Approved technical description TS-ET-0285 version 02

Certificate No: **TS-ET-0285**

Name and address of the sponsor: **JELD-WEN Suomi Oy, Jyväskyläntie 288 / PL 300, 17201 Vääksy, FINLAND**

Name and address of the producer: **JELD-WEN Suomi Oy, Sammonkatu 4 / PL 1016, FI-71501 Kuopio, FINLAND**

Product: **Fire rated door F-core (F6 and F7)**

Date: **14.05.2021**

1. Source documents

Table 1. Source documents used for preparing this technical documentation.

Item No	Document is prepared / issued by	Document number and date of issue	Sponsor	Remarks (eg reference to the right to use where appropriate)
Reference tests (type tests that are used as the main source of performance classification):				
1	Inspecta Estonia OÜ	Test Report 181-20-0088, 09.11.2020	JELD-WEN Suomi Oy	(Self-closing)
Additional tests (tests that are used to extend the field of application of product type):				
-	-	-	-	-
Other documentation (eg classification reports, extended application reports, declaration of performance):				
1	DBI	Extended Application Report PHB10051A, 27.02.2020	JELD-WEN Suomi Oy	(fire resistance)
2	Inspecta Estonia OÜ	Extended Application Report 181-20-0003, 24.08.2020	JELD-WEN Suomi Oy	(smoke control)
3	Inspecta Estonia OÜ	HA-181-20-0007, 24.08.2020	Inspecta Estonia OÜ	Assessment report (internal document of Inspecta)
4	Inspecta Estonia OÜ	HA-181-21-0002, 14.05.2021	Inspecta Estonia OÜ	Assessment report (internal document of Inspecta)

2. Product specification

2.1 Main dimensions

Table 2. Allowed dimensions of the product.

Detail	min W, mm	max W, mm	min H, mm	max H, mm	max A, m^2
Single leaf					
Single leaf dimensions if smoke control Sa is declared	-	1505	-	3283	3,47
Single leaf dimensions if smoke control S_{200} is declared.	-	1082	-	2360	2,31
Single leaf dimensions if fire resistance EI30 is declared	-	1335	-	2360	2,86

Detail	min W, mm	max W, mm	min H, mm	max H, mm	max A, m^2
Double leaf					
Active leaf dimensions if fire resistance EI30 and/or S_{200} is declared	-	1335	-	2360	2,86
Inactive leaf dimensions if fire resistance EI30 and/or S_{200} is declared	-	1306	-	2360	2,80
Active leaf dimensions if smoke control Sa is declared	-	1857	-	3283	4,28
Inactive leaf dimensions if smoke control Sa is declared	-	1816	-	3283	4,19
Panels					
Glazed side panel dimensions if fire resistance EI30 is declared	-	564	-	2967	1,52
Glazed over panel dimensions if fire resistance EI30 is declared	-	2674	-	564	1,37
Glazed side panel dimensions if smoke control Sa/S_{200} is declared	-	490	-	2580	1,26
Glazed over panel dimensions if smoke control Sa/S_{200} is declared	-	2325	-	490	1,14
Glazing in door leaf					
Glass pane in door leaf if fire resistance EI30 is declared	-	707	-	1874	1,20
Glass pane in door leaf if smoke control Sa/S_{200} is declared	-	615	-	1630	1,00
Thickness of the door leaf	54 mm				
Door leaf maximum weight with hardware	82 kg				
Frame profile	(42/30 x 92) mm				
Threshold	(22 x 92) mm				

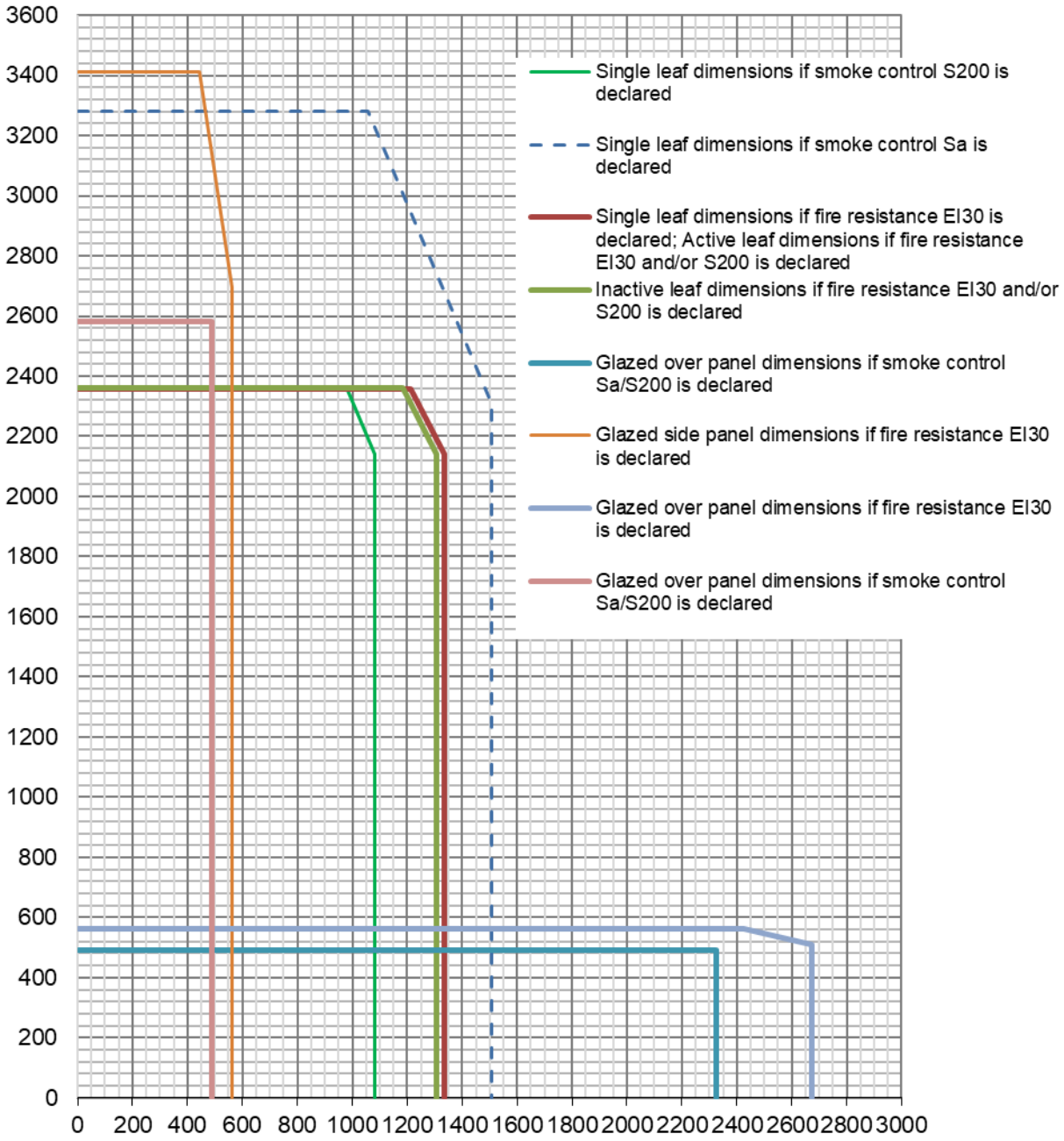

Figure 1. Allowed dimensions presented in graphical form. Dimensions in mm.

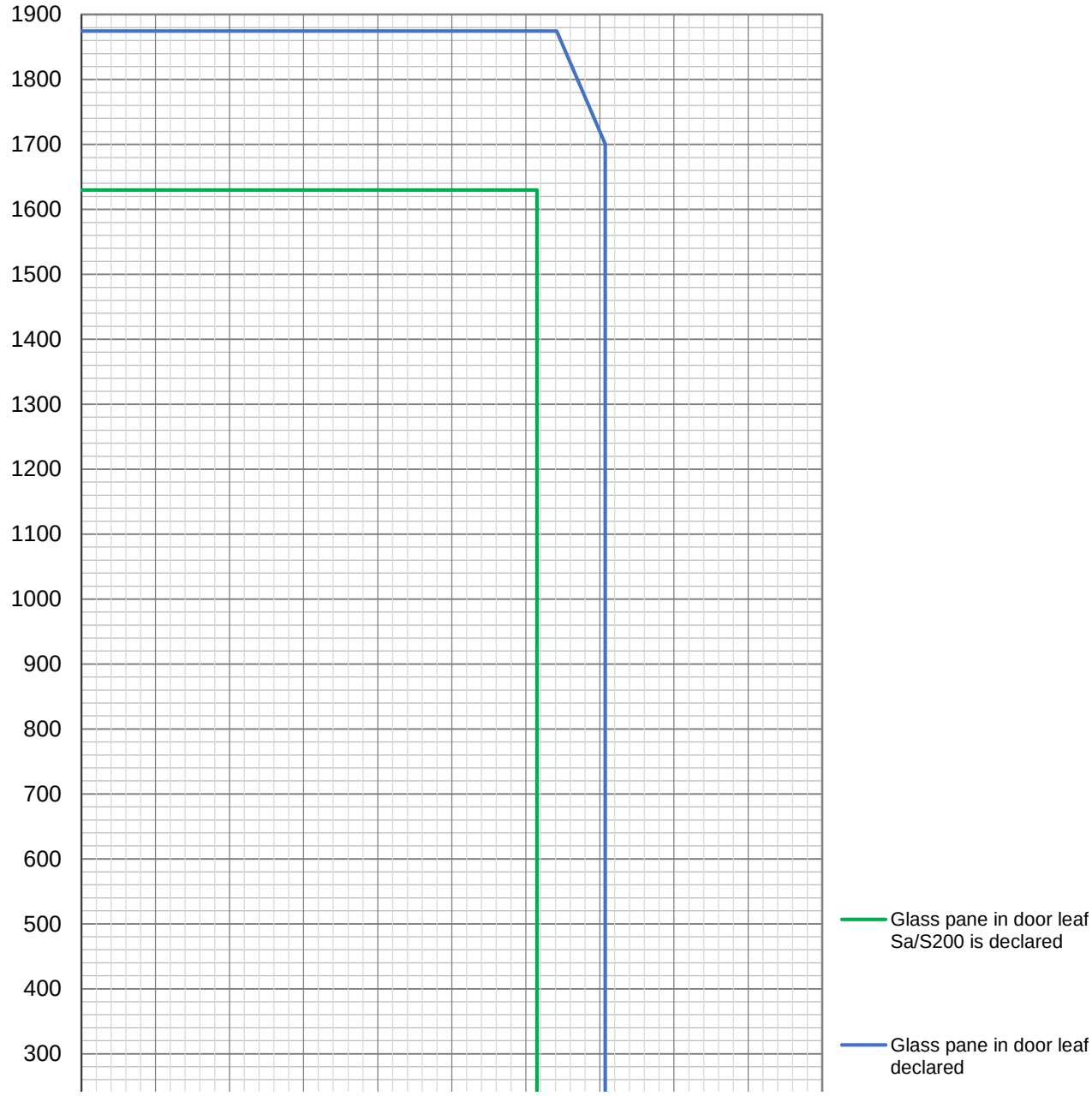

Figure 2. Glass pane allowed dimensions presented in graphical form. Dimensions in mm.

2.2 Materials used in the construction

Table 3. List of components.

Item No	Detail	Material and type	Properties (dimensions, thickness, density etc)	Manufacturer	Declaration of performance No
1	Door frame	Finger-jointed and laminated softwood	Density ≥ 406 kg/m^3 (42/30 x 92) mm	JELD-WEN Eesti AS	-

Item No	Detail	Material and type	Properties (dimensions, thickness, density etc)	Manufacturer	Declaration of performance No
2		Finger-jointed and laminated softwood + hardwood (beech) surface	(42/30 x 92) mm	JELD-WEN Eesti AS	
3	Frame protection[1]	Steel sheet	0,6 mm bended steel sheet (1200 mm from the bottom of the frame).		
4	Frame connection screws	Staples or screws	Q17 BAB x 38 mm (032477) Ø5 x 70 mm. (2 screws in corners)	Essve Balti AS	
5	Threshold	Oak	Density ≥ 700 kg/m^3	JELD-WEN Eesti AS	
6		Schall-Ex L-13/30WS	-	Athmer GmbH.	
7		Planet FT[2]	-	Abloy Oy	
8	Door leaf framework	Finger-jointed softwood	(42,5 x 45) mm (density 400 kg/m^3) Maximum two framing elements.	JELD-WEN Eesti AS	
9	Door leaf core material	Flax fibre board	Density 340 kg/m^3, Thickness 41 mm (F7); 42 mm (F6)	Sanopan	
9a	Structural facings	MF paper PE laminate	0,07 mm, 105 g/m^2	Raniplast Oy	
		Chipboard	Density 700 kg/m^3, thickness 2,8 mm	Koskisen Oy.	
		HDF	Density 900 kg/m^3, thickness 3 mm	Pfleiderer SP	
9b		MF paper PE laminate	0,07 mm, 105 g/m^2	Raniplast Oy	
		Chipboard	Density 700 kg/m^3, thickness 3,0 mm	Koskisen Oy.	
		HDF	Density 900 kg/m^3, thickness 3 mm	Pfleiderer SP	
	Decorative facings	Veneer[3]	Thickness ≤ 3 mm		
		Veneer	Thickness ≤ 1,5 mm		
	Decorative[4] millings		Depth ≤ 1,7 mm Width ≤ 10 mm		
	Internal layers	Laminate	Thickness 0,7 mm, Density 1350 kg/m^3	Formica	
		Metal sheet	Thickness 0,5 mm		

[1] Not allowed for smoke control
[2] Not allowed for smoke control
[3] Not allowed for smoke control
[4] Not allowed for smoke control

Item No	Detail	Material and type	Properties (dimensions, thickness, density etc)	Manufacturer	Declaration of performance No
10	Glue	Prefere 4110 + 5220	140 g/m^2	Dynea AS	
11		KESTOPRESS 2200	110 g/m^2	Kiilto	
12		Technomelt VS731	100-120 g/m2	Henkel AG	
13		Dorus HKP 26		Henkel AG	
14	Edge solution	Smooth Melamine W	Thickness 0,1-0,2 mm	-	
15		L-profile[5]	Steel 0,8 mm (Up to a height of 1187 mm).		
16		PVC	Thickness 1,5-2,0 mm		
17		Hardwood	18 mm, Density 840 kg/m^3		
18	Protective sheet inside	Steel sheet	0,5 mm		
19		Aluminum sheet	≤ 0,5 mm		
20		Laminate	0,7 mm		
21	Door leaf glazing system	Aperture lining	Density 900 kg/m^3, thickness 3 mm	Pfleiderer SP	
22		Staples K150	cc.60 mm		
23		Setting blocks	Density 900 kg/m^3, thickness 4 mm	Pfleiderer SP	
24		Rebate sealant	Firecryl FR	Soudal NV.	
25	Door leaf glazing bead	Hardwood	Density ≥ 700 kg/m^3, (28 x 24) mm		
26	Door leaf glazing bead fastening	Steel screws	(3,5 x 45) mm. cc 200 on horisontal sides and cc 350 mm on vertical sides.		
27	Glazing	Pyrostop 30-10	15 mm	Pilkington	
28	Glazed panel head/jambs	Finger-jointed and laminated softwood	Density ≥ 406 kg/m^3 (42/20 x 92) mm	JELD-WEN Eesti AS	
29	Panel glazing bead	Hardwood	Density ≥ 700 kg/m^3, (31 x 26,5) mm		
30	Panel setting block	Hardwood	Density ≥ 700 kg/m^3, (2 x 15 x 70) mm		
31	Panel rebate sealant		Firecryl FR	Soudal NV.	

[5] Not allowed for smoke control

Item No	Detail	Material and type	Properties (dimensions, thickness, density etc)	Manufacturer	Declaration of performance No
32	Panel glazing bead fastening	Steel screws	(3,5 x 40) mm. cc 150 mm on shorter sides and cc 300 mm on longer sides.	Door leaf glazing bead fastening	
33	Silicone seals	Silicone	Ø10 mm In frame	FinnProfiles Oy	
34		Silicone[6]	Ø7 mm In frame	FinnProfiles Oy	
35		Silicone	Ø8 mm In astragal and door leaf	FinnProfiles Oy	
36		Silicone	Ø7 mm In threshold	FinnProfiles Oy	
37	Intumescent seal	Intumex LSSK	(2,5 x 10) mm	Intumex GmbH.	
38	Flush bolt	Primo 3000	-	Abloy Oy	
39		OLDA 300 HZ	-	Olda Innovation AB	
40	Lock	Abloy LC190	-	Abloy Oy	
20a		Abloy EL 593	-	Abloy Oy	
		ASSA 565	-	ASSA OEM	
		Vingcard Essence	-	ASSA ABLOY	
		Rollock W212	-	Rollock Oy	
41	Strike plate	4691	-	Abloy Oy	
42		LP731	-	Abloy Oy	
43		S212 and ICU	-		
44	Handle	Primo ZN01	-	Abloy Oy	
45		Forum 4/007 Cr	-	Abloy Oy	
46	Hinge	NTR110x30TMR KSS-CE	Down from rom top of door leaf 250+250+1290 mm.	Abloy Oy	
47		NTR 110x30T		Abloy Oy	
48		VX-StarTec 924.15.403	Down from top of door leaf 244+1443 mm	Häfele GmbH & Co	
49	Door closer	DC335	-	Abloy Oy	
50		TS83	-	Dorma	
51		TS86	-	Dorma	
52		TS 4000	-	Geze	
53	Lead cover	LP 281/EA 281	-	Abloy Oy	
54	Doorbell	DF64	-	Abloy Oy	
55	Letterbox	Primo 31[7]	Distance from door leaf lower edge 710 mm.	Abloy Oy	
56	Door viewer	Beslagia 15 mm	-	Beslagia	

[6] Not allowed for smoke control
[7] Not allowed for smoke control

Item No	Detail	Material and type	Properties (dimensions, thickness, density etc)	Manufacturer	Declaration of performance No
57	Door sensor	EA501 – EA503	-	Abloy Oy	
58	Finger safe	MK1A PVC-U 2030 mm White	-	Fingersafe	
59		MK1B PVC-U 2030 mm White	-	Fingersafe	

2.3 Installation conditions

Table 4. Installation conditions of the product.

Supporting constructions	Fixings	Installation gaps and sealing
Standard rigid supporting construction ≥ 575 kg/m^3 thickness ≥ 100 mm	Fixings: ≥ steel screws Ø6 x 90 mm. Appropriate to the actual construction.	Installation gap ≤ 20 mm shall be sealed with compressed stone wool or fire rated foam ≤ 15 mm shall be sealed with fire rated foam[8]
Standard flexible supporting construction thickness ≥ dept of door frame[9] thickness ≥ 125 mm	Fixing points according to actual product.	

2.4 Gaps

Table 5. Maximum allowed primary gaps.

Maximum allowed gap	Single leaf door if fire resistance is declared	Single leaf door if smoke control is declared	Double leaf door if fire resistance is declared	Double leaf door if smoke control is declared
Hinge side (active)	4,7 mm	3,9 mm	5,3 mm	3,4 mm
Hinge side (inactive)	-	-	5,3 mm	5,5 mm
Lock side	3,1 mm	3,7 mm	3,3 mm	2,9 mm
Upper edge	3,5 mm	1,7 mm	5,0 mm	4,2 mm
Lower edge	6,6 mm	2,0 mm	7,6 mm	3,1 mm

2.5 Construction

Drawings of the product are presented in Extended application report PHB10051A, Extended application report EXA-181-20-0003.

[8] Only for smoke control
[9] Not allowed for smoke control

3. Essential characteristics and performance

Classification according to EN 13501-2:2016:

Single leaf door set **$EI_2$30 - Sa/S_{200} – C5**[10]

Double leaf door set **$EI_2$30 - Sa/S_{200}**

Table 6. Essential characteristics and performance.

Essential characteristics	Performance								
Resistance to fire	E15	E20	E30	E45	E60	E90	E120	E180	E240
	$EI_1$15	$EI_1$20	$EI_1$30	$EI_1$45	$EI_1$60	$EI_1$90	$EI_1$120	$EI_1$180	$EI_1$240
	$EI_2$15	$EI_2$20	$EI_2$30	$EI_2$45	$EI_2$60	$EI_2$90	$EI_2$120	$EI_2$180	$EI_2$240
	-	EW20	EW30	-	EW60	EW90	EW120	-	-
Smoke control	S_a				S_{200}				
Self closing	C0	C1		C2	C3		C4	C5	

4. Field of application

Table 7. Field of application of the product.

Defined field of application	
if fire resistance is declared	**if smoke control is declared**
The thickness of the door leaf shall not be reduced but may be increased provided the total weight with hardware in not more than 82 kg.	The thickness of the door leaf shall not be reduced but may be increased.
The mode of operation shall not be changed.	
Distance between fixings may be decreased. Increase in distance is allowed only pro rata with the increase of door dimension.	Distance between fixings can be decreased and increased.
The type of glass and the edge fixing technique, including type and number of fixings per metre of perimeter, shall not be changed from those tested.	For Sa possible to change of manufacturer and/or glass type. For S_{200} possible if the glass is fire resistant or will not fracture at temperatures less than 200 ºC.
The number of glazed apertures cannot be increased.	Possible for Sa to increase the number of glazed apertures providing the air leakage rate is calculated proportionately. Not possible for S_{200} to increase the number of glazed apertures.
Doorset may be produced with glazing or without glazing.	
The minimum permitted distance between the edge of glazing and the vertical edge of the door leaf is 155 mm. The minimum permitted distance between the edge of glazing and the horizontal edge of leaf is 200,5 mm.	For Sa the the distance can be decreased. For S_{200} the minimum permitted distance between the edge of glazing and the vertical edge of the door leaf is 155 mm. The minimum permitted distance between the edge of glazing and the horizontal edge of leaf is 200,5 mm.
The door leaf and the door frame may be painted.	

[10] Only valid for single leaf door with max leaf dimensions (941 x 2052) mm, max weight 67,5 kg, Lock Abloy LC 190 + strike plate 4691, door closer Abloy DC335.

Defined field of application	
if fire resistance is declared	**if smoke control is declared**
Protective plates Thickness ≤ 1 mm, 1,4 m^2 or up to 56% of leaf area. Thickness ≤ 2 mm 1,0 m^2 or up to 40% leaf area. If fixed by screws 200 mm width x leaf height or 500 mm height x door leaf width.	Possible for Sa to add protective plates. Possible for S_{200} providing no thicker than 1,5 mm or, if thicker than 1,5 mm, limited to one piece up to 800 mm from the base of the leaf or limited to maximum two pieces per face at 250 mm in width or height and providing the sealing system is unaffected.
Timber based mouldings can be allowed to the face of the leaf, provided that the surface of the leaf is not covered by more than 25% and the weight of the leaf is not increased by more than 25%.	Mouldings can be added.
Decorative facings of reaction to fire classification B-F, or metals with melting points below 660 °C, with a thickness up to 3 mm for timber veneer or 2 mm for other materials including laminates may be added to the faces of the door leaf.	Possible to add laminates and veneers up to 1,5 mm thick.
Minimum two hinges for each door leaf must be used, depended on door leaf size and weight. The number of hinges may be increased but not decreased. The distance between top hinge and top of door leaf may be decreased but not increased. The distance between bottom hinge and bottom of door leaf may be decreased but not increased. Intermediate hinges can be positioned without limitations.	For Sa the distance between hinge and door leaf edge may be decreased/increased. For S_{200} doors subject to a maximum variation by 100 mm.
It is possible to change lock/strike position ± 200 mm.	
It is possible to change lock/strike position to a position of up to 300 mm higher than tested position in line with an increase in door leaf height	-
The door must be installed with threshold or the gap between door leaf and floor is maximum 6 mm, and 2,5 x 10 mm Intumex LSSK is positioned in the bottom of the door leaf, and the flooring is non-combustible (at least A2-fl, s1) or a metal plate with at least the width of the door leaf is positioned beneath the door leaf.	The doors can be installed without threshold in case of Sa. The door must be installed with threshold in case of S_{200}.

5. Marking of the product

Information about marking of the product is available on www.kiwa.com/ee.

6. Summary

Summary of this technical description (including summarized specification, performance and field of application of the product) is presented in annex Z