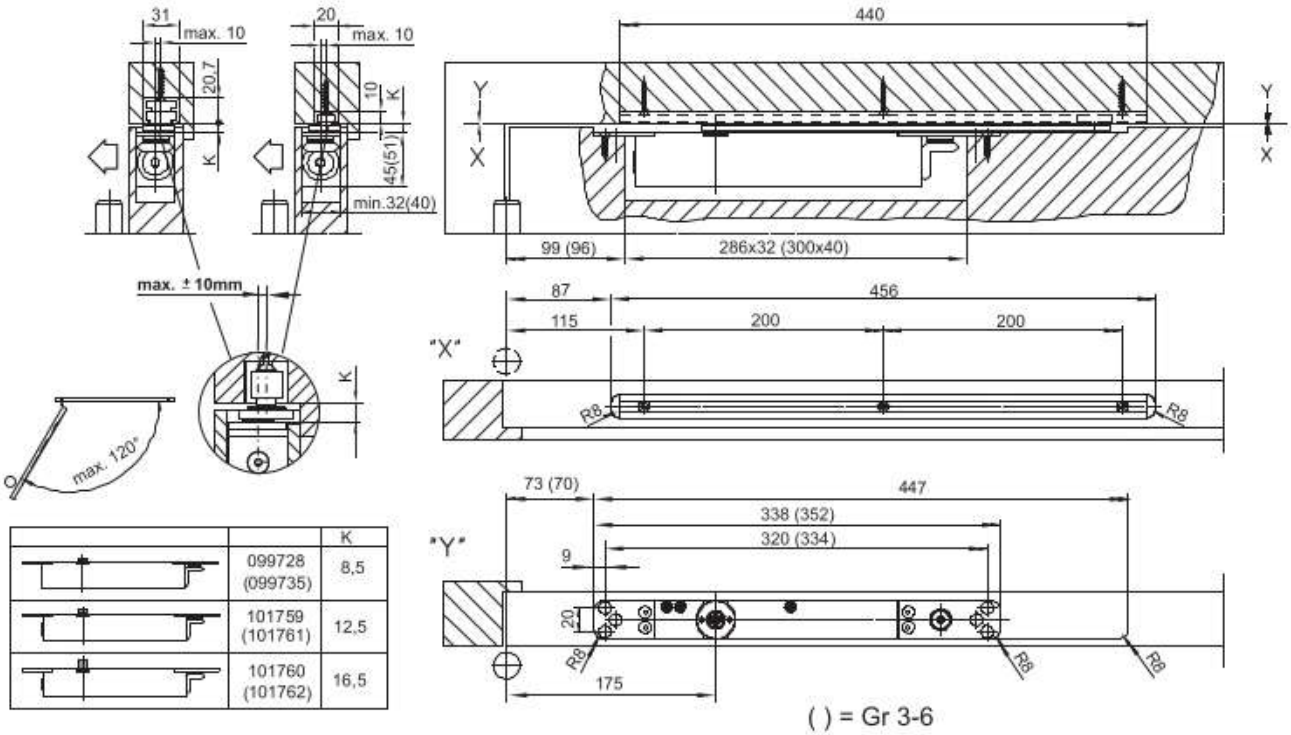




(D) **Einbaumaße Holztür**
(GB) **Mounting dimensions wooden door**
(F) **Cotes de montage porte en bois**
(I) **Dimensioni montaggio porta in legno**

(NL) **Inbouwmaten houten deur**
(S) **Inbyggnadsmått trädörr**
(PL) Wymiary montażowe dla drzwi drewnianych

95141 95137



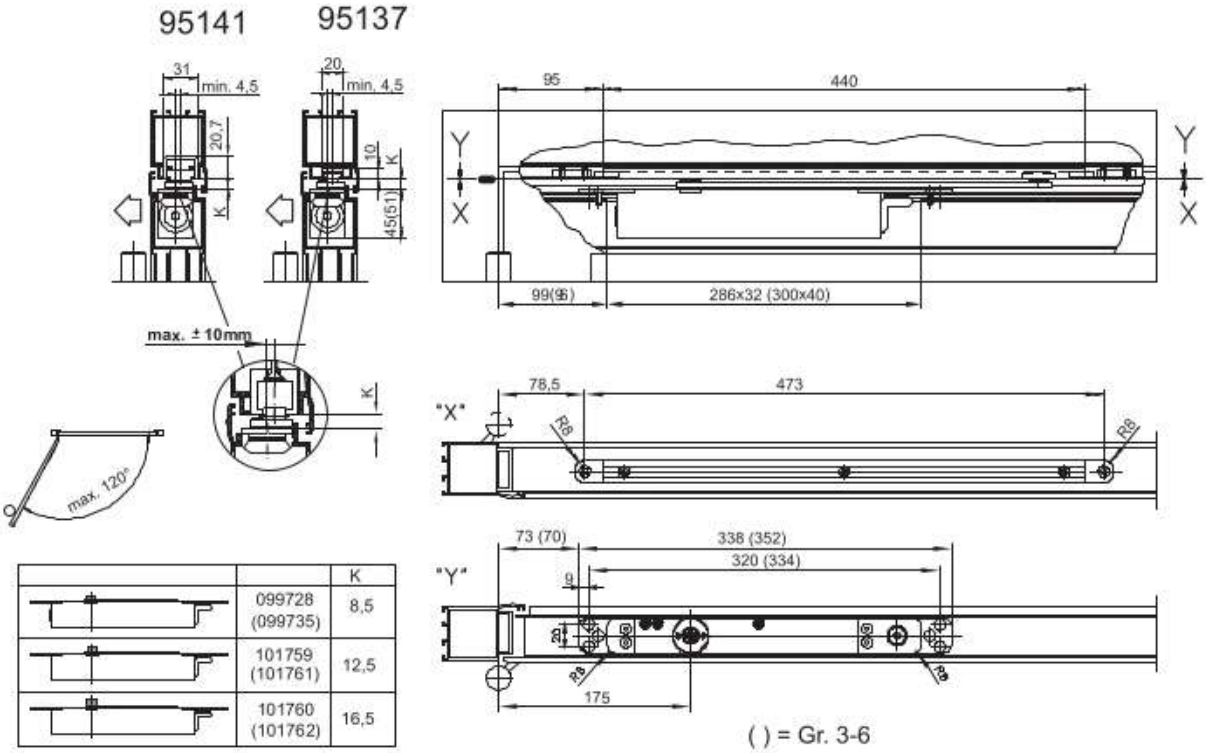
		K
	099728 (099735)	8,5
	101759 (101761)	12,5
	101760 (101762)	16,5

( ) = Gr 3-6

(D) **Einbaumaße Metallrahmen**
(GB) **Mounting dimensions metal frame**
(F) **Cotes de montage porte en métal**
(I) **Dimensioni montaggio telaio in metallo**

(NL) **Inbouwmaten metalen kozijn**
(S) **Inbyggnadsmått metallkarm**
(PL) Wymiary montażowe dla ościeżnic metalowych

95141 95137

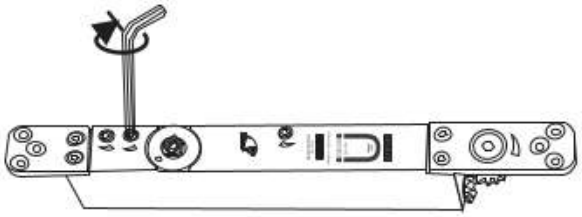


		K
	099728 (099735)	8,5
	101759 (101761)	12,5
	101760 (101762)	16,5

( ) = Gr. 3-6

(D) **Vormontage**
(GB) **Pre-assembly**
(F) **Préassemblage**
(I) **Premontaggio**
(NL) **Voormontage**
(S) **Förmontage**
(PL) Montaż wstępny

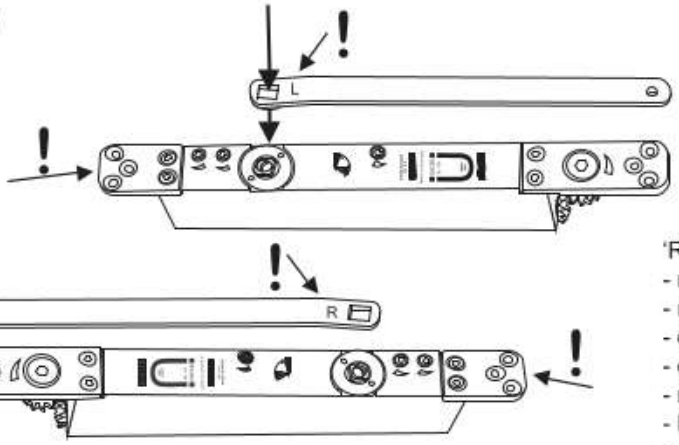
1



Schließzeit 'Zu'
Closing time 'lock'
Durée de fermeture à
Tempo di chiusura 'chiuso'
Sluittijd 'dicht'
Stängningstid 'Stängd'
Zwiększanie czasu zamykania

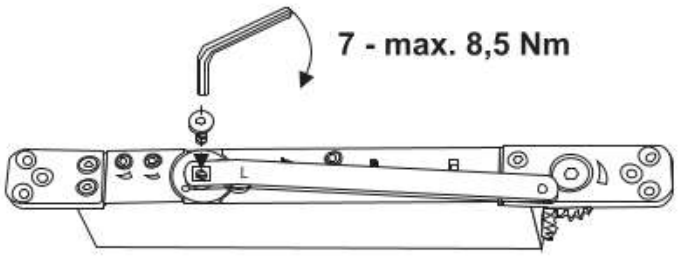
2

'L' = DIN -
- links
- left
- gauche
- sinistra
- links
- höger
- drzwi lewe wg DIN



'R' = DIN -
- rechts
- right
- droite
- destra
- rechts
- höger
- drzwi prawe wg DIN

3



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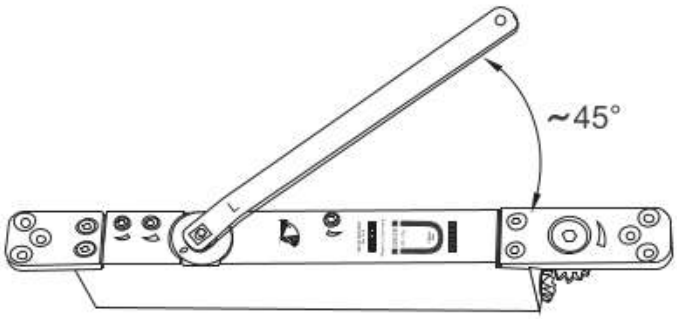
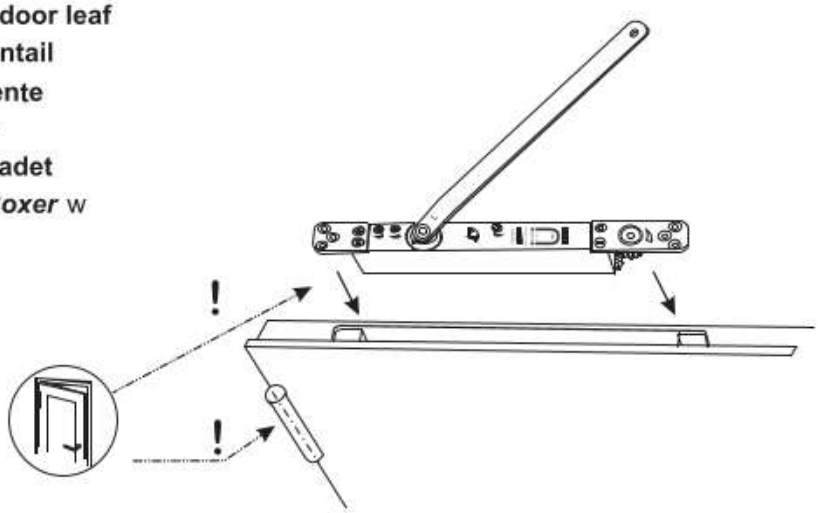
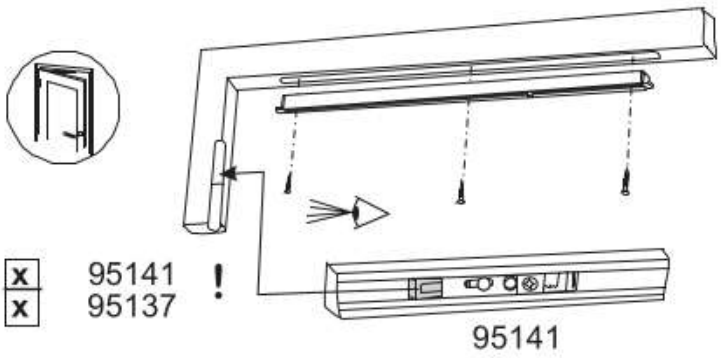


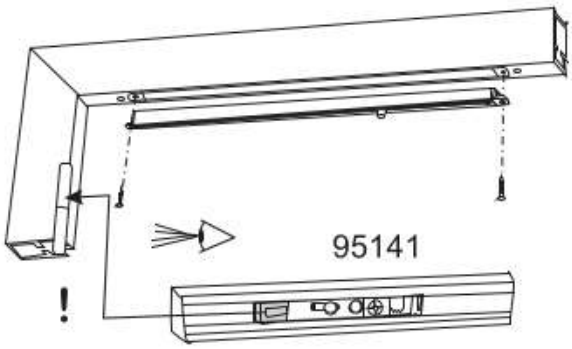
(D) **Montage GEZE *Boxer* in das Türblatt**
(GB) **Mouting of GEZE *Boxer* into the door leaf**
(F) **Montage GEZE *Boxer* dans le vantail**
(I) **Montaggio GEZE *Boxer* nel battente**
(NL) **Montage GEZE *Boxer* in de deur**
(S) **Montage av GEZE *Boxer* i dörrbladet**
(PL) Montaż samozamykacza **GEZE *Boxer*** w skrzydle drzwiowym



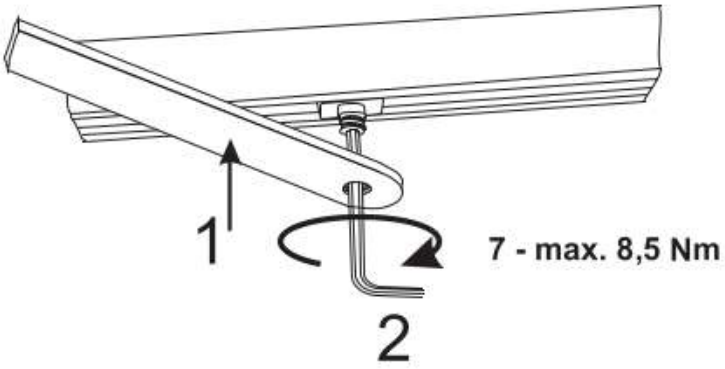
(D) **Montage der Gleitschiene, Holztür**
(GB) **Mounting of guide rail, wooden door**
(F) **Montage de la coulisse, porte en bois**
(I) **Mont. del braccio a slitta, porta in legno**
(NL) **Montage van de glijrail, houten deur**
(S) **Montage av glidskenan, trädörr**
(PL) Montaż szyny ślizgowej – Drzwi drewniane

(D) **Montage der Gleitschiene, Metalltür**
(GB) **Mounting of guide rail, metal door**
(F) **Montage de la coulisse, porte en métal**
(I) **Mont. del braccio a slitta, porta in metallo**
(NL) **Montage van de glijrail, metalen deur**
(S) **Montage av glidskenan, metalldörr**
(PL) Montaż szyny ślizgowej – Drzwi metalowe





(D) **Hebel mit Gleitschiene verschrauben**
(GB) **Screwing lever and guide rail together**
(F) **Visser le levier avec la coulisse**
(I) **Avvitare leva con braccio a slitta**
(NL) **Arm op glijrail vastschroeven**
(S) **Skruva fast armen på glidskenan**
(PL) Łączenie dźwigni z szyną ślizgową



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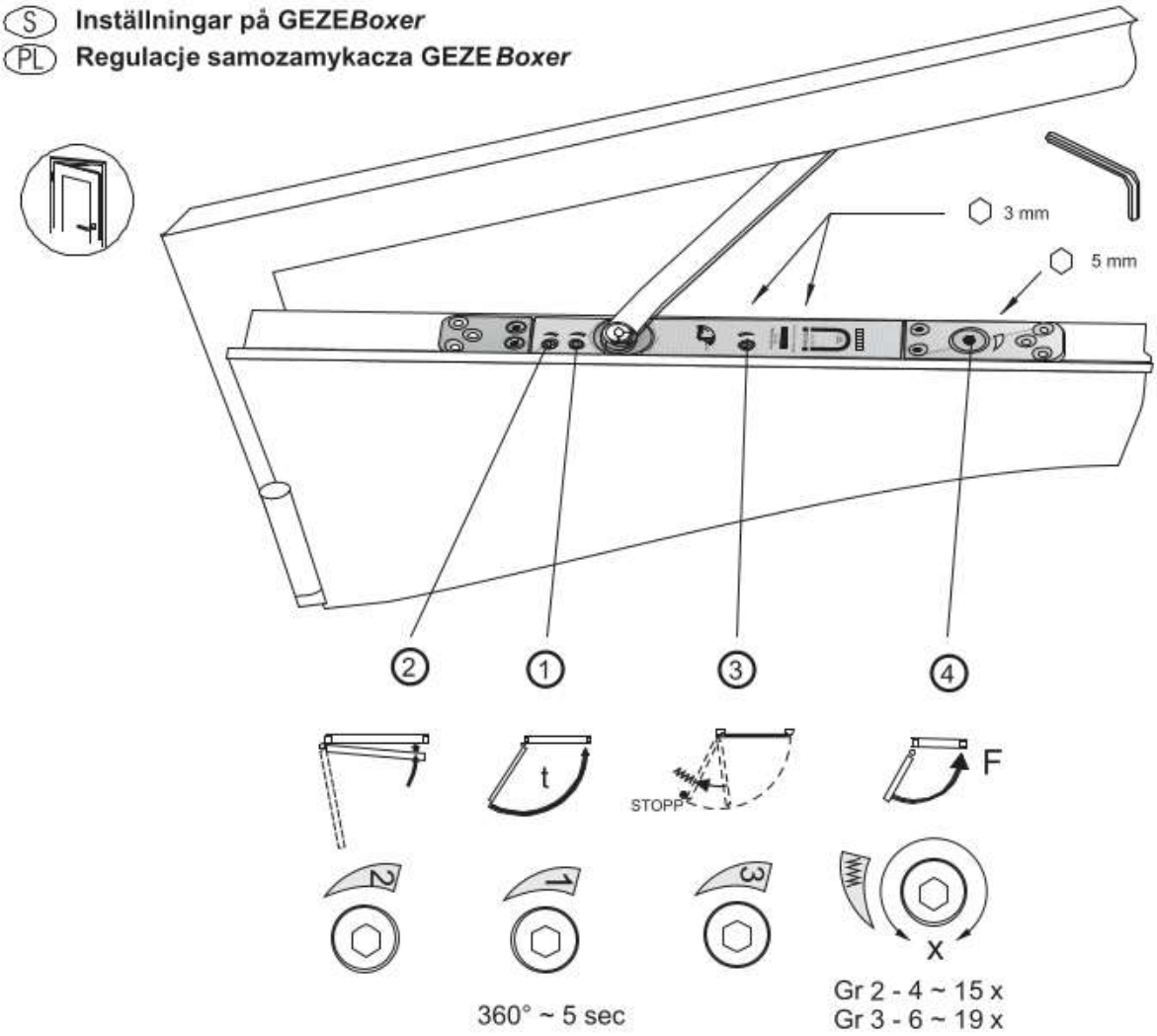
x 95137

(D) **Einstellungen am GEZE*Boxer***
(GB) **Adjustment of GEZE*Boxer***
(F) **Réglages sur le GEZE*Boxer***
(I) **Regolazioni sul GEZE*Boxer***
(NL) **Instellingen op de GEZE*Boxer***
(S) **Inställningar på GEZE*Boxer***
(PL) **Regulacje samozamykacza GEZE *Boxer***



④	①	②	③
(D) Schließkraft	(D) Schließzeit	(D) Endschlag	(D) Öffnungsdämpfung
(GB) Closing force	(GB) Closing time	(GB) Latching action	(GB) Back check
(F) Force de fermeture	(F) Durée de fermeture	(F) À-coup final	(F) Amortissement d'ouverture
(I) Forza di chiusura	(I) Tempo di chiusura	(I) Arresto finale	(I) Ammortizzatore di apertura
(NL) Sluitkracht	(NL) Sluittijd	(NL) Eindslag	(NL) openingsdemping
(S) Stängningskraft	(S) Stängningstid	(S) Tillslagskraft	(S) Öppningsbroms
(PL) Siła zamykania	(PL) Czas zamykania	(PL) Dobicie końcowe	(PL) tlumienie otwierania

(D) **Einstellungen mech. Feststellung**
(GB) **Adjustment of hold-open devise**
(F) **Réglages de l'arrêt mécanique**
(I) **Impostazioni del fermo meccanico**

(NL) **Instellingen van de mechanische vastzeting**
(S) **Ställ in mekanisk uppställning**
(PL) Ustewienia mechaniczną blokadą otwarcia skrzydła

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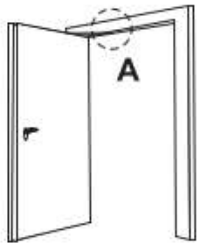

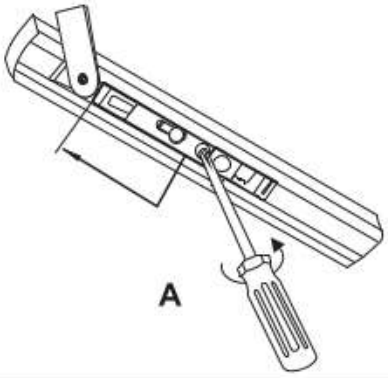

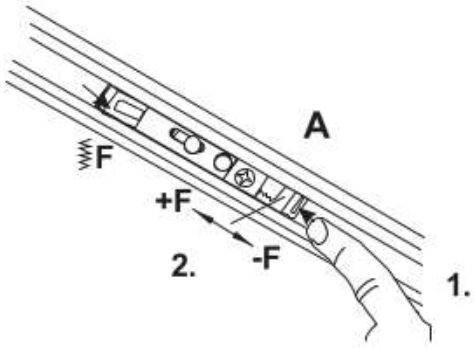

(D) **Stopper setzen (max. 120°)**
(GB) **Setting of the opening limitation (max. 120°)**
(F) **Réglages de la limitation d'ouverture (max. 120°)**
(I) **Regolazioni della limitazione di apertura (max. 120°)**
(NL) **Instellingen van de openingsbegrenzing (max. 120°)**
(S) **Inställnningar av öppningsbegränsaren (max. 120°)**
(PL) **Nastanwianie ograniczania otwarcia (max. 120°)**

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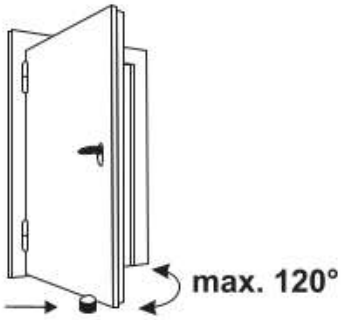

(D) **Wartung**
(GB) **Maintenance**
(F) **Entretien**
(I) **Manutenzione**
(NL) **Onderhoud**
(S) **Underhåll**
(PL) **Konserwacja**

(D) Prüfung aller Befestigungsschrauben auf festen Sitz
(GB) Checking all fastening screws for close fit
(F) Contrôle de la bonne tenue de toutes les vis de fixation
(I) Controllo della tenuta di tutte le viti di fissaggio
(NL) Controle op het goed vastzitten van alle bevestigingsschroeven
(S) Kontrollera att alla fästskruvar är ordentligt fastskruvade
(PL) Sprawdzanie prawidłowości dokręcenia śrub mocujących

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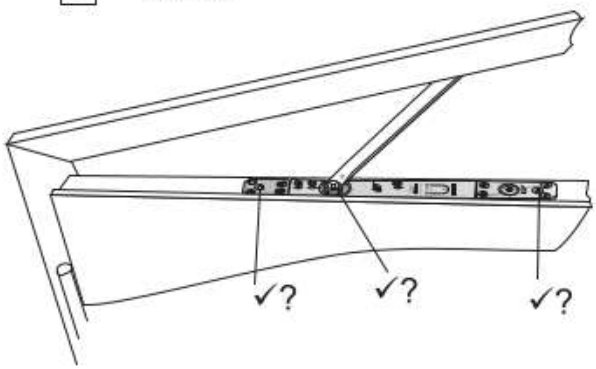

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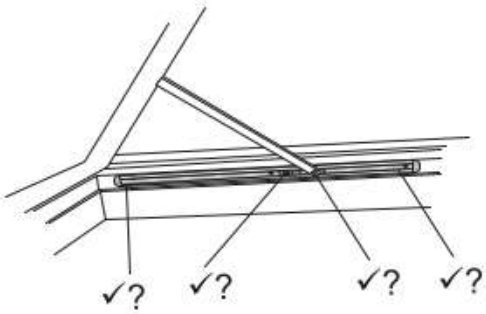

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Der Maßstab DIN ISO 9001 unseres Handelns

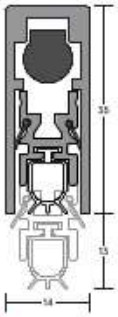
Mat. Nr. 99730 / Änd. St. 01 / / Zeichn. Nr. 20535-9-0950 Printed in Germany - Änderungen vorbehalten

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 handed 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

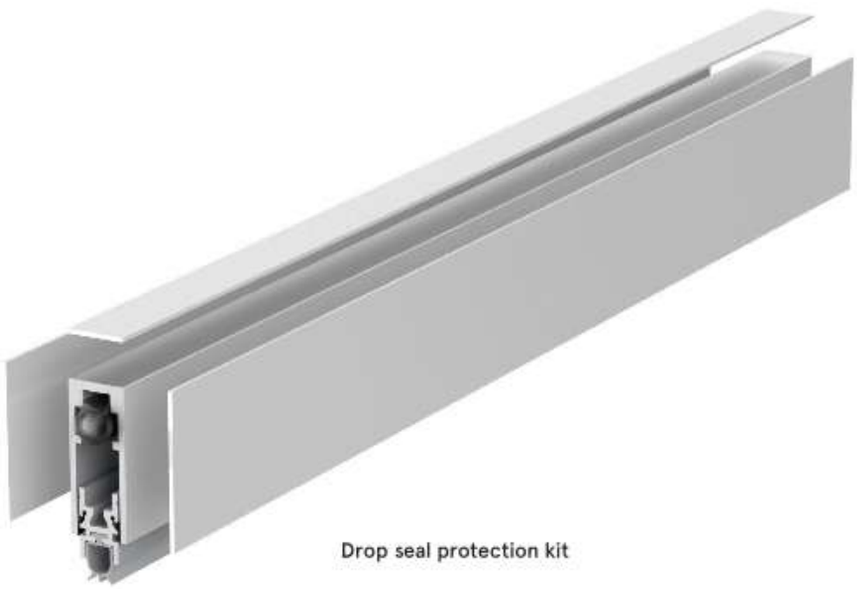
(R27972) (CF5179)

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

DROP SEAL PROTECTION KITS

Lorient provides intumescent protection kits which enable the LAS8001 si drop seal to be fitted in fire resistant door leaves.

These jackets provide fire resistance of 30 minutes or 60 minutes when tested with full size door assemblies and tested in accordance with BS 476-22:1987 and BS EN 1634-1:2014+A1:2018.



Drop seal protection kit

Fire: BS 476-22:1987.
Fire: BS EN 1634-1:2014+A1:2018.

Can provide up to 30 or 60 minutes fire resistance.

Lorient can supply intumescent kits to suit standard lengths of LAS8001 si drop seals.

Mono Ammonium Phosphate (MAP) 1mm / 2mm.
With self-adhesive backing.

LAS8001 si drop seal.

Affix the intumescent kit onto the top and two sides of the drop seal.

Prepare the substrate for receiving intumescent hardware protection by ensuring it is clean from dust and oils. We recommend the use of non-solvent based wipes, wipe with a non-lint cloth to ensure surface is completely dry before application.
Remove self-adhesive backing and dispose of in line with local regulations.
Apply intumescent hardware protection, ensuring any cut outs and relief section are in alignment with hardware detail. Press firmly.

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

www.lorientgulf.ae

LORIENT

PS 0704 S

/ door stop-rebated bubble compression seal

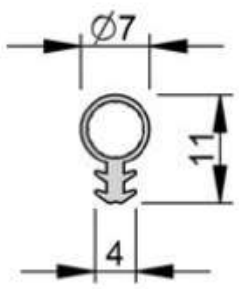
/ large tolerance compensation

/ suitable for sound insulation

/ suitable for smoke sealing

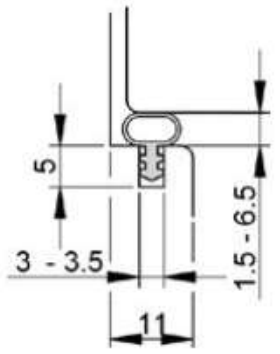
TECHNICAL DATA

Application	timber frame rebates
Gasket material	silicone, self-extinguishing
Working temperature range	-40°C to +180°C



DIMENSIONS

Width x height	7 x 11 mm
Fitting tolerance range	1.5 - 6.5 mm
Standard lengths	100m coil



FIXING

Fixing	into a groove in the door stop

PERFORMANCE & CERTIFICATES

Fire	EN1634-1*

COLORS	ART.NO.
Black	P160057
Brown	P160056
White	P160065
Grey	P160080

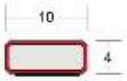
*The test value may differ according to the EN 1634-1 test, as the complete door system must be checked.

athmer oHG / Sophienhammer / 59757 Arnsberg / Germany
T +49 2932 477-500 / info@athmer.de / **athmer.com**

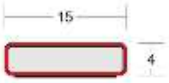
FIRE SEALS

LP1004, LP1504, LP2004, LP2504

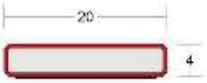
Our intumescent fire door seals offer fire protection where no smoke sealing is required. Combine a fire seal with a Batwing® seal for acoustic + smoke containment. Available in a choice of sizes to cover 30 + 60 minute applications, the fire seal also includes integral antimicrobial protection.



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)

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

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)

Cl/SfB			
		(29)	(k2)
CAW P10 Uniclass JP10:L68114			

Nullifire
Smart Protection

Product Information

Description

FS702 Intumastic is a water-based acrylic sealant which cures to give a firm but flexible fire seal. Suitable for use in various construction joints offering up to 30% movement capability whilst providing an excellent acoustic and air seal.

FS702 is suited for use around non-combustible services, cables, rock fibre insulated non-combustible pipes, using a minimum depth of 25 mm. FS702 has excellent adhesive qualities and can also be used for the bonding and pointing of joints and service penetrations in conjunction with FB750 Intubatt system.

Usage / Purpose

FS702 is suitable for a variety of applications:

- Static & movement linear joints (masonry/flexible wall to masonry/ rigid wall/rigid floor/flexible wall)
- Window & door joints (masonry to timber/steel)
- FB750 to flexible wall/rigid wall/rigid floor
- Cold smoke seal
- Service penetrations sealing: copper & steel pipes, cable bundles / trays / ladders (with and without FI025 Intuflex Insulation Wrap)
- FS702 is also suitable for service movement joints (consult Technical Services).

Traceability & Product Identification

- Nullifire is bringing unique identification technologies to the market, offering architects, specifiers, main contractors, and applicators guaranteed traceability of product on-site. Our traceability technologies are not visible to the naked eye, and do not affect performance or product aesthetics.
- FS702 features Optifire technology, a unique UV technology, activated by exposing the products surface to a UV light source, which offers easy & instant product identification (white colour only).
- FS702 also features Optifire+, a unique pigment technology, visible only with a specific Nullifire detector ; Optifire+ offers lifetime identification, and remains traceable even after a fire.

Colours

White.
Grey is available on request (may be subject to minimum order quantities).

Packaging

Gun Grade:
310 ml cartridges (12 per box/25 per box)
600 ml sausages (12 per box)
400 ml sausages (15 per box)
Trowel Grade: 5 litre bucket

Availability

Direct from Tremco CPG UK Limited (see details on this TDS).

Usage Guidelines

Always read SDS, pre-application guidance and relevant application detail prior to application. Ensure the latest documents are downloaded prior to every project commencement.

Protective Equipment

Use in well ventilated conditions and ensure all recommended protective equipment is worn during handling & use of this product. For full recommendation, refer to safety data sheet.

Necessary Tools

- Sealant caulking gun
- Sealant profiling tool/spatula
- Masking tape (if decorative finish is required to surrounding substrates)

Preparation

- All surfaces must be clean and sound, free from dirt, grease and other contamination.
- Wood, plaster and brick may be damp but not running wet.
- Porous or high gloss surfaces require priming prior to application.
- If a clean line is required on adjoining substrates, masking tape should be used.
- Check specification is suitable for movement, fire rating and gap size required.

FS702

Intumastic Fire Resistant Acrylic Sealant

up to 240 mins

optifire

optifire+

Key Benefits Summary

- **Up to 4 hours fire resistance - Tested to EN 1366-4 and EN 1366-3**
- **Up to 30% movement capability (during fire test)**
- **Suitable for flexible walls and rigid walls & floors**
- **Used for sealing FB750 Intubatt**
- **Acoustics up to 55 dB**
- **Air seal up to 2,000 Pa**
- **Optifire & Optifire+ unique traceability identifiers**

This product is certified to applicable European (EN) standards and UL-EU Mark service requirements. *CERT. N° UL-EU- 01059-CPR*

UL EU

ETA CE
20/1315 Linear Joints
21/0010 Penetrations

UK TA UK CA
22/0062 Linear Joints
22/0064 Penetrations

up to 240 mins

FS702

Intumastic Fire Resistant Acrylic Sealant

Nullifire Smart Protection

Application

- Insert required backing material (refer to performance on backing materials), oversized to joint width to ensure stability, to provide correct depth of seal.
- A light water spray will aid adhesion if a rock mineral fibre backer has been applied.
- Using a sharp knife, cut nozzle of cartridge to bead size and angle required.
- Gun sealant into gap to required depth by applying an even pressure to the trigger.
- Work and tool to a smooth finish immediately with a wet profiling tool or spatula.

Important Information

- Do not use around CPVC pipes ; for this specific application, please use FS719 HP Blue for CPVC.
- If used around Pegler X-Press Carbon Steel pipes, the pipe manufacturer should be consulted, and their recommendations followed.

Coverage

To determine quantity of sealant required, calculate as following example:

$$\frac{\text{Gap Width (mm)} \times \text{Depth (mm)} \times \text{Total Length (m)}}{\text{Volume of Cartridge (ml)}} = \text{N° of cartridges}$$

For further guidance on application methods, and material requirements, please contact Tremco CPG UK Limited Technical Services Department.

Cleaning

Immediately remove all excess sealant and masking tape before cure. Clean tools in warm water. Cured sealant can only be removed mechanically.

Health & Safety Precautions

Safety data sheet must be read and understood before use.

Technical Service

Tremco CPG UK Limited has a team of experienced Technical Sales Representatives who provide assistance in the selection and specification of products. For more detailed information, service and advice, please call Customer Services on 01942 251400.

Guarantee / Warranty

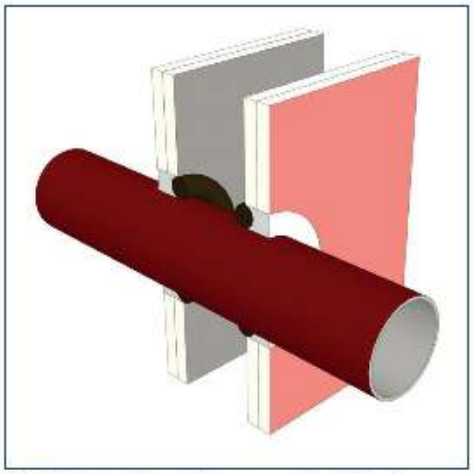
Tremco CPG UK Limited products are manufactured to rigid standards of quality. Any product which has been applied (a) in accordance with Tremco CPG UK Limited written instructions and (b) in any application recommended by Tremco CPG UK Limited, but which is proved to be defective, will be replaced free of charge.

No liability can be accepted for the information provided in this leaflet although it is published in good faith and believed to be correct.

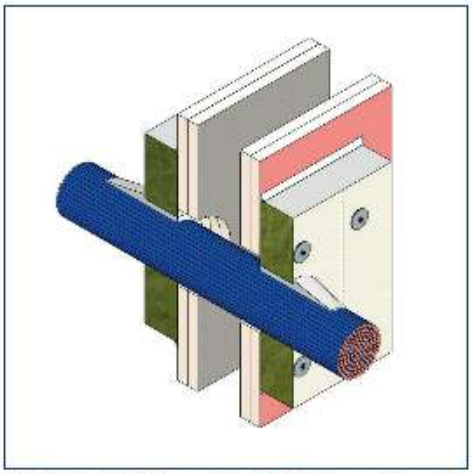
Tremco CPG UK Limited reserves the right to alter product specifications without prior notice, in line with Company policy of continuous development and improvement.

Typical Details

FS702 Intumastic plasterboard to concrete linear gap seal with PE backer rod: EI120



FS702 Intumastic seal for non-combustible pipe penetration through drywall: E120 EI30 (EI120 can be achieved with FI025 Intuflex)



FB750 Intubatt Pattress Fit + FS702 Intumastic seal & bond for cable penetration through drywall: EI120

up to 240 mins

FS702

Intumastic Fire Resistant Acrylic Sealant

Nullifire Smart Protection

Technical information

Property	Test Method	Result
Composition		Water based acrylic sealant
Acoustic Rating	BS EN ISO 10140:2-2010	up to 55 dB
Air Permeability	BS EN ISO 1023:2	Air tight up to 2,000 Pa
Solids Content		78% to 82%
pH Value		8.2 to 9.5
Specific Gravity		1.45 - 1.55
Viscosity		Thixotropic
Shore A Hardness		~ 30
Touch Dry	at 20°C	30 minutes
Cure Rate	at 20°C	1 mm/day
Maximum Continuous Service Temperature		70°C - above this temperature discolouration may occur.
Storage	Store in dry conditions between +5°C and +40°C. Product may be left for short periods (not exceeding 72 hours) at temperatures as low as -5°C. Allow product to defrost for 24 hours at +10°C before use.	
Shelf Life	36 months when stored as recommended in original unopened containers.	

Backing Material

This section relates to the change of material used to back a seal or sealant as part of a sealing system for apertures for penetrations of multiple services and linear joint seals. Backing material may not be omitted unless full fill is achieved.

Backing Material	Effect	Comment
Polyethylene / Polyurethane Rod	= or +	May be replaced by mineral wool
Glass Wool	= or +	May be replaced by stone wool or ceramic wool
Stone Wool	= or +	May be replaced by ceramic wool
Ceramic Wool (including ceramic alternatives)	=	May only be replaced by alternative material of equivalent material properties, i.e. density, thermal conductivity, melting point, shrinking, reaction to fire classification - for example alkaline earth silicate fibres
Increase in backing material depth	+	Acceptable for class A1 and A2 materials.
Decrease in backing material depth	-	Not acceptable.

TREMCO Construction Products Group

Tremco CPG UK Limited
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Wigan WN2 4HT UK

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Email: hello@tremcocpg.com
Tel: +44 (0)1942 251400

2023-08

KLEIBERIT®
KLEBSTOFFE • ADHESIVES

PUR-Adhesive 501

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 501

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

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.