KAS QUALITY SERVICE

TL-827

KAS Quality Service (Guangzhou) Co., Ltd.
Lab: Chenziwei, Xinsha Village Committee, Muzhou Town, Xinhui District, Jiangmen, Guangdong 529143, China.

Report Number: J250227002-1

EN 1634-1:2014/A1:2018

Fire Resistance Test for Doorset

A report to:
Shenzhen YLI Electric Lock Co., Ltd.

Issue Date:	Jul 4, 2025
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1. SUMMARY

Product: Fire rate building hardwares

Manufactured by: GUANGDONG ENLONG SECURITY GATED CO., LTD.

Model: Magnetic Lock: YM-750N(LED), YM-750ND(LED)
Electric Strike: YS-621-S(SS304), YS-622N-S(SS304)
Push Bar Device: YED-641(SS)/650mm, YED-641(SS)/880mm, YED-642(SS)
Door Loop: DLK-402-SS, DLK-402L-SS
Electromagnetic Door Holder: YD-605, YD-611-EX

The performance of the specimens was judged against the criteria for integrity and insulation, as required by EN 1634-1:2014/A1:2018, and the results obtained were as follows:

		Doorset A	Doorset B
Integrity (E)	Sustained flaming	196 min no failure	196 min no failure
	Gap gauge	196 min no failure	196 min no failure
	Cotton pad	Not evaluation	Not evaluation
Insulation (I_2)	Door leaf	21 min	19 min
	Door frame	110 min	86 min

The test was discontinued after a period of 196 minutes at request of the sponsor.

2. SIGNATURES

Test performed by:

Singh Zhang

Name: Singh Zhang
Date: 4-Jul-25
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Report authorised by:

Credy Chen

Name: Credy Chen
Date: 4-Jul-25
Title: Technical Manager
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3. CONTENTS

4. TEST DETAILS

Applicant Information	
Applicant Name:	Shenzhen YLI Electric Lock Co., Ltd.
Applicant Address:	Room 1605, Block A, Haisong Building, Tairan 9th Road, Futian District, Shenzhen

Sample Information	
Product:	Fire rate building hardwares
Trade Mark:	YLI
Model and/or type reference:	Magnetic Lock: YM-750N(LED), YM-750ND(LED) Electric Strike: YS-621-S(SS304), YS-622N-S(SS304) Push Bar Device: YED-641(SS)/650mm, YED-641(SS)/880mm, YED-642(SS) Door Loop: DLK-402-SS, DLK-402L-SS Electromagnetic Door Holder: YD-605, YD-611-EX
Manufacturer:	GUANGDONG ENLONG SECURITY GATED CO., LTD.
Manufacturer Address:	Building 3, No. 153, Industry 4th Road, Encheng Street, Enping City, Jiangmen City, Guangdong Province, China
Sample ID:	S250227002-01~11
Date of receipt of test samples:	2025/2/27
Situation of receipt samples:	Good

Testing Information	
Standard:	EN 1634-1:2014/A1:2018 & EN 1363-1:2020
Non-standard method or requirement:	/
Testing Laboratory name:	KAS Quality Service (Guangzhou) Co., Ltd.
Address:	Chenziwei, Xinsha Village Committee, Muzhou Town, Xinhui District, Jiangmen, Guangdong 529143, China.
Date (s) of performance of tests:	2025/6/3
Other reports to be used in conjunction with this report:	/

5. TEST OBJECTIVE

The test was conducted in accordance with EN 1634-1: 2014/A1: 2018 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware Part 1: Fire resistance test for door and shutter assemblies and openable windows, to determine 180 minutes fire resistance performance of 1 set of single leaf steel doorset & 1 set of double leaves steel doorset, which incorporated various items of building hardware.

The test utilized the general principles for fire resistance testing given in EN 1363-1: 2020 Fire resistance tests Part 1: General Requirements.

6. TEST SPECIMEN

Specimens were submitted to KAS directly from the sponsor. Specimens were not independent selected to test. Specimens were received at KAS on 2025/2/27.

The test specimens were built into a masonry wall support system according to manufacturer's instruction by KAS. The test constructions were shown in Appendix A, Figure A.1 & A.2. View from unexposed side, the left test doorset A and the right test doorset B opened away the heating conditions of test.

6.1 Single leaf steel doorset A:

The single leaf steel doorset had overall nominal dimensions of 2100 mm high x 800 mm wide x 110 mm thick. The doorset incorporated a single door leaf of overall dimensions 2050 mm high x 713 mm wide x 52 mm thick, which comprised of 20 mm thick mineral wool as door core and sandwiched by 0.8 mm thick galvanized steel plate on both sides. The stiffeners of the door leaf were comprised of 8 nos. of 30 x 50 x 2.5 mm thick galvanized steel square tube.

The door leaf was provided with a Push Bar Device 'YLI / YED-641(SS)/650mm', installed on the push side of the doorset and featuring a lever handle on the other side.

During the fire test, the push bar was latched in combination with the Electric Strike 'YLI / YS-621-S(SS304)' which was configured for Power to Safe mode.

The Magnetic Lock 'YLI / YM-750N(LED)' was surface mounted on the upper position of the pull side of the doorset, whilst the armature plate of the Electromagnetic Door Holder 'YLI / YD-605' was surface mounted on the lower position of the same side.

A Door Loop 'YLI / DLK-402-SS' was embedded in the door frame, and all of the above mentioned hardware components were not powered during the fire test.

The test doorset was built into a specimen support system according to manufacturer's instruction by KAS. The test construction was shown in Appendix A, Figure A.1. The doorset was opening away from the heating conditions of test.

Table 1a Specimens description

Refer to Figure B.1, B.7~B.11, unless stated otherwise, all values are nominal, and all information in Table 1a is supplied by the client.

Door Leaf	Type	Fire resistance steel single door	
Door Leaf	Nominal Size	713 mm x 2050 mm x 52 mm	
	Facing	Material:	Galvanized steel plate
		Thickness:	0.8 mm
	Core	Material:	Glass fiber cotton (100kg/m^2)
	Stiffeners	Material:	Galvanized steel plate
		Size:	30 x 50 mm
		Thickness:	2.5 mm
Door Frame	Material:	1.2 mm Galvanized steel	

	Rebate:	20 mm	
	Nominal Size:	2100 mm x 800 mm x 110 mm *	
	Hinge	Model:	SS002
		Material:	SS304
		Number:	4 pcs *
		Size:	4" x 4" x 3 mm
	Magnetic Lock	Brand:	YLI
		Model:	YM-750N(LED)
		Size:	280 x 83.6 x 47.1 mm
		Material:	E66 Silicon Steel Sheet & Aluminum
	Push Bar Device	Brand:	YLI
		Model:	YED-641(SS)/650mm
		Material:	SS304
		Size:	Touch bar length: 450 mm
	Electric Strike	Brand:	YLI
		Model:	YS-621-S(SS304)
		Material:	SS304
		Size:	234 x 46.5 x 29.8 mm
	Electromagnetic Door Holder	Brand:	YLI
		Model:	YD-605
		Material:	Steel
		Size:	Part 1: 65 x 65 x 41 mm Part 2: 118 x 93 x 110 mm
	Door Loop	Brand:	YLI
		Model:	DLK-402-SS
		Material:	SS304
		Size:	300 x 24 x 15.5 mm

6.2 Double leaves steel doorset B:

The double leaves steel doorset had overall nominal dimensions of 2100 mm high x 2000 mm wide x 110 mm thick. The doorset was comprised of double door leaf which active and inactive leaf sized of 2050 mm (W) x 955 mm (H) x 52 mm (T), which comprised of 20 mm thick mineral wool as door core and sandwiched by 0.8 mm thick galvanized steel plate on both sides. The stiffeners of each door leaf were comprised of 8 nos. of 30 x 50 x 2.5 mm thick galvanized steel square tube.

The active door leaf was provided with a Push Bar Device 'YLI / YED-641(SS)/880mm', installed on the push side of the doorset and featuring a lever handle on the other side.

The inactive door leaf was provided with a Push Bar Device 'YLI / YED-642(SS)', installed on the push side of the doorset.

During the fire test, the push bar of active door leaf was latched in combination with the Electric Strike 'YLI / YS-622N-S(SS304)' which was configured for Power to Safe mode, whilst the push bar of inactive door leaf was bolted.

The Magnetic Lock 'YLI / YM-750ND(LED)' was surface mounted on the upper position of the pull side of the doorset, whilst the armature plate of the Electromagnetic Door Holder 'YLI / YD-611-EX' was surface

mounted on the lower position of the same side of the active door leaf.

A Door Loop 'YLI / DLK-402L-SS' was embedded in the door frame near the inactive door leaf of the doorset, and all of the above mentioned hardware components were not powered during the fire test.

The test doorset was built into a specimen support system according to manufacturer's instruction by KAS. The test construction was shown in Appendix A, Figure A.1. The doorset was opening away from the heating conditions of test.

Table 1b Specimens description

Refer to Figure B.12, B.13, B.2~B.6, unless stated otherwise, all values are nominal, and all information in Table 1b is supplied by the client.

Door Leaf	Type	Fire resistance steel double door	
Door Leaf	Nominal Size	2050 mm x 955 mm x 52 mm	
	Facing	Material:	Galvanized steel plate
		Thickness:	0.8 mm
	Core	Material:	Glass fiber cotton (100kg/m^2)
	Stiffeners	Material:	Galvanized steel plate
		Size:	30 x 50 mm
		Thickness:	2.5 mm
Door Frame	Material:	1.2 mm Galvanized steel	
	Rebate:	20 mm	
	Nominal Size:	2100 mm x 2000 mm x 110 mm *	
	Hinge	Model:	SS002
		Material:	SS304
		Number:	4 pcs each leaf
		Size:	4" x 4" x 3 mm
	Magnetic Lock	Brand:	YLI
		Model:	YM-750ND(LED)
		Size:	560 x 83.6 x 47.1 mm
		Material:	E66 Silicon Steel Sheet & Aluminum
	Push Bar Device 1	Brand:	YLI
		Model:	YED-641(SS)/880mm
		Material:	SS304
		Size:	Touch bar length: 600 mm
		Location:	Push side of active door leaf
	Push Bar Device 2	Brand:	YLI
		Model:	YED-642(SS)
		Material:	SS304
		Size:	Touch bar length: 600 mm
		Location:	Push side of inactive door leaf
	Electric Strike	Brand:	YLI
		Model:	YS-622N-S(SS304)
		Material:	SS304
		Size:	153.1 x 49 x 43 mm

	Electromagnetic Door Holder	Brand:	YLI
		Model:	YD-611-EX
		Material:	Steel
		Size:	Part 1: 75 x 75 x 41 mm Part 2: 75 x 75 x 39 mm
	Door Loop	Brand:	YLI
		Model:	DLK-402L-SS
		Material:	SS304
		Size:	518 x 24 x 15.5 mm

Specimen Supporting Construction

1. Masonry Wall		
Density	:	1980 kg/m^3
Thickness	:	200 mm
2. Mortar		
Material	:	Cement: Sand
Mix Ratio	:	1:4

* Verified by the laboratory before the test;

Measured by the test laboratory.

After installation, the specimens were stored in the test laboratory. Throughout this period of the storage, both the temperature and relative humidity of laboratory were measured and recorded as being within a range of from 28.0 °C to 30.0°C and 60% to 70% respectively.

7. TEST EQUIPMENT AND PROCEDURE

The test was conducted in accordance with the procedure specified in EN 1634-1: 2014/A1: 2018. The ambient temperature of the area was measured and recorded at comment of test. The test data were shown in Table 4.

7.1 Furnace Temperature Control

The furnace opening size is 3.4 x 3.4 m. 9 mineral insulated thermocouples, which were distributed uniformly in the furnace and were kept at 100 ± 50 mm away from the exposed surface of test specimen, were provided to monitor the mean temperature of the furnace.

The mean temperature of the furnace was controlled as close as the standard temperature/time curve specified in Clause 5.1 of EN 1363-1:2020.

The locations and reference numbers of the furnace thermocouples were shown in Figure 1.

7.2 Furnace Pressure Control

Two pressure sensors were provided to monitor and control the furnace pressure after the first five minutes of testing the furnace atmospheric pressure so that it complied with the requirements of Clause 5.2 of EN 1363-1:2020. The pressure condition was assumed a linear pressure gradient of 8.5 Pa per 1 m and a neutral pressure axis at a height of approximately 0.5 m above the notional floor. The pressure at the top of test specimen was controlled within 20 Pa.

The locations and reference numbers of the pressure sensor were shown in Figure 1.

7.3 Unexposed Surface Temperature Monitoring

The unexposed face temperature of the specimen was monitored by thermocouples as follows:

Doorset A:

Thermocouples 1 to 5:	At five positions on the unexposed face of the door leaf, one approximately at the centre and one at the approximate centre of each quarter section of specimen
Thermocouples 6 to 9:	At four positions on the unexposed face of the door leaf, two approximately at 100 mm from the door leaf top corner and two at mid height.
Thermocouples 10 to 13:	At four positions on the unexposed face of the door frame, two positioned at approximated 50 mm from each vertical edge of top frame, and two at mid-height of vertical frames.

Doorset B:

Thermocouples 14 to 18:	At five positions on the unexposed face of the door leaf, one approximately at the centre and one at the approximate centre of each quarter section of specimen
Thermocouples 19 to 25:	At seven positions on the unexposed face of the door leaf, four approximately at 100 mm from the door leaf top corner and three at mid height.
Thermocouples 26 to 30:	At five positions on the unexposed face of the door frame, three positioned at approximated 50 mm from each vertical edge of top frame, and two at mid-height of vertical frames.

The locations and reference numbers of various unexposed surface thermocouples were shown in Figure 4.

A roving thermocouple was provided to measure temperature on the unexposed surface of the specimen at any position that might appear to be hotter than the temperatures indicated by the fixed thermocouples.

7.4 Integrity Monitoring

Cotton pads and gap gauges were available to evaluate the impermeability of specimen to hot gases. The occurrence of sustained flaming more than 10 s on the unexposed face was also checked to determine compliance with the integrity criterion.

7.5 Deflection of specimen

The horizontal deflection at recommended positions of the specimen was measured throughout the test by means of a straight steel ruler paralleled to the unexposed face via a taut fine steel wire. Recommended

positions for measuring deflection were shown in Figure 3.

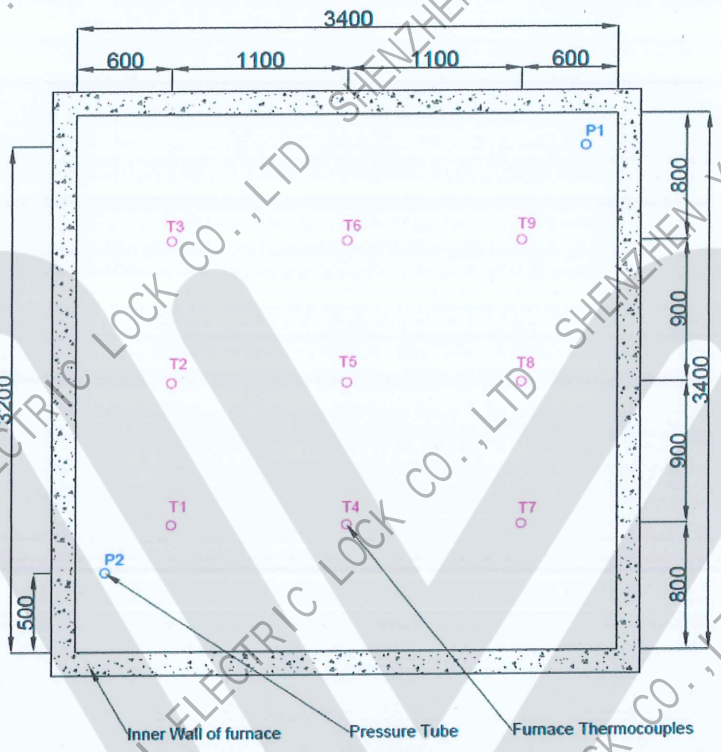


Figure 1 Location of Furnace Thermocouples and Pressure Sensors

8. TEST RESULT

8.1 Pre-test examination and preparation

8.1.1 Gap measurements

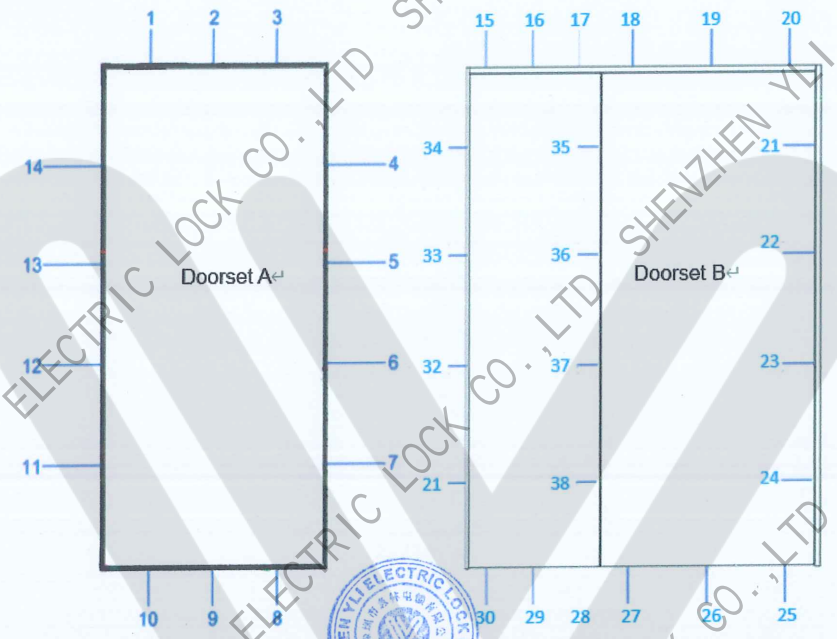


Figure 2 Initial Clearance Measurement Positions (View from unexposed side)

Initial Clearances at positions													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2.5	2.6	2.8	3.8	3.5	3.0	3.5	0.8	1.0	1.1	5.7	3.6	3.2	3.1
15	16	17	18	19	20	21	22	23	24	25	26	27	28
3.0	3.2	3.2	2.3	2.6	2.4	2.6	2.3	2.0	2.1	2.5	1.0	3.0	3.4
29	30	31	32	33	34	35	36	37	38	/			
2.6	3.5	2.0	2.4	2.3	2.5	3.3	4.0	4.0	5.5				

All dimensions are in mm.

8.2 Observations

Observations made during the test are given in Table 3 and unless stated were the unexposed face.

Table 3 Observations

Time mm: ss	Observations
0:00	The test commences.
2:18	Smoke released from the top of the doorsets.
9:14	The doorsets began to deform away from the furnace.
14:21	Slight smoke released from each edge of doorsets; The intumescent seal on the meeting edge of the doorset B was swollen by heat.
17:14	The meeting edge of doorset B began to turn black.
20:00	**The maximum temperature rise more than 180 ℃ measured by thermocouple T21 applied on the unexposed side of inactive door leaf of doorset B;** **Insulation failure of doorset B had occurred.**
22:00	**The mean temperature rise more than 140 ℃ measured by thermocouple T1 to T5 applied on the unexposed side of door leaf of doorset A;** **Insulation failure of doorset A had occurred.**
25:05	Smoke release increased.
29:06	Each edge of doorsets began to turn black.
43:23	The area near the skeletons of each doorset began to turn black.
87:19	The door leaves of doorsets began to turn black.
196:25	No integrity failure had occurred of doorset A&B. The test was terminated after a period of 196 minutes at request of the sponsor.

8.3 Deflection

The horizontal deflection at recommended positions of the specimen was measured during the test. Recommended positions for measuring deflection were shown in Figure 3. And the test data was shown in below tables.

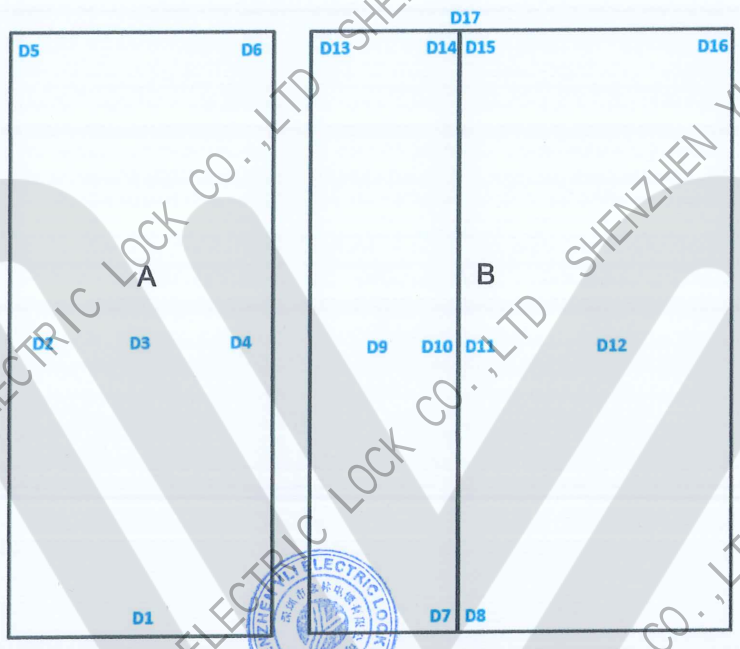


Figure 3 Positions for measuring horizontal deflection (View from unexposed side)

Time	Deflection at positions (mm)					
Minutes	D1	D2	D3	D4	D5	D6
0	0	0	0	0	0	0
20	4	4	10	10	2	9
40	1	9	6	11	-1	10
60	1	8	5	11	-3	13
80	0	9	7	11	1	17
100	-1	9	10	15	1	23
120	0	9	10	26	2	25

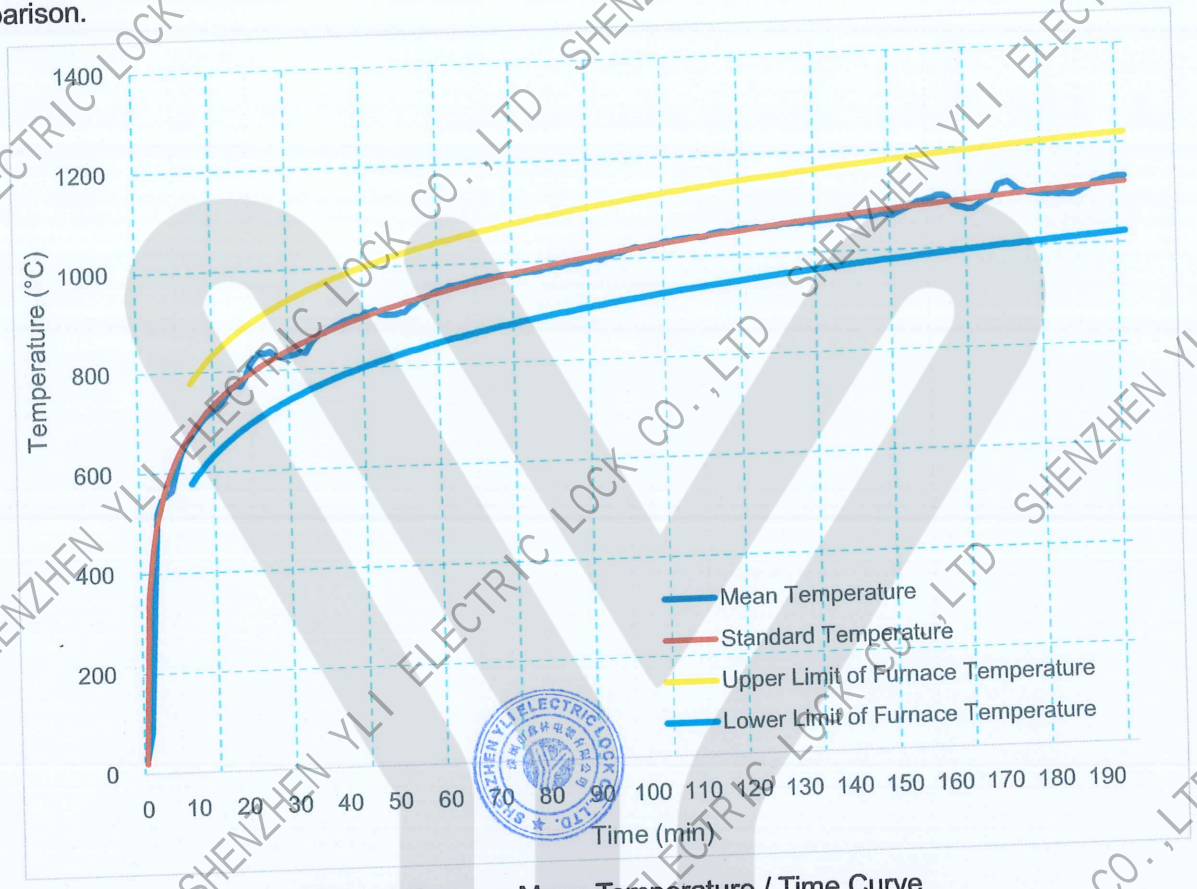
Time	Deflection at positions (mm)										
Minutes	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17
0	0	0	0	0	0	0	0	0	0	0	0
20	0	1	9	31	32	11	10	6	7	-1	11
40	-2	-5	22	35	42	10	8	14	11	-3	16
60	-3	-7	25	41	46	14	12	18	18	-1	19
80	-4	-5	26	47	56	14	19	21	19	-2	27
100	-1	-5	29	81	62	26	21	23	22	-5	32
120	-1	-5	29	84	65	27	22	26	23	-8	30

Positive deflections indicate movement towards to the heat condition.

8.4 Temperature Recorded

8.4.1 Furnace temperature

The mean furnace temperature recorded was plotted against time in Graph 1 with the specified curve for comparison.



Graph 1 Furnace Mean Temperature / Time Curve

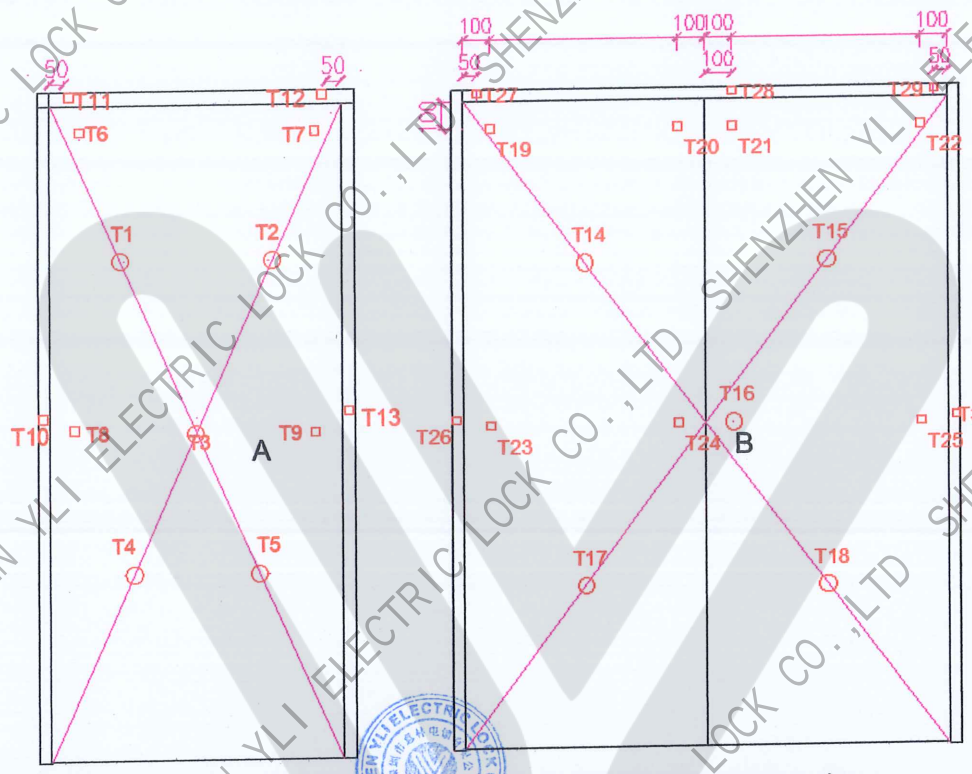
The mean furnace temperature and standard temperature was recorded in Table 4 for comparison.

Table 4 Furnace mean temperature and standard temperature (Unit: °C)

Time Min	Mean Temperature	Standard Temperature	Diff%	Ambient Temperature
0	28.8	20.0	/	28.0
15	728.0	738.6	5.3	28.5
30	828.6	841.8	0.5	29.0
45	909.4	902.3	0.1	29.4
60	949.1	945.3	0.0	29.8
75	975.1	978.7	-0.1	30.4
90	998.5	1006.0	-0.2	30.6
105	1031.9	1029.1	-0.2	30.5
120	1051.2	1049.0	-1.0	30.8
135	1062.7	1066.7	-1.1	31.1
150	1069.6	1082.4	-1.0	31.4
165	1077.7	1096.7	-1.0	31.0
180	1102.3	1109.7	-0.9	31.1
196	1133.2	1122.5	-0.8	31.5

8.4.2 Unexposed face temperatures

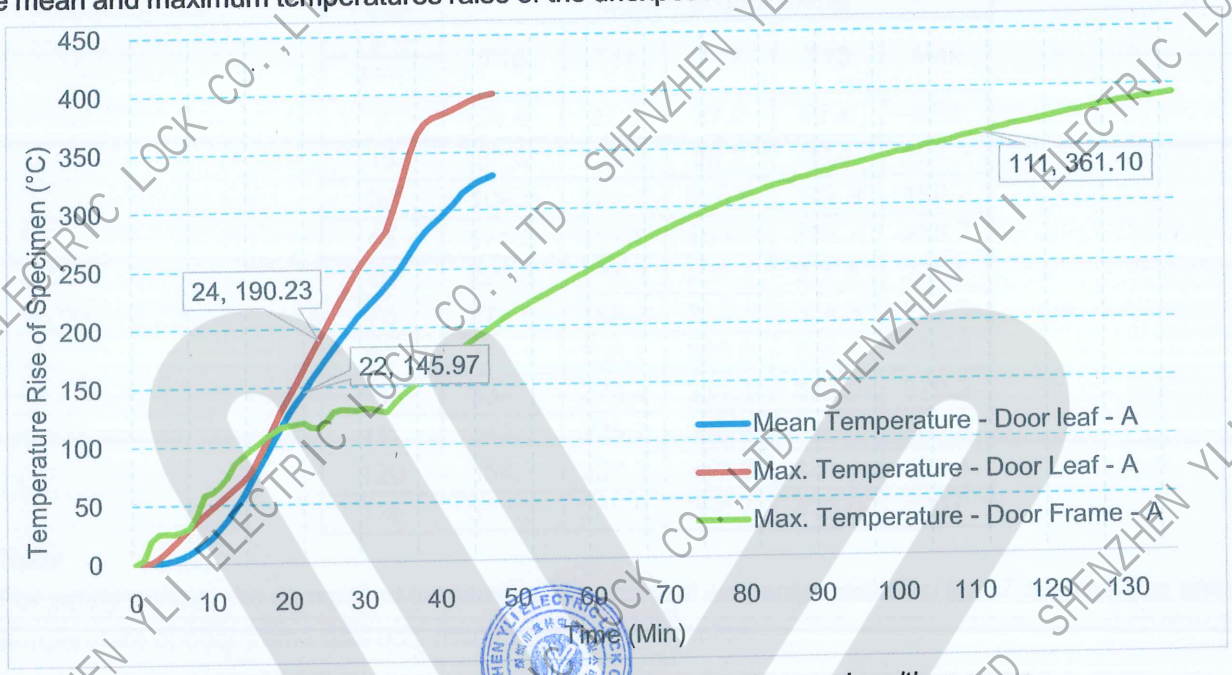
The locations and reference numbers of various unexposed surface thermocouples were shown in Figure 4.



T1 to T5 : to determine Doorset A Door Leaf mean temperature rise.
T1 to T9 : to determine Doorset A Door Leaf maximum temperature rise.
T10 to T13 : to determine Doorset A Door Frame maximum temperature rise.
T14 to T18 : to determine Doorset B Door Leaf mean temperature rise.
T19 to T25 : to determine Doorset B Door Leaf maximum temperature rise.
T26 to T30 : to determine Doorset B Door Frame maximum temperature rise.

Figure 4 Locations and reference numbers of thermocouple on unexposed surface

The mean and maximum temperatures raise of the unexposed face of Doorset A were shown in Graph 2a.



Graph 2a The mean and maximum temperatures raises/time curve

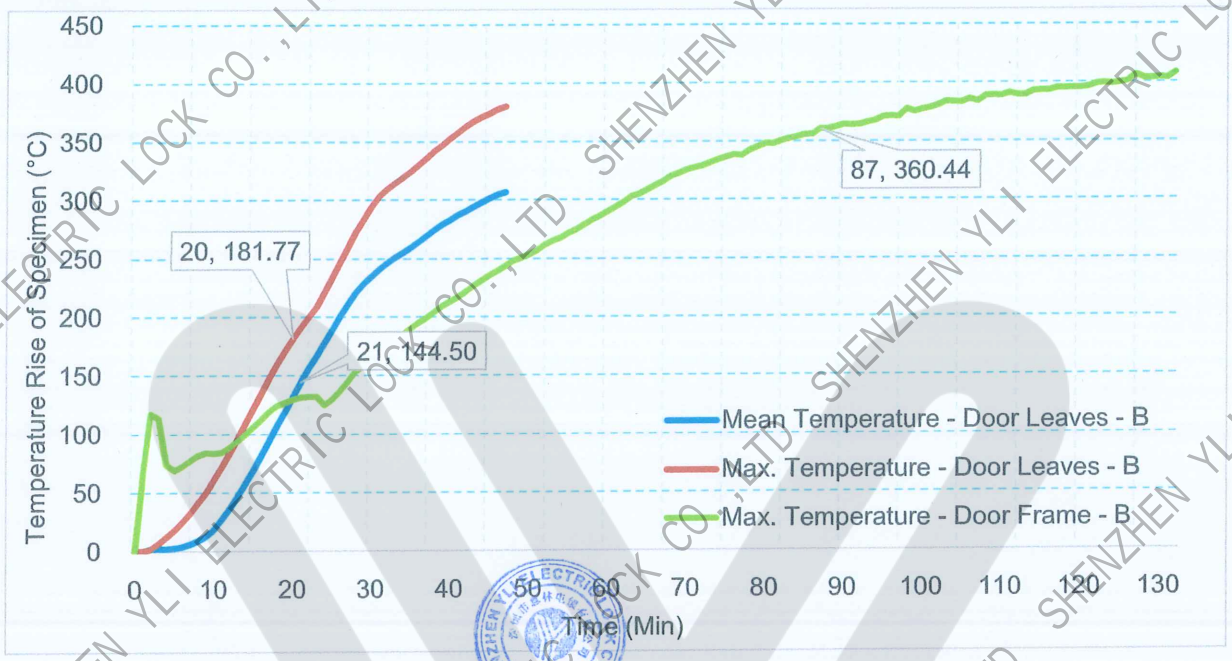
The door leaf of Doorset A mean temperature rise for insulation (140°C rise) was exceeded at 22 min. The door leaf of Doorset A maximum temperature rise for insulation (180°C rise) was exceeded at 24 min. The door frame of Doorset A maximum temperature rise for insulation (360°C rise) was exceeded at 111 min.

The individual temperatures recorded on the unexposed face of the Doorset A were shown in Table 5a.

Table 5a Individual temperatures recorded on the unexposed face of the Doorset A

Area	Position at door leaf										
Time	T1	T2	T3	T4	T5	T6	T7	T8	T9	Mean	Max
Min											
0	21.7	27.9	22.5	26.8	27.4	21.2	24.5	23.5	28.1	25.3	28.1
5	27.8	29.7	24.0	32.4	28.6	38.4	29.3	32.9	30.6	28.5	38.4
10	54.5	47.4	36.7	57.9	43.2	68.9	51.1	61.7	41.3	47.9	68.9
15	98.4	91.8	89.3	103.0	86.9	98.2	84.7	93.1	70.2	93.9	103.0
22	187.9	168.8	151.8	189.5	158.2	155.4	138.4	162.4	135.6	171.2	189.5
24	211.9	179.5	179.5	209.8	172.5	171.7	151.2	183.1	153.9	190.6	211.9
30	279.5	222.3	217.5	273.2	210.5	216.1	188.4	240.5	206.1	240.6	279.5
35	318.1	246.6	238.1	350.1	238.4	245.3	213.1	272.0	232.5	278.3	350.1
40	355.2	282.9	274.8	408.7	272.6	284.5	243.9	299.4	262.0	318.8	408.7
47	420.7	314.2	311.3	426.9	302.4	318.0	276.5	327.7	297.4	355.1	426.9

The mean and maximum temperatures raise of the unexposed face of Doorset B were shown in Graph 2b.



Graph 2b The mean and maximum temperatures raises/time curve

he door leaf of Doorset B mean temperature rise for insulation (140°C rise) was exceeded at 21 min. The door leaf of Doorset B maximum temperature rise for insulation (180°C rise) was exceeded at 20 min. The door frame of Doorset B maximum temperature rise for insulation (360°C rise) was exceeded at 87 min.

The individual temperatures recorded on the unexposed face of the Doorset B were shown in Table 5b.

Table 5b Individual temperatures recorded on the unexposed face of the Doorset B

Area	Position at door leaf													
Time Min	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	Mean	Max
0	26.6	28.4	28.6	26.4	29.2	28.0	26.7	28.5	28.2	28.6	29.1	28.3	27.8	29.2
5	27.6	30.4	36.9	28.0	29.9	46.1	37.5	45.3	37.8	33.2	40.9	29.3	30.6	46.1
10	46.2	30.0	67.5	48.9	38.6	81.6	71.0	89.2	62.3	48.7	75.1	36.9	46.2	89.2
15	107.2	61.8	132.7	114.9	69.6	129.0	114.6	151.1	97.3	76.3	126.4	52.1	97.2	151.1
20	167.8	124.3	207.7	169.7	128.5	167.5	179.8	210.3	141.2	119.8	196.8	80.4	159.6	210.3
21	177.8	137.0	226.8	178.6	141.5	173.9	193.9	220.0	149.7	129.5	211.2	87.9	172.3	226.8
25	217.3	182.9	282.9	216.0	188.0	202.8	248.8	255.8	180.8	167.6	263.4	124.0	217.4	282.9
30	261.2	228.4	339.8	249.9	233.8	240.9	321.4	301.4	214.4	217.5	317.8	176.9	262.6	339.8
35	284.5	252.0	376.1	268.6	255.8	260.7	351.3	325.4	242.3	246.5	339.4	220.7	287.4	376.1
40	307.9	267.8	404.9	297.4	275.5	285.3	379.3	341.6	255.4	273.5	357.3	251.4	310.7	404.9
47	333.6	284.5	430.5	326.7	296.7	312.7	407.1	359.2	269.7	303.2	380.9	281.2	334.4	430.5

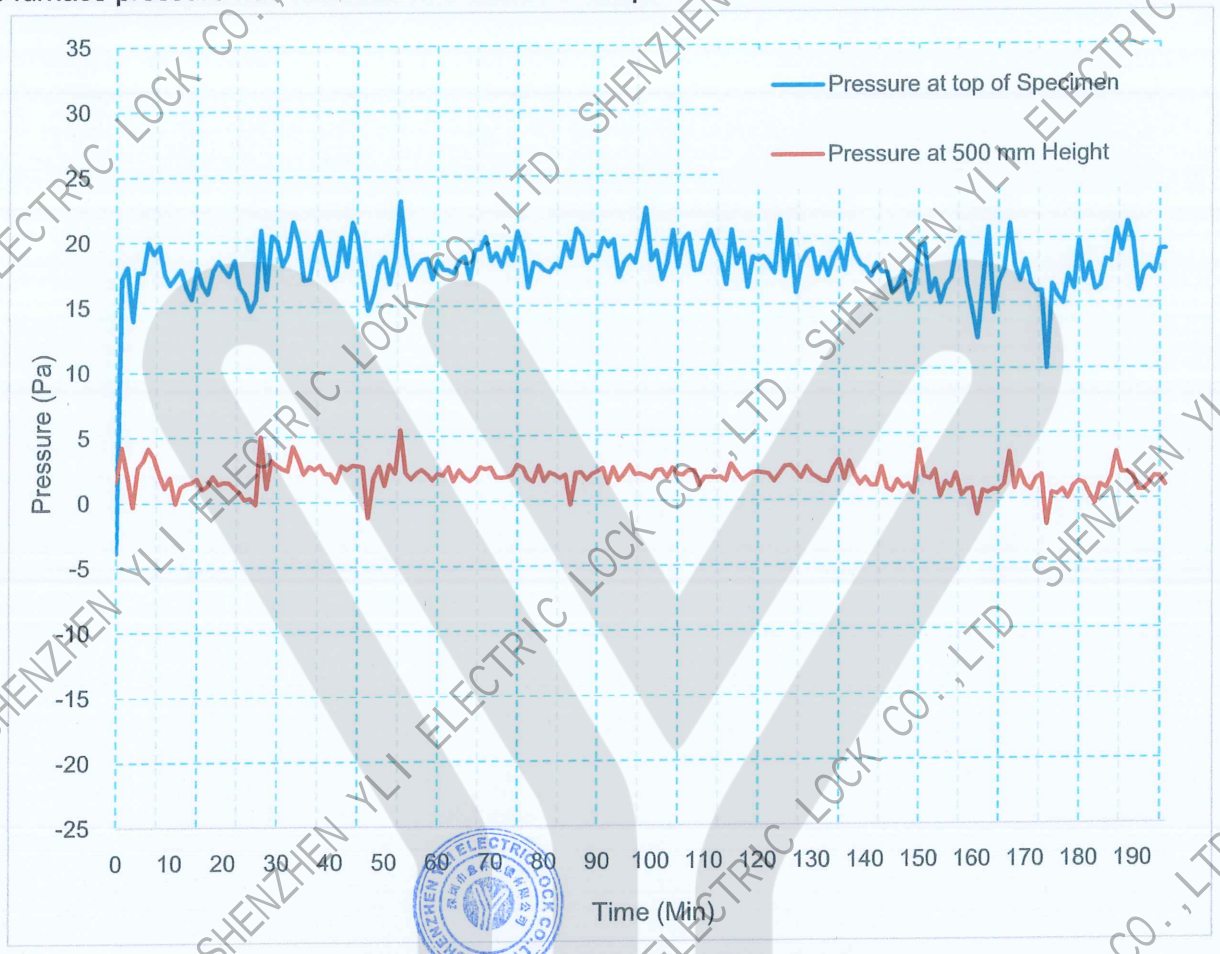
Area	Position at door frame					
Time Min	T26	T27	T28	T29	T30	Max
0	27.3	26.0	28.2	23.6	28.4	28.4
10	49.5	90.1	83.3	107.5	29.5	107.5
20	90.2	97.1	138.5	153.4	79.5	153.4
30	126.6	117.3	191.2	148.6	114.2	191.2
40	180.2	163.5	241.3	180.6	154.1	241.3
50	230.7	191.9	281.8	216.9	188.2	281.8
60	268.0	219.6	318.6	251.3	220.4	318.6
70	302.1	250.1	354.0	284.4	248.8	354.0
80	326.8	276.4	376.5	313.5	274.3	376.5
87	341.1	294.0	388.6	331.6	289.5	388.6
100	362.3	316.2	405.3	355.1	313.4	405.3
110	377.5	331.7	416.8	368.7	/	416.8
120	389.6	344.9	423.3	382.5	/	423.3
132	403.6	358.0	436.6	389.8	/	436.6

Note:

1. The thermocouple T30 was malfunction after 102 minutes.
2. For safety reason, the unexposed temperature of door leaf was only monitored for 47 minutes, the unexposed temperature of door frame was only monitored for 132 minutes.

8.5 Furnace Pressure

The furnace pressure was recorded and shown in Graph 3.



Graph 3 Furnace Pressure / Time Curve

9. PERFORMANCE CRITERIA

The performance of the specimen was assessed against the criteria for integrity and insulation in accordance with Clause 11 of EN 1363-1:2020 and Clause 11 of EN 1634-1: 2014+A1: 2018. The performance criteria for failure were given as follow:

Integrity (E):

These are the times in completed minutes for which the test specimen continues to maintain its separating function during the test without:

a) causing the ignition of a cotton pad when applied; or

b) permitting the penetration of a gap gauge as follows:

i) whether the 6 mm gap gauge can be passed though the test specimen such that the gauge projects into the furnace, and can be moved a distance of 150 mm along the gap; or

ii) whether the 25 mm gap gauge can be passed though the test specimen such that the gauge projects into the furnace.

c) resulting in sustained flaming for a period of time greater than 10 seconds.

Insulation (I):

This is the time in completed minutes for which the test specimen continues to maintain its separating function during the test without developing temperatures on its unexposed surface which:

a) increase the average temperature above the initial average temperature by more than 140°C; or

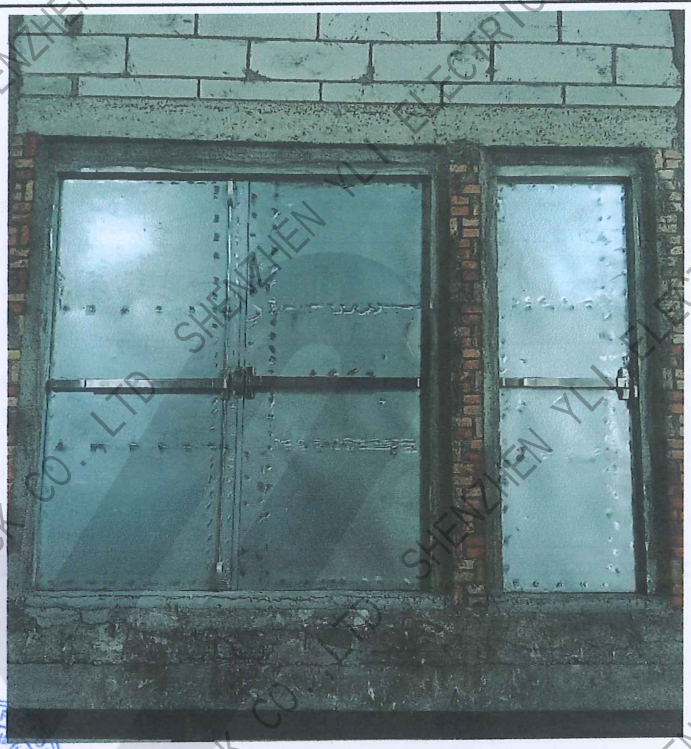
b1) increase at any location (including the roving thermocouple) above the initial average temperature by more than 180 °C; [Supplementary procedure - Classification I_1]

b2) increase at perimeter frame member of the doorset or openable window above the initial average temperature by more than 360 °C; and any other location (including the roving thermocouple) above the initial average temperature by more than 180 °C; [Normal procedure - Classification I_2]

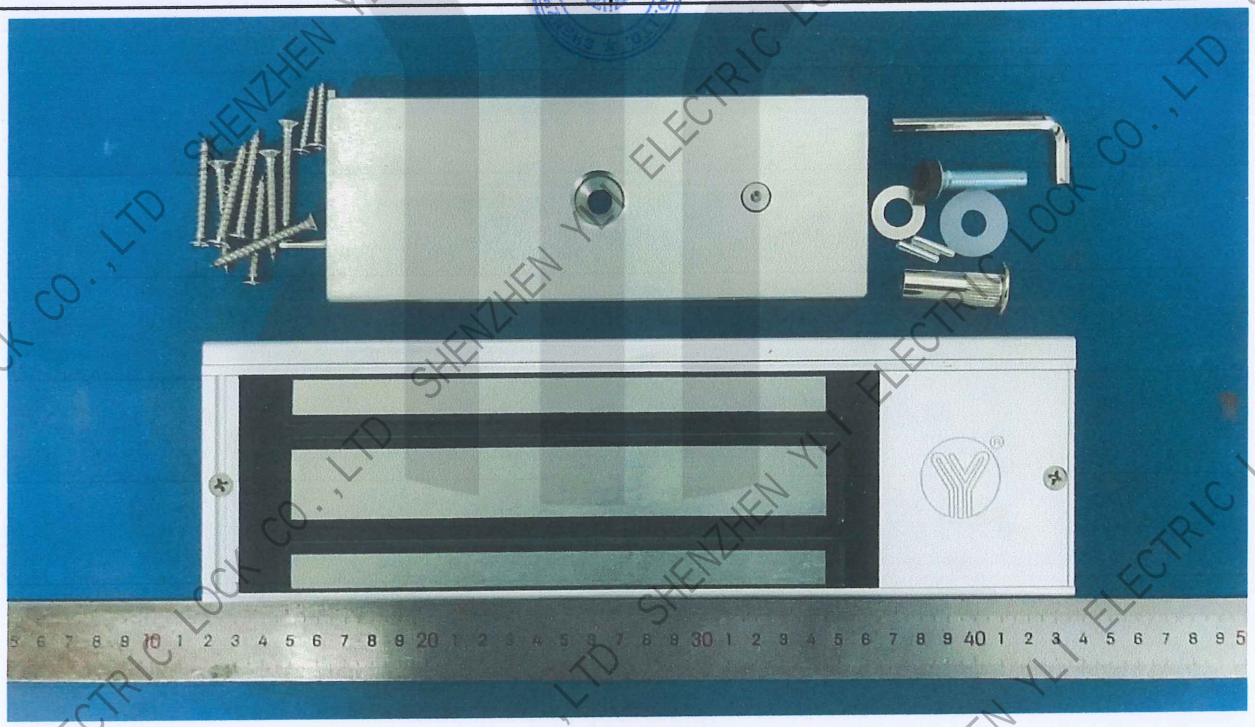
The performance criteria 'insulation' shall automatically be assumed not to be satisfied when the 'integrity' criterion ceases to be satisfied.

APPENDIX C TEST PHOTOGRAPHS

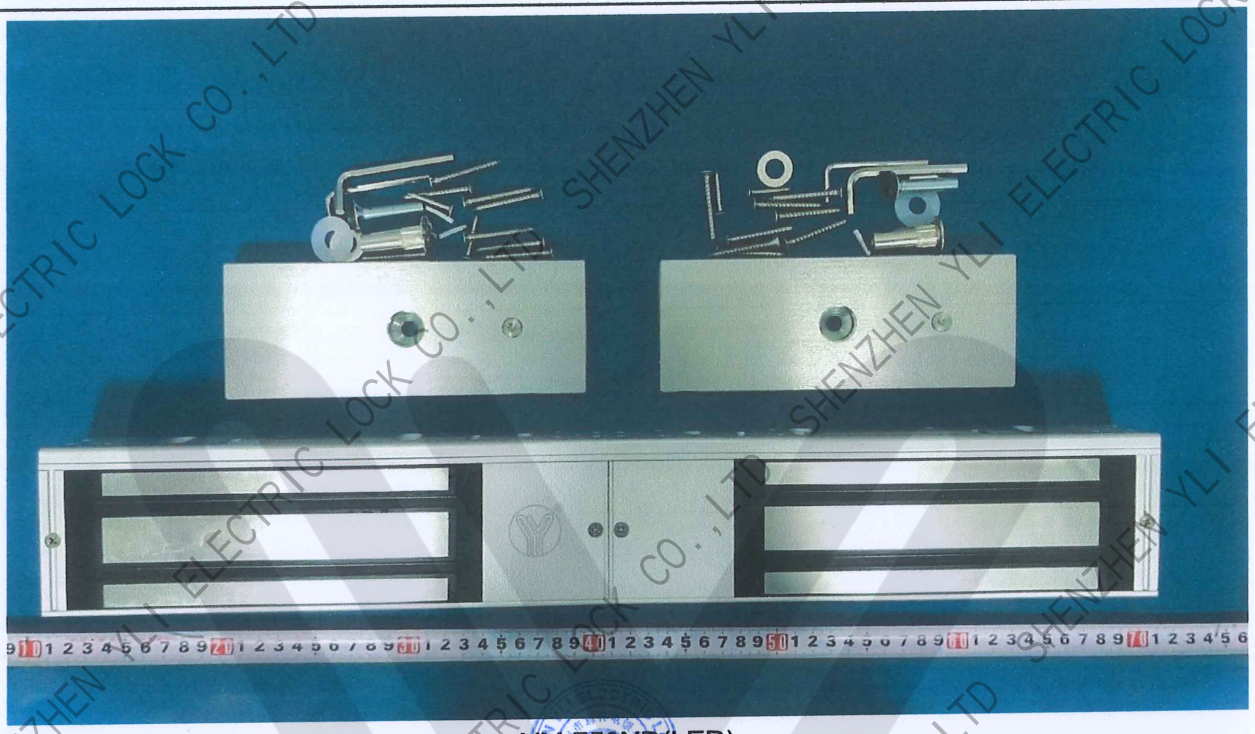
Unexposed face (Test before)



Exposed face (Test before)

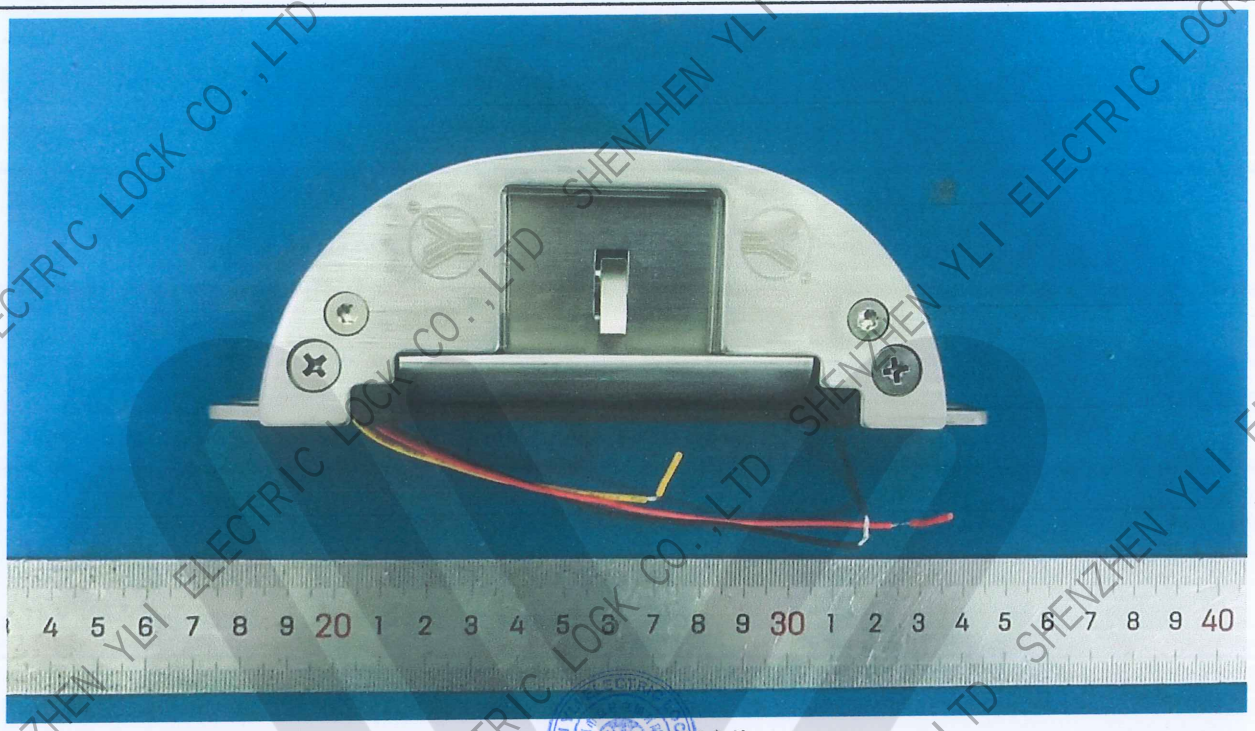


YM-750N(LED)



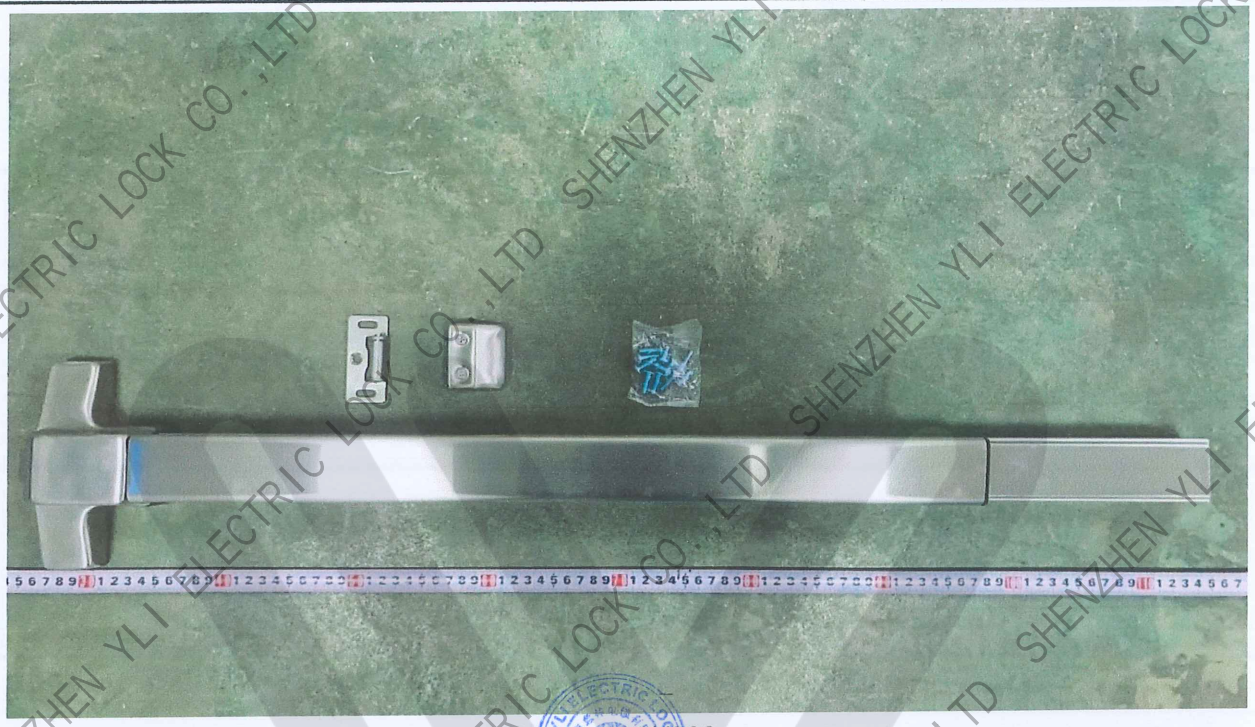
YM-750ND(LED)

YS-621-S(SS304)

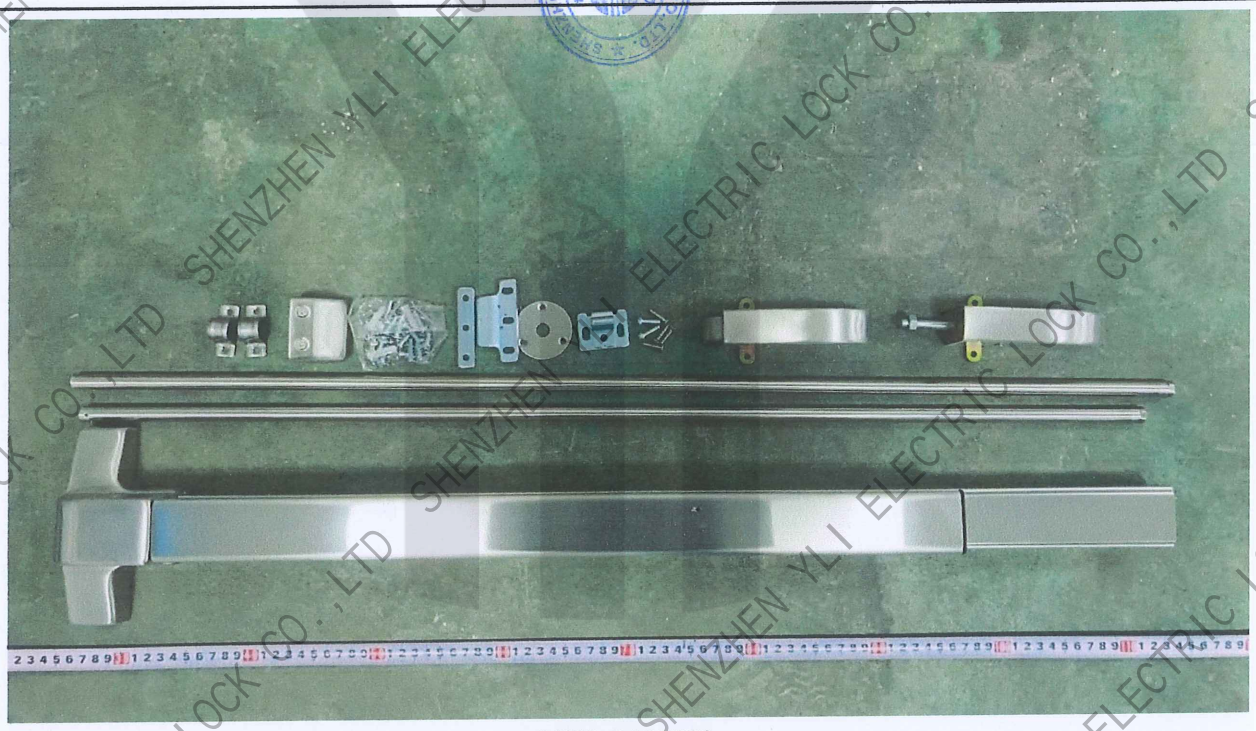


YS-622N-S(SS304)

YED-641(SS)/650mm



YED-641(SS)/880mm



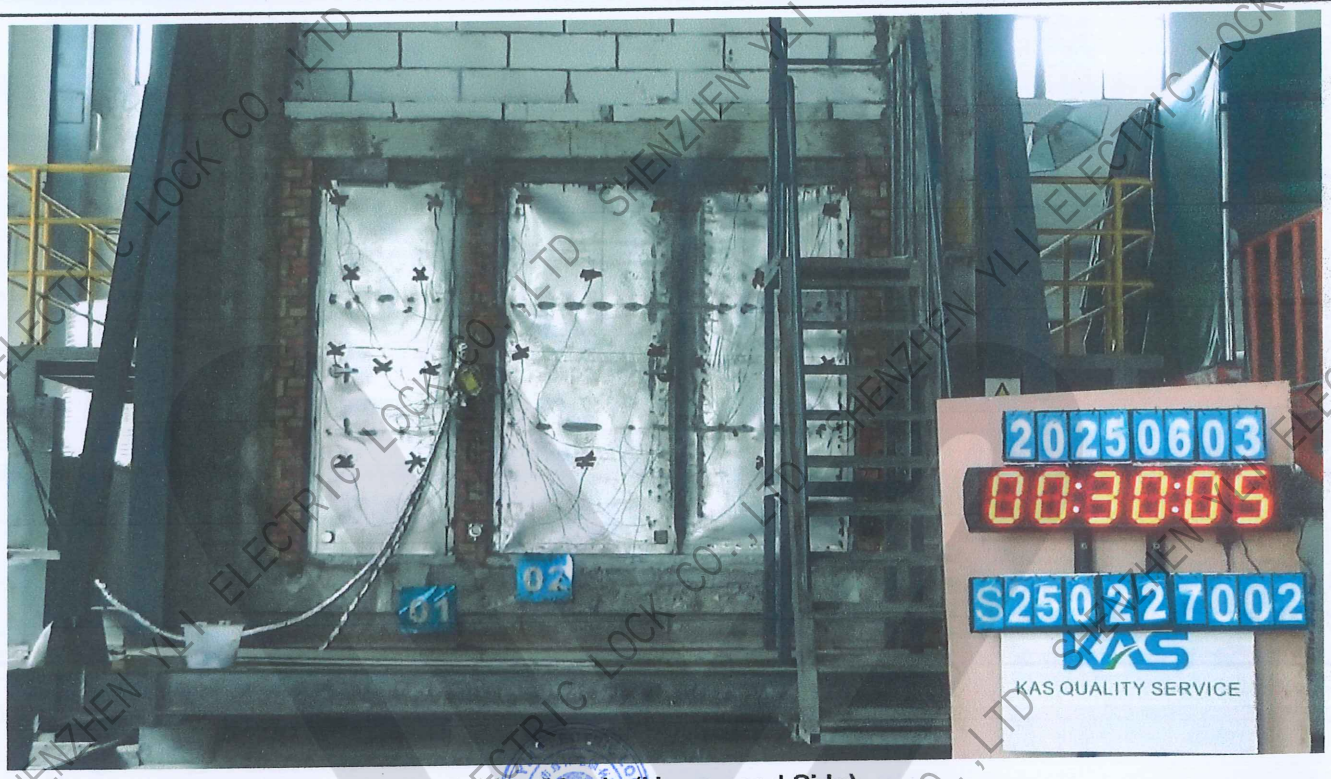
YED-642(SS)

DLK-402-SS

DLK-402L-SS

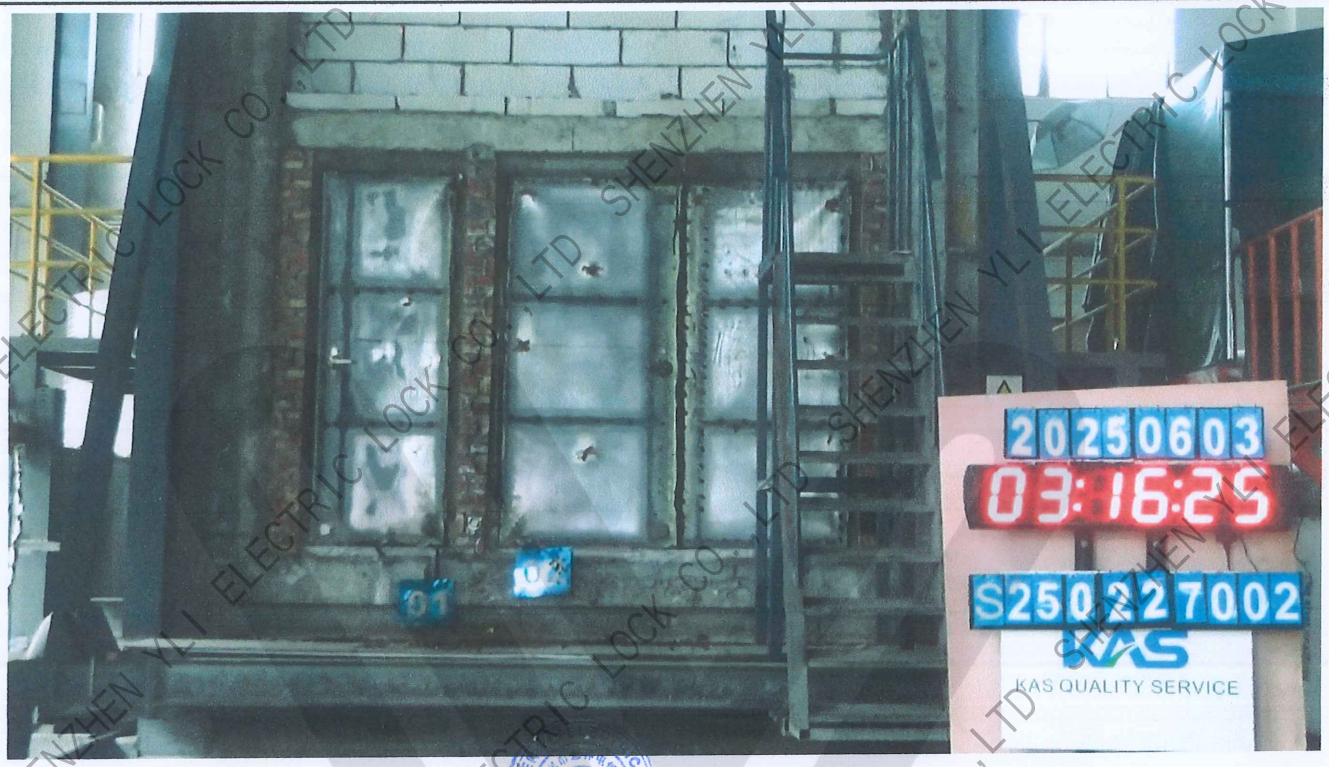
YD-605

YD-611-EX

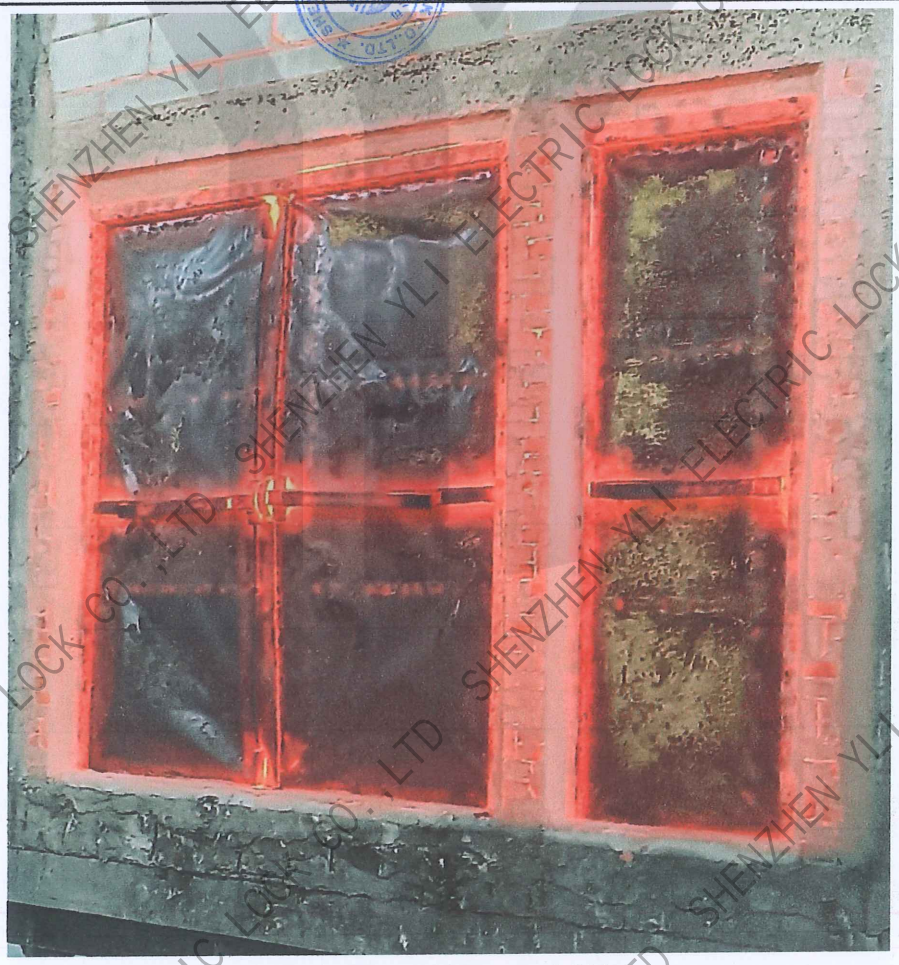


After 30 min (Unexposed Side)

After 60 min (Unexposed Side)



After 196 min (Unexposed Side)



After 196 min (Exposed Side)

REVISION HISTORY

Revision No.	Date	Changes	Author	Reviewer
Original	7/4/2025	First issue	Singh Zhang	Credy Chen

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The End of Report