

Test Verification of Conformity

On the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the essential requirements of the referenced specifications at the time the tests were carried out.

Applicant Name & Address : GUANGDONG BE-TECH SECURITY SYSTEMS CO., LTD.
No. 17, Keyuan 3 Road, Ronggui, Shunde High-Tech Zone,
Foshan, Guangdong, P.R.China

Product(s) Tested : Electronic Lock

Ratings and principal characteristics :

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Model(s) : G1

Brand name : 

Relevant Standard(s)/Specification(s) : EN 14846: 2008

Date of Test(s) : September 16, 2009 to October 13, 2009
And January 17, 2012 to January 18, 2012

Verification Issuing Office Name & Address : Same as Legal Entity

Verification/Report Number(s) : GZ10031007-1/ GZ10031007-1& 130627001SHJ-BP-1

NOTE 1: This verification is part of the full test report(s) and should be read in conjunction with it.

NOTE 2: This verification superseded previous verification GZ09090708-1 dated March 26, 2010.

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Signature

Name: Baud Qiu
Position: Senior Manager
Date: July 25, 2013



TEST REPORT

REPORT NUMBER: 130627001SHJ-BP-1

ORIGINAL ISSUE DATE: July 3, 2013

EVALUATION CENTER

Intertek Testing Services Ltd., Shanghai Jinqiao Branch
Building T52-8, No. 1201 Gui Qiao Road,
Jinqiao Development Area, Pudong District
Shanghai 201206

RENDERED TO

GUANGDONG BE-TECH SECURITY SYSTEMS CO., LTD
No. 17, Keyuan 3 Road, Ronggui, Shunde High-Tech Zone,
Foshan, Guangdong, P.R.China

PRODUCT EVALUATED

Electronic Lock
Model: G1

EVALUATION PROPERTY

Fire Resistance

Report of Testing Electronic Lock in Wooden Door Assembly for compliance with the applicable requirements of the following criteria: *EN 1634-1:2008, Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware – Part 1: Fire resistance tests for doors, shutters and openable windows.*

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2 Introduction

Intertek Testing Services has conducted an evaluation for GUANGDONG BE-TECH SECURITY SYSTEMS CO., LTD to determine the fire resistance characteristics of the Electronic Lock –G1 in Wooden Door Assembly. The test was carried out at an Intertek qualified facility, located at Shanghai, China. This evaluation began on January 17, 2012 and was completed on January 18, 2012.

The test was conducted in accordance with EN 1634-1:2008 “Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware – Part 1: Fire resistance tests for doors, shutters and openable windows”.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on January 16, 2012.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Door	Type	Single Swing Wooden Door (Fully-insulated)
	Nominal Size	843 mm wide by 2092 mm high by 54 mm thick
Frame	Nominal Size	905mm wide by 2130mm high
Hardware	Latch	Electronic Lock Model: G1
	Hinges	Ball bearing stainless steel butt hinge Quantity: Three

The drawings of the test Electronic Lock, fire door assembly, and test wall construction can be found in Appendices A, B and C respectively. A comprehensive description of the Electronic Lock is maintained on Intertek file.

4 Testing and Evaluation Methods

The test was conducted in accordance with EN 1634-1:2008 “Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware – Part 1: Fire resistance tests for doors, shutters and openable windows”, and EN 1363-1:1999 “Fire Resistance Tests – Part 1: General Requirements”.

The test assembly was installed in a steel restraint frame. The restraint frame was supported by a vehicle which allowed the sample to be moved in front of the furnace for the fire exposure. The test door was oriented to open into the furnace, and was built into a concrete masonry unit partition, with fully mortared joints. The nominal dimensions of the test wall were 3 m high by 3 m wide. The test measurement data was shown in Appendix D.

After positioning the assembly frame over the furnace opening, the burners were ignited and the timer was started when any of the furnace thermocouples exceeded 50°C. Temperatures within the furnace were monitored using thermocouples and the data was recorded. The burners were controlled to keep the furnace temperatures within the allowable limits specified in the test standards. After 5 minutes, the furnace pressure was adjusted so that the neutral plane was established at a maximum of 500 mm above notional floor level. Periodic observations were made of the surfaces of the test assembly during the fire resistance test.

Door deflection relative to the frame, where applicable, was monitored throughout the test. Position for measurement of deflection and unexposed temperature was presented in the drawing of Appendix D.

5 Testing and Evaluation Results

5.1. INTEGRITY

After 55 minutes, sustained flaming comes out from the lock and ignited the frame around the lock, the fire continues to the top frame. Integrity failure of the specimen is deemed to occur. The photographs can be found in Appendix F.

5.2. INSULATION

Transmission of heat through the assembly during the fire resistance test did not raise the average temperature on the unexposed surface by more than 140°C, and did not raise the maximum temperature on the unexposed surface by more than 180°C. In addition, the transmission of heat through the assembly did not raise the maximum temperature of the unexposed surface of the frame by more than 360°C.

The Performance criteria “insulation” shall automatically be assumed not to be satisfied when the “integrity” criterion ceases to be satisfied. A full set of test data is included in Appendix E, and photographs have been presented in Appendix F.

6 Conclusion

The Electronic Lock –G1 and single wooden door assembly identified in this report has been tested in accordance with EN 1634-1:2008 “Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware – Part 1: Fire resistance tests for doors, shutters and openable windows”.


The test assembly satisfied the performance requirements for the following periods:

Integrity	Sustained flaming	55 minutes
	Gap gauge	55 minutes
	Cotton pad	55 minutes
Insulation		55 minutes


The test was discontinued after a period of 60 minutes at the request of the sponsor.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK

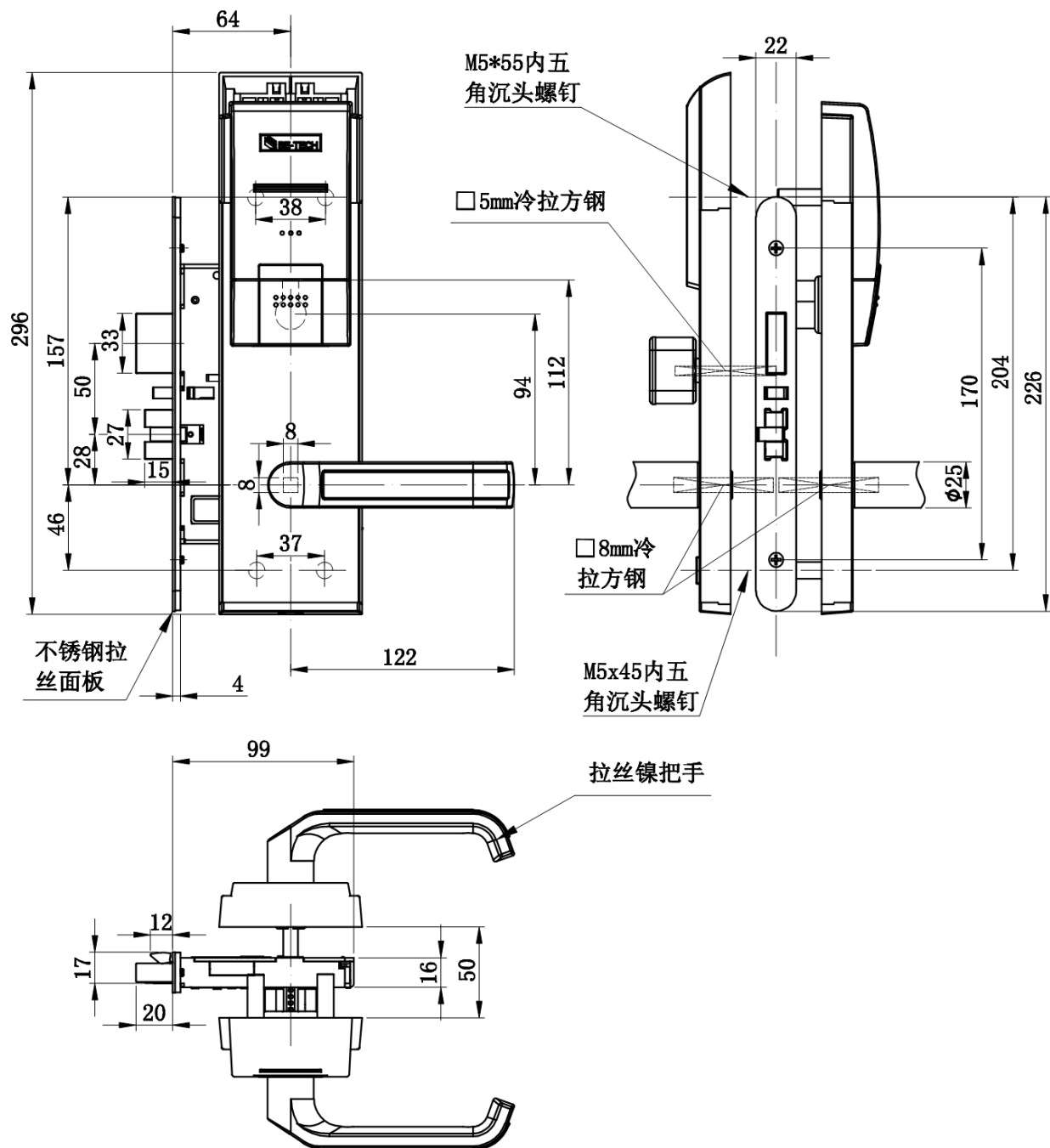
Reported by: 

Star Shi
Engineer, Building Products

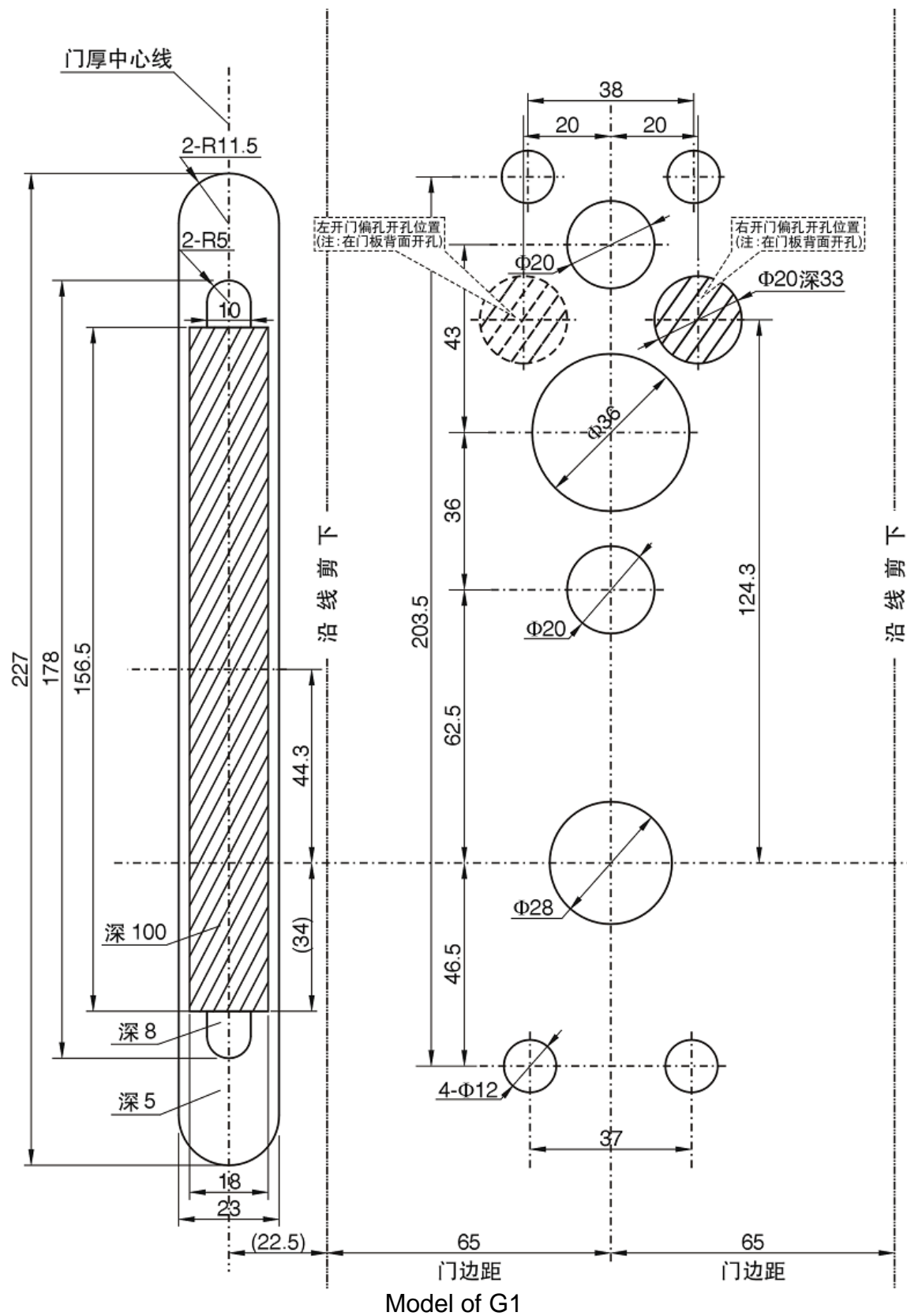
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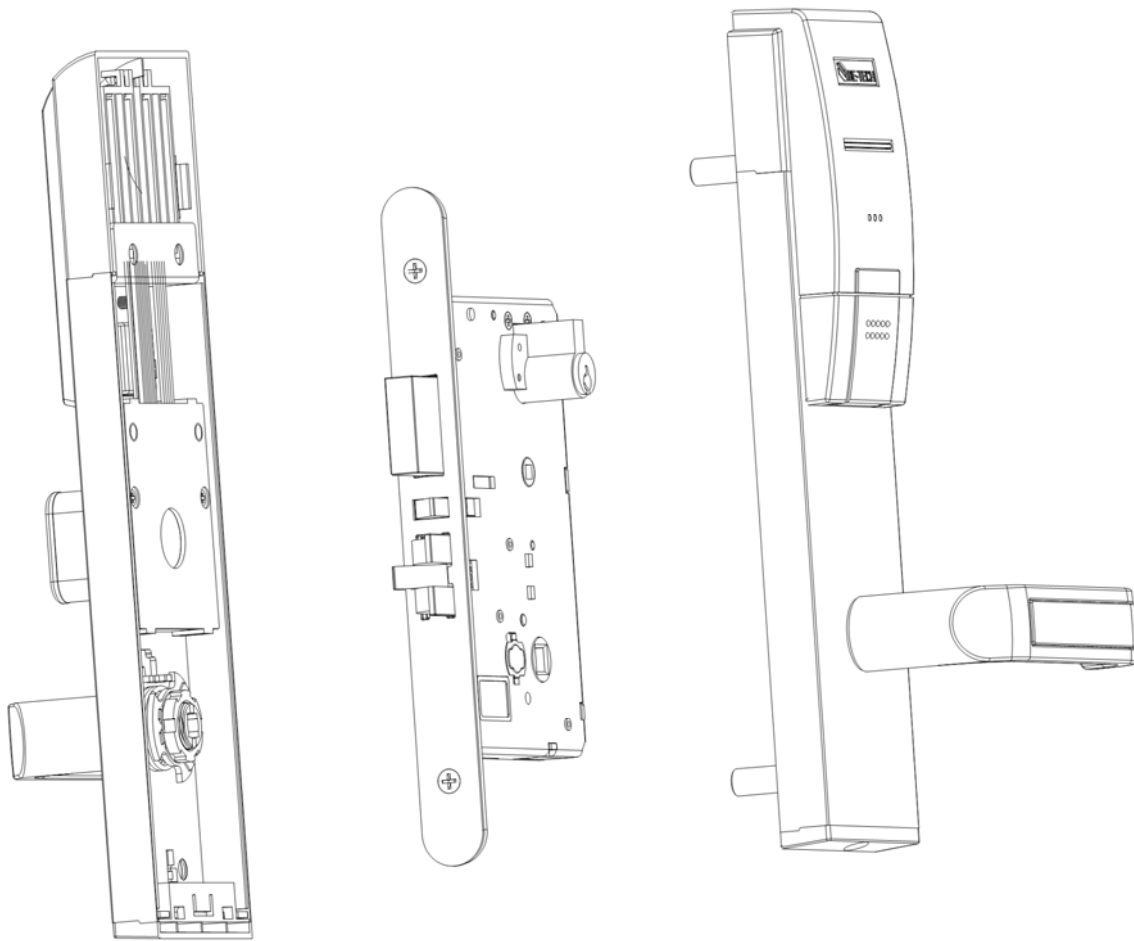
Harrison Li
Project Engineer, Building Products

7 Appendix A: Electronic Lock Drawings



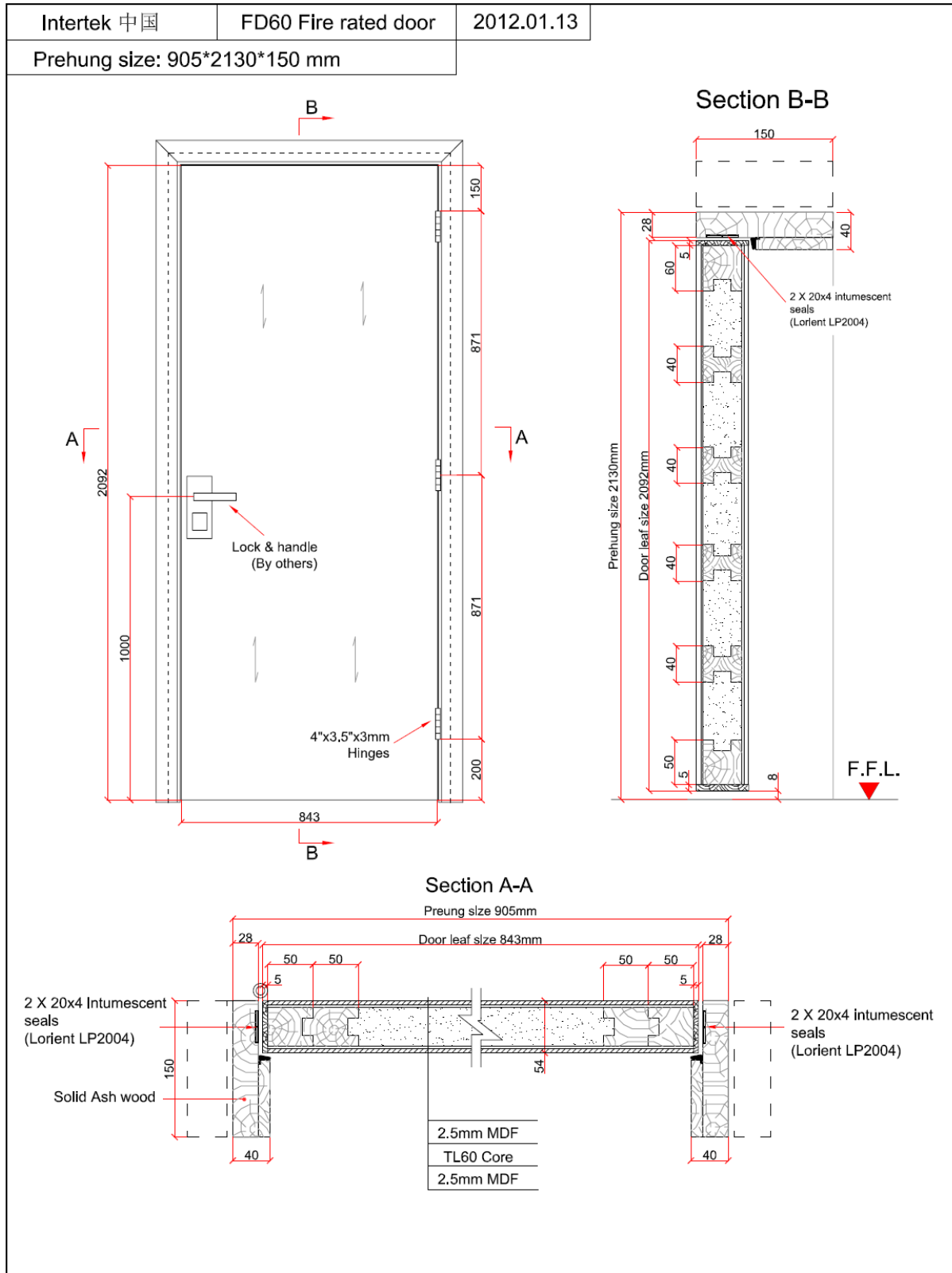
Model of G1



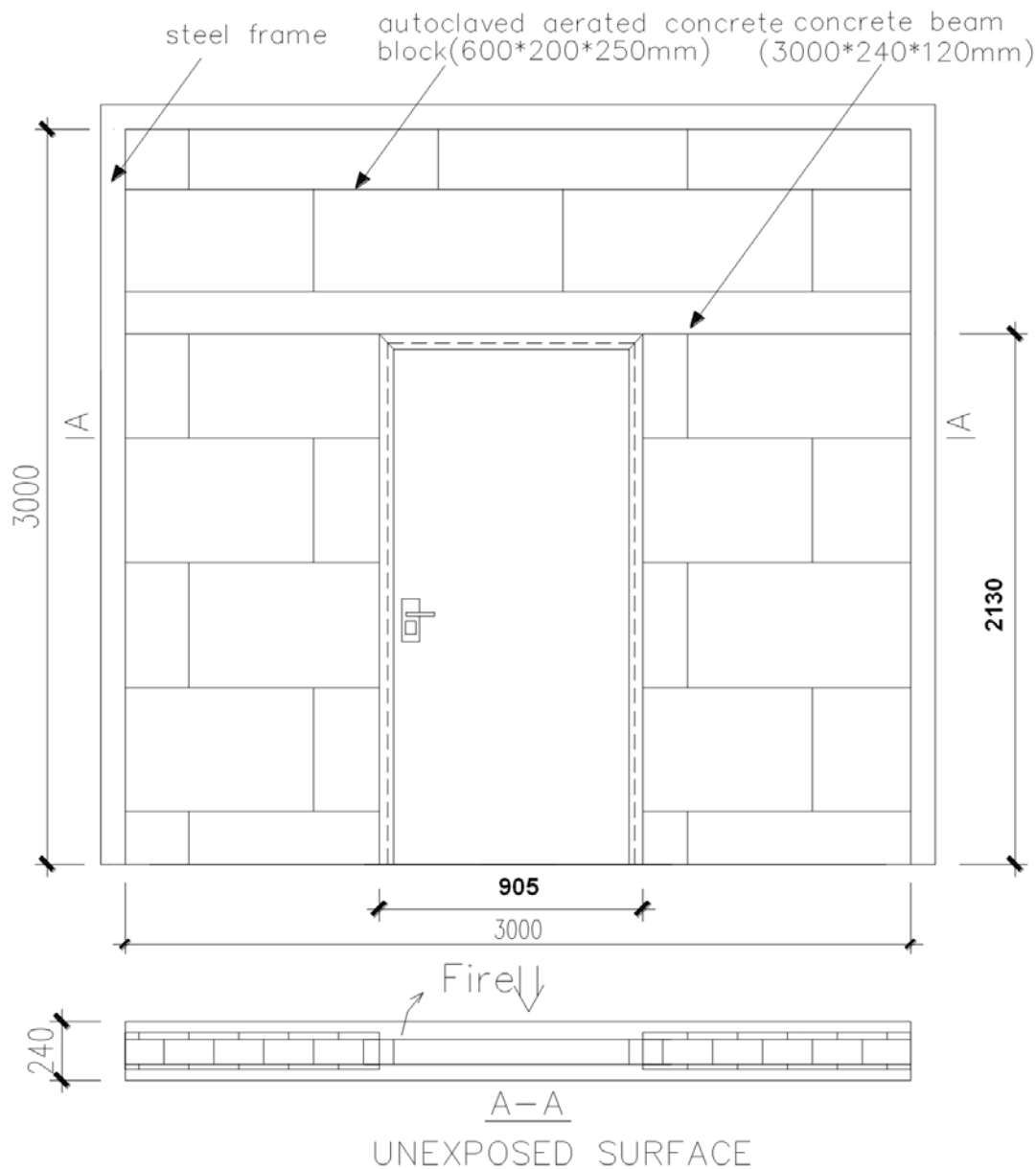


Model of G1

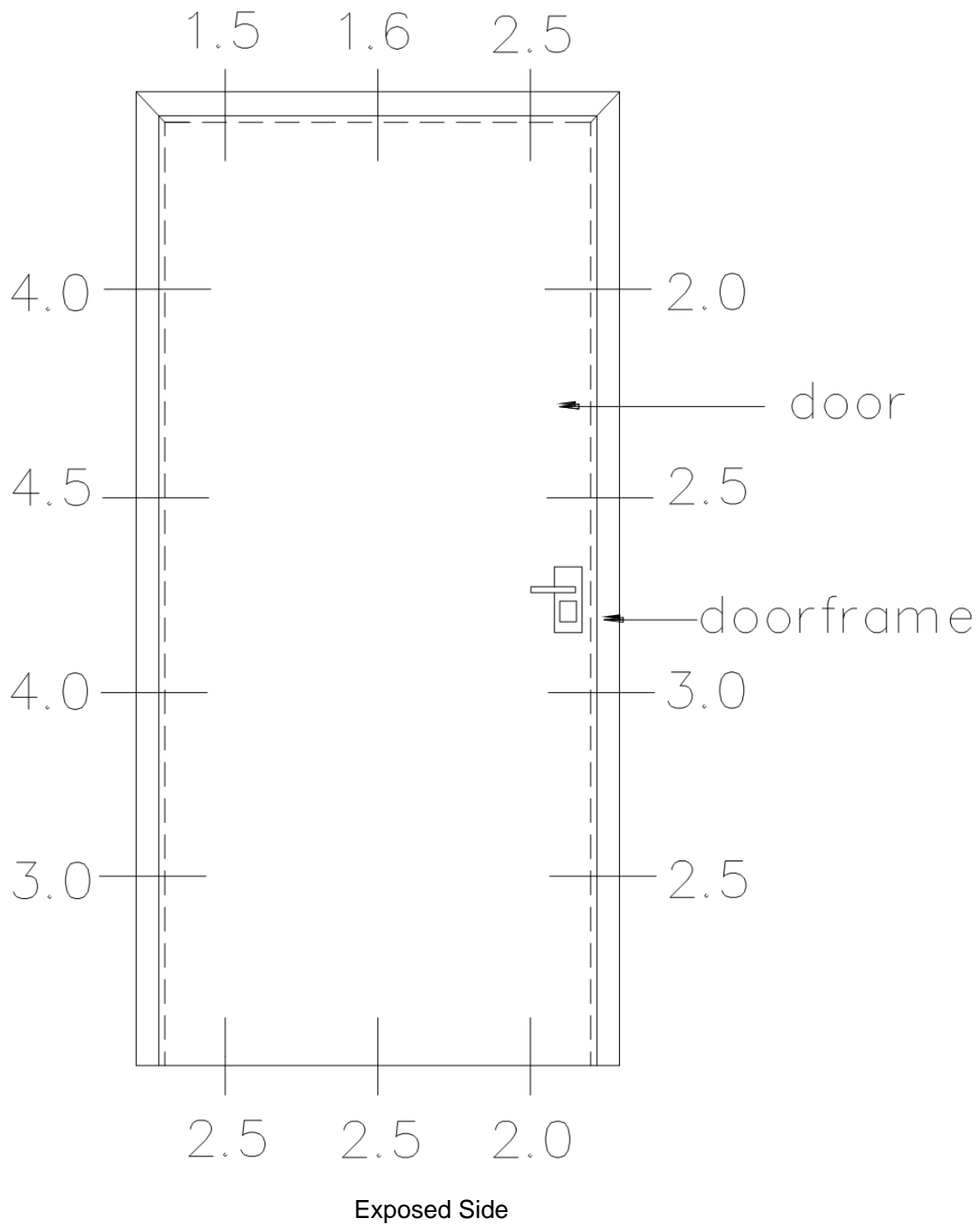
8 Appendix B: Fire Door Assembly Drawings



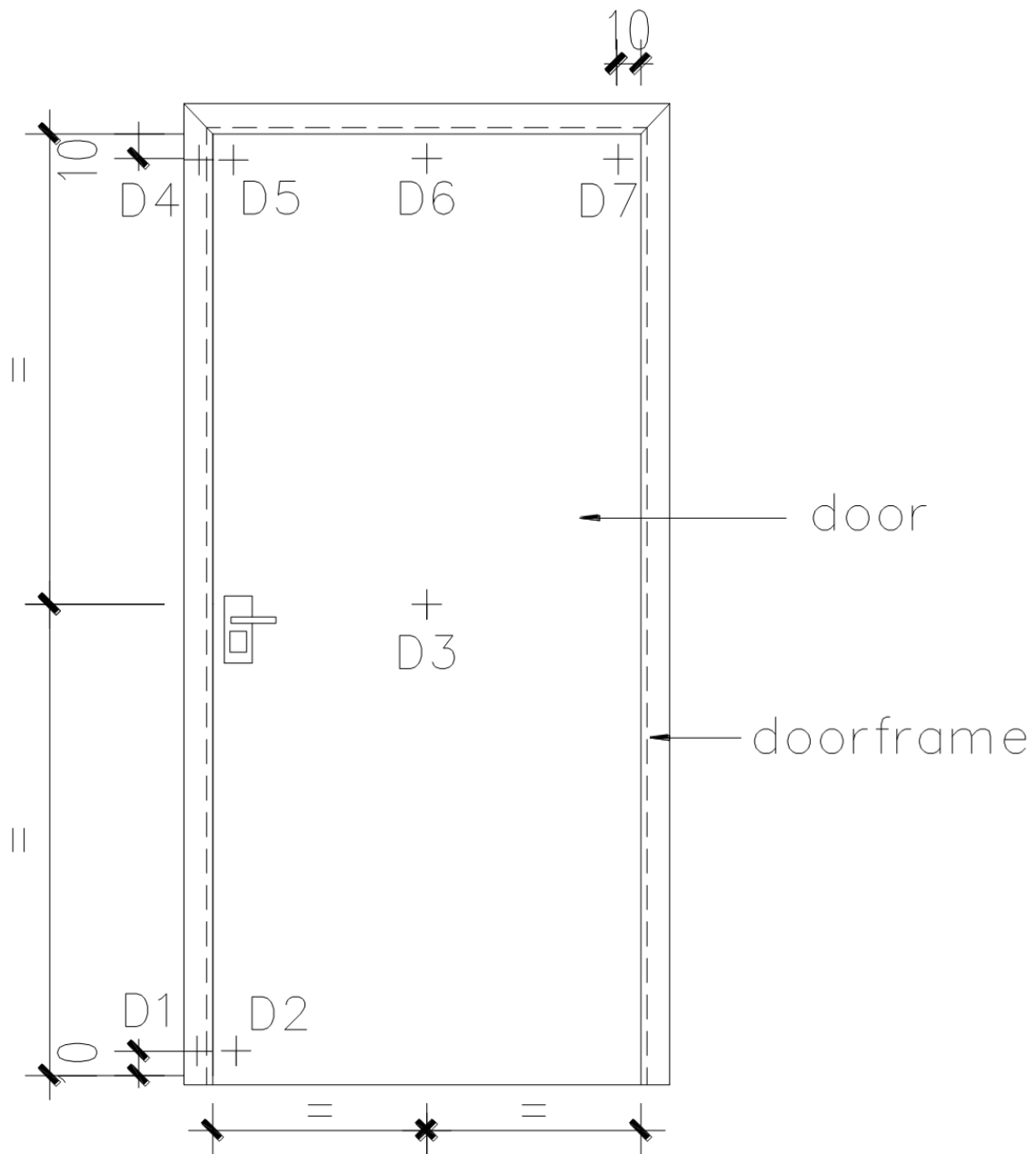
9 Appendix C: Test Wall Construction Drawing



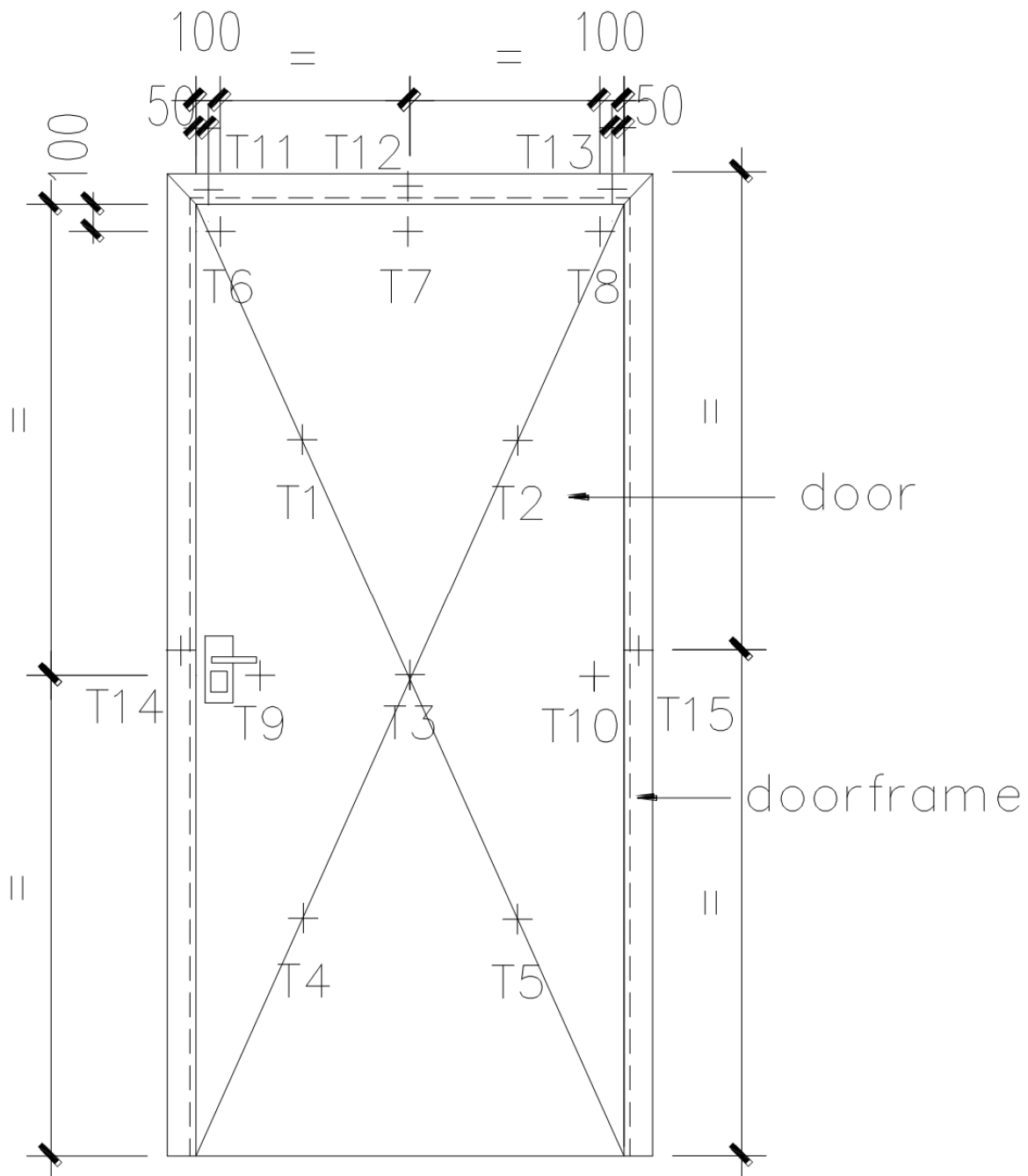
10 Appendix D: Test Measurement Data



DOOR ASSEMBLY INITIAL CLEARANCES



POSITION FOR MEASUREMENT OF HORIZONTAL DEFLECTION



POSITION FOR MEASUREMENT OF UNEXPOSED TEMPERATURE

11 Appendix E: Test Data



Test: Fire Resistance
Start Date: 2012.1.16
Target Date: 2012.2.1
Job No: 130627001SHJ-BP-1
Client: GUANGDONG BE-TECH SECURITY SYSTEMS CO., LTD
Sample: Electronic Lock – G1
Sample ID: S1112212
Standards: EN1634-1:2008 Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Conditioning: According to EN 1363-1, Section 8
Equipment:

Reviewer: Harrison Li

Eng/Tech: Star Shi

Item	ID	MU (k=2)	Cal Due Date
Furnace		n/a	n/a
Furnace pressure gauge	8960903	±1%	2012.3.9
Test Clock	3060603	0.1s	2012.2.15
Furnace thermocouple 1	8960903	I	2012.3.17
Furnace thermocouple 2		I	
Furnace thermocouple 3		I	
Furnace thermocouple 4		I	
Furnace thermocouple 5		I	
Furnace thermocouple 6		I	
Furnace thermocouple 7		I	
Furnace thermocouple 8		I	
Furnace thermocouple 9		I	
Ambient temperature gauge		I	
Unexposed thermocouple		II	2012.3.9
Clearance Measurements	7360910	0.1mm	/
Displacement Measurements	7460617	1mm	/

Heating Conditions: According to EN 1363-1, Section 5.1
Pressure Conditions: According to EN 1363-1, Section 5.2
Ambient Conditions: 20 ± 10°C according to EN 1363-1, Section 5.6
Test Specimen: According to EN 1634-1, Section 6
Installation of test specimen According to EN 1634-1, Section 7
Furnace Thermocouples According to EN 1634-1, Section 9.1.1
Unexposed Face According to EN 1634-1, Section 9.1.2
Thermocouple Pads: Length and width 30 ± 0.5 mm, thickness 2.0 ± 0.5 mm, density 900 ± 100 kg/m³
Pressure Measurements: According to EN 1634-1, Section 9.2

Deflection Measurements: According to EN 1634-1, Section 9.3

Pre-test Examination: According to EN 1634-1, Section 10.1
Test Procedure: According to EN 1634-1, Section 10.2

Deflection Measurements: According to EN 1634-1, Section 9.3
Pre-test Examination: According to EN 1634-1, Section 10.1
Test Procedure: According to EN 1634-1, Section 10.2



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Sample ID: S1112212
Standards: EN1634-1:2008 Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Performance
Criteria: According to EN 1634-1, Section 11.1
Gap gauges per 10.4.5.3 of EN 1363-1
Flaming per 10.4.5.4 of EN 1363-1

Reviewer: Harrison Li

Eng/Tech: Star Shi

Time (min'sec")	Cotton Pad Check	6mm Gap Gauge Distance (mm)	25mm Gap Gauge "Pass Through"	Performance Observations
Initial	--	0	No Pass	The test starts when any of the furnace thermocouples exceeds 50°C
1'20"	--	0	No Pass	Little smoke comes out from the latch side, top edge of the door leaf, and the hole of the lock
2'0"	--	0	No Pass	Large smoke comes out from the lock
7'0"	--	0	No Pass	No smoking is observed, the area around the lock turns dark
9'0"	--	0	No Pass	Little smoke comes out from the lock
24'0"	--	0	No Pass	Large smoke comes out from the lock, the plastic cover of the lock is deformed
25'0"	--	0	No Pass	The plastic cover dropped off. The frame around the lock position turns dark
28'0"	No ignition	0	No Pass	A cotton pad is applied at the lock position, but is not ignited. Little smoke comes out from the lock
51'0"	--	0	No Pass	Intermittent flaming comes out from the lock, which is less than 10s duration
55'0"	--	0	No Pass	Sustained flaming comes out from the lock and ignited the frame around the lock, the fire continues to the top frame. Sustained flaming and cotton pad integrity failures are deemed to occur
60'00	--	0	No Pass	Test is discontinued at the request of the sponsor
Requirement	No ignition	150	No "Pass Through"	No excessive openings, Sustained flaming, etc.



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Standards: EN1634-1:2008 Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Performance
Criteria: According to EN 1634-1, Section 11.2
2) Insulation: Average temperature rise 140°C according to EN1363-1. Maximum temperature rise 180°C according to EN 1363-1, Section 11.3, and of the frame of the door or shutter assembly shall be 360 ° C according to EN 1634-1, Section 11.2.3. Unexposed temperatures according to EN 1634-1, Section 9.1.2.3, and EN 1363-1, Section 9.1.2.3.

Time(Minutes)	Ambient (°C)	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	T5 (°C)	T6 (°C)	T7 (°C)
Initial	8	8	8	8	8	8	8	8
5	8	16	14	17	15	18	20	18
10	8	15	15	16	17	17	20	18
15	8	23	16	25	29	22	32	23
20	8	35	27	40	44	32	48	34
25	8	41	38	51	54	42	60	61
30	8	50	44	57	61	50	69	69
35	8	53	49	61	65	52	72	73
40	8	57	52	63	68	57	76	77
45	8	59	56	64	69	61	77	78
50	8	63	60	67	70	66	79	80
55	8	66	66	67	71	72	95	80
57	8	70	68	66	72	76	123	84
Temperature Rise (°C)		62	60	58	64	68	115	76

Average temperature rise 62 °C
Maximum temperature rise 115 °C
Maximum temperature rise(Frame) 82 °C



Test: Fire Resistance
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Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Performance:
Criteria: According to EN 1634-1, Section 11.2
2) Insulation: Average temperature rise 140°C according to EN1363-1. Maximum temperature rise 180°C according to EN 1363-1, Section 11.3, and of the frame of the door or shutter assembly shall be 360 ° C according to EN 1634-1, Section 11.2.3. Unexposed temperatures according to EN 1634-1, Section 9.1.2.3, and and EN 1363-1, Section 9.1.2.3.

Reviewer: Harrison Li

Eng/Tech: Star Shi

Time(Minutes)	T8 (°C)	T9 (°C)	T10 (°C)	T11 (°C)	T12 (°C)	T13 (°C)	T14 (°C)	T15 (°C)
Initial	8	8	8	8	8	8	8	8
5	25	16	17	13	18	20	17	17
10	26	19	16	15	17	20	18	20
15	43	27	16	13	18	23	17	21
20	56	37	18	12	17	26	15	21
25	62	46	25	12	18	26	18	29
30	68	49	36	14	21	32	19	36
35	74	54	46	16	25	33	20	44
40	77	57	53	18	27	38	24	47
45	80	60	61	17	26	41	25	53
50	80	63	70	18	27	44	28	59
55	85	68	90	19	26	50	31	71
57	86	70	92	20	34	56	31	90
Temperature Rise (°C)	78	62	84	12	26	48	23	82



Test: Fire Resistance
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Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Performance
Criteria: According to EN 1634-1, Section 9.3

Reviewer: Harrison Li

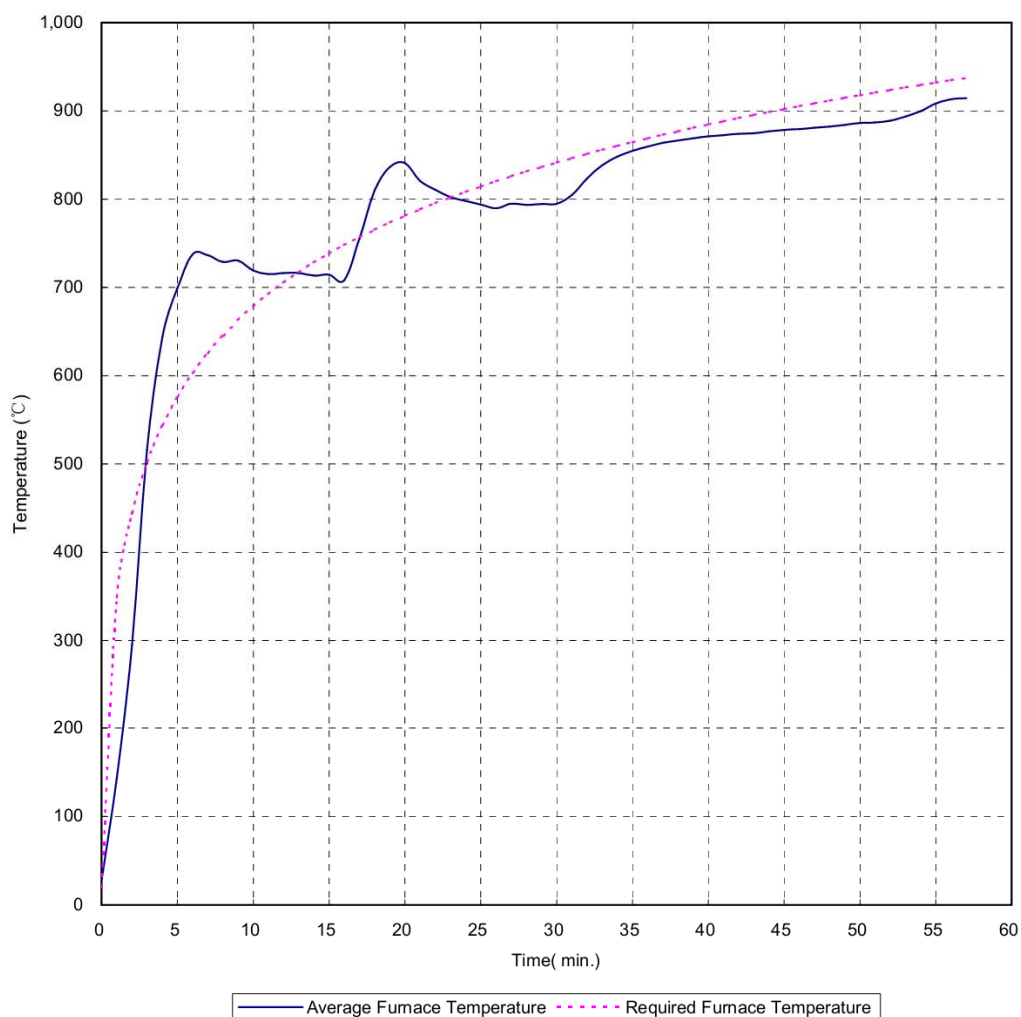
Eng/Tech: Star Shi

Time(Minutes)	Maximum perpendicular displacement where a positive measurement indicates movement towards the furnace (mm)						
	D1	D2	D3	D4	D5	D6	D7
Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	1.0	0.0	2.0	4.0	0.0
30	0.0	0.0	7.0	1.0	6.0	8.0	4.0
40	0.0	0.0	12.0	1.0	15.0	18.0	10.0
50	0.0	0.0	17.0	1.0	18.0	20.0	14.0



Test: Fire Resistance
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Client: GUANGDONG BE-TECH SECURITY SYSTEMS CO., LTD
Sample: Electronic Lock – G1
Sample ID: S1112212
Standards: EN1634-1:2008 Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
Procedure: Part 1: Fire resistance tests for doors, shutters and openable windows
Measurement of
Furnace
Conditions: Pressure and temperature according to EN 1363-1, Section 10.4.2 and 10.4.3

Reviewer: Harrison Li
Eng/Tech: Star Shi



12 Appendix F: Test Photographs



Fig. 1 - Exposed Side Prior to the Fire Test



Fig. 2 - Exposed Side Prior to the Fire Test



Fig. 3 - Unexposed Side Prior to the Fire Test



Fig. 4 – Unexposed Side after 9 Minutes



Fig. 5 – Unexposed Side after 25 Minutes



Fig. 6 – Unexposed Side after 25 Minutes

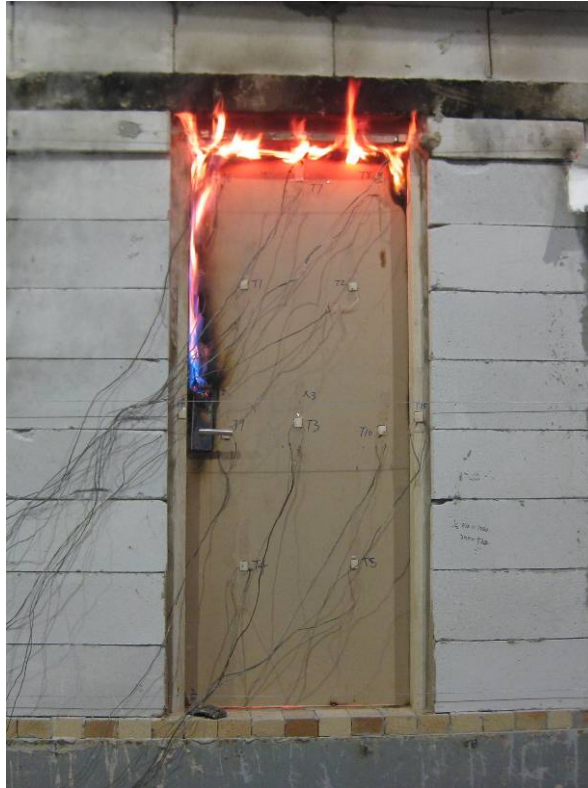


Fig. 7 – Unexposed Side after 55 Minutes



Fig. 8 - Exposed Side after 60 Minutes

13 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	July 3, 2013	First issue	Star Shi	Harrison Li

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