



**KOREA INSTITUTE OF  
CONSTRUCTION TECHNOLOGY**

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## TEST REPORT

Name of the Test : Fire resistance test for door assemblies.  
Report No. : 0406-1031  
Receipt No. : 601-472  
Applicant : SAM HOON MACHINERY CO.  
#532-5, Simgokbon1-dong, Sosa-gu, Buchone-city,  
Gyeonggi-do, Korea  
Tested Date : JUNE. 4th. 2004  
Name of Specimen : BLAST PROOF DOOR  
Test Standard : UL 10B : 2001(Standard for Fire Tests of Door Assemblies)  
Result of Test

(Refer to test Result of Appendix)

Above is the test result of specimen supplied by client,  
and the name of specimen belongs to client.

Tested by : Tai Jin Choi

Approved by : J. H. Yoo

Report issued JUNE. 10th, 2004

The President of Korea Institute of Construction Technology



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## 1. SUMMARY

1.1 The fire resistance test was conducted in accordance with the standard for fire tests of door assemblies, UL10B.(excepted hose stream test)

1.2 Furnace temperature was controlled in accordance with the standard time/temperature curve specified in UL10B.( See Appendix 2)

1.3 To measure the average temperature, four thermocouples were placed on unexposed surface of the test specimen.( See Appendix 3)

1.4 The pressure within the furnace measured at the top of the specimen was controlled to be maintained as zero.( See Appendix 4)

## 2. TEST RESULTS

2.1 The actual time/temperature curve is shown in Appendix 2.

The percentage difference in the areas under the standard time/temperature curve and actual time/temperature curve is shown in Appendix 2-A. The percentage difference satisfied the tolerance for the percentage difference of UL10B.

2.2 The unexposed surface temperatures of the door assembly pair were measured and recorded. the average unexposed surface temperature rise, measured after 30 min of fire of exposure, was 223°C.( See Appendix 3)

2.3 There was no crack, no flaming on the unexposed face of the specimen during the test. ( See Appendix 5)

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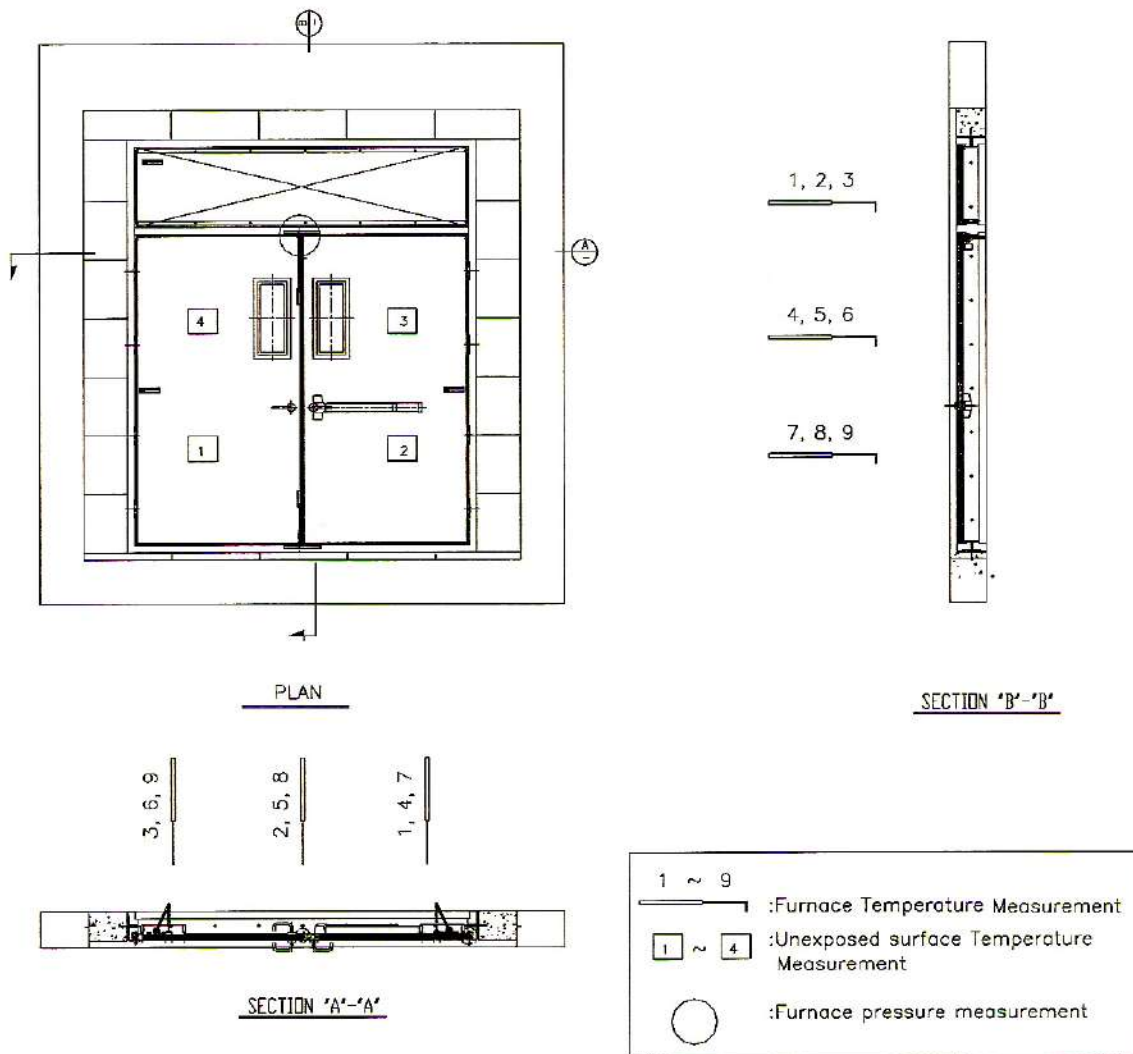
## APPENDIX

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B. Drawing of measurement location

(Dimension : mm)



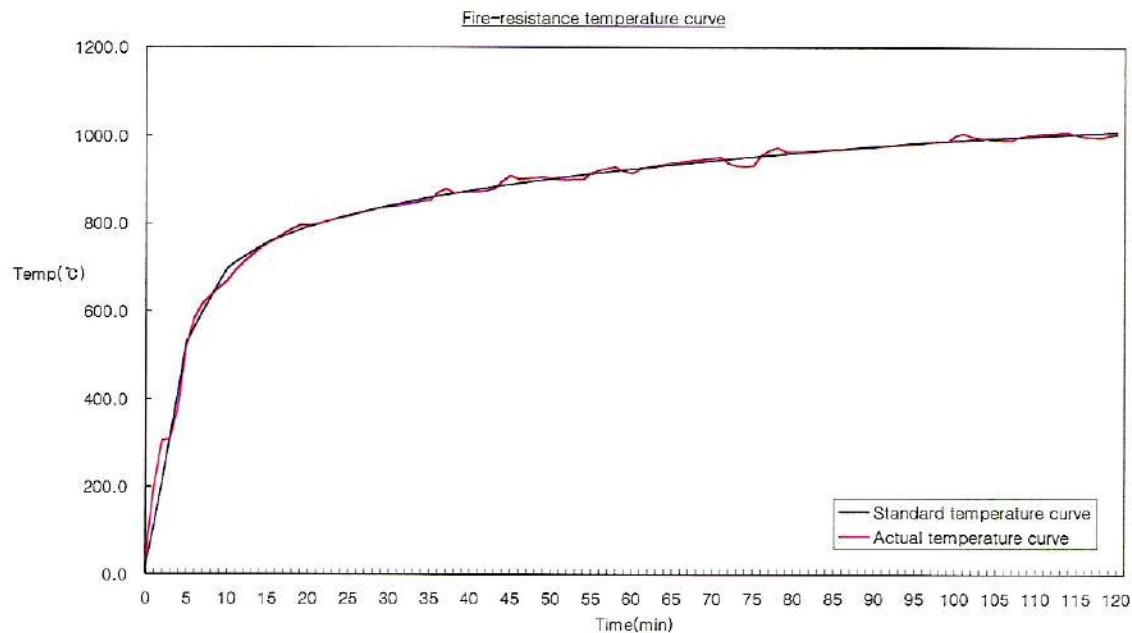
**Appendix 2. Heating temperature**

## A. Measured heating temperature table

Time (min)	UL10B Furnace Temp. (Deg C)	Actual Furnace Temp. (Deg C)	Area Under Standard Curve. (Deg C)	Area Under Actual Curve. (Deg C)	Difference (%)	Tolerance (+ or -) (%)
0	20	39	20	39		
1	107	194	127	232		
2	208	305	335	537		
3	315	309	649	846		
4	421	385	1070	1231		
5	528	519	1599	1751		
6	564	586	2163	2336		
7	599	617	2762	2953		
8	632	636	3394	3589		
9	665	653	4059	4243		
10	697	668	4756	4911		
12	723	711	6190	6315		
14	745	741	7669	7782		
16	764	763	9189	9298		
18	778	786	10738	10860		
20	792	794	12314	12450		
22	802	802	13913	14049		
24	812	811	15533	15667		
26	822	820	17172	17302		
28	831	829	18830	18956		
30	839	837	20504	20627		
35	859	852	24759	24854		
40	875	870	29101	29211		
45	889	909	33516	33639		
50	902	902	37998	38154		
55	913	915	42540	42667		
60	924	914	47136	47273	0.3	10
65	934	937	51785	51926		
70	943	948	56481	56646		
75	952	931	61222	61324		
80	960	963	66006	66145		
85	968	967	70830	70968		
90	975	973	75692	75821		
95	982	981	80589	80709		
100	988	999	85519	85644		
105	994	990	90477	90622		
110	999	1003	95460	95601		
115	1004	1001	100469	100626		
120	1008	1002	105501	105618	0.1	7.5

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B. Fire-resistance temperature curve



**Appendix 3. Unexposed Face Temperature Rise**

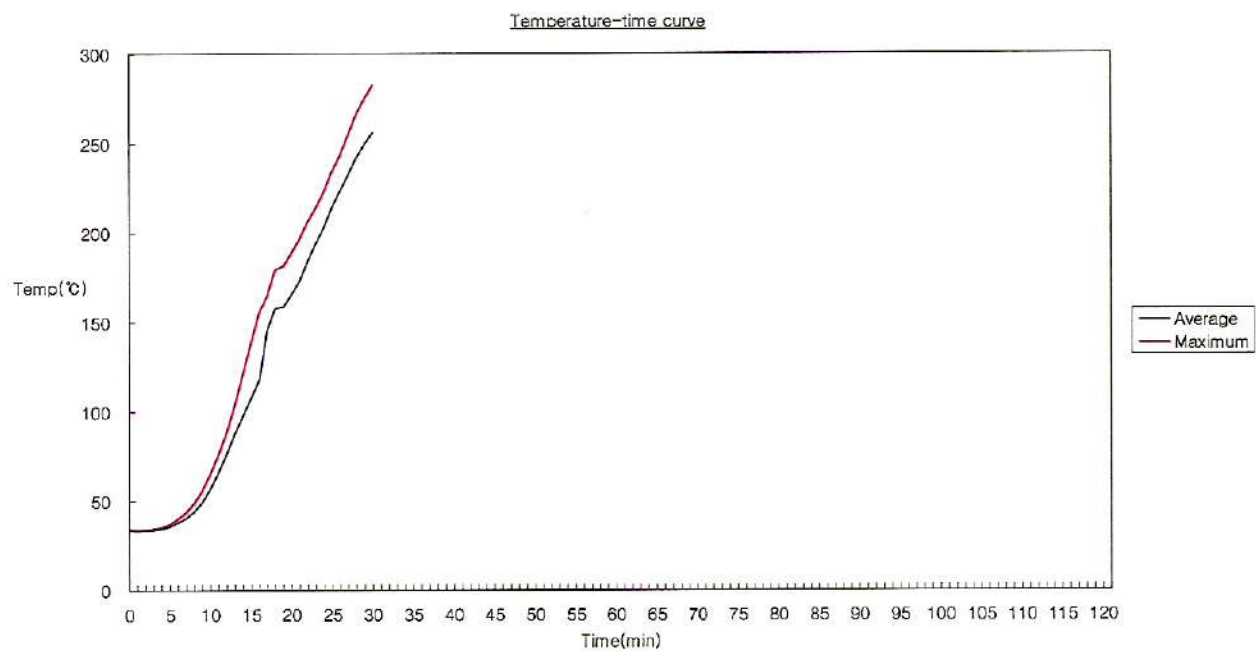
## A. Unexposed face temperature table

Time(min)	ch1	ch2	ch3	ch4	Average	Maximum
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	1	0	0	0	1
3	1	1	0	0	0	1
4	1	2	0	1	1	2
5	2	4	1	3	2	4
6	3	7	2	5	5	7
7	6	10	4	8	7	10
8	8	16	7	12	11	16
9	12	23	10	19	16	23
10	19	32	16	28	24	32
11	27	43	22	39	33	43
12	37	55	29	50	43	55
13	49	71	37	60	54	71
14	61	88	46	62	64	88
15	72	105	57	63	74	105
16	84	123	67	64	84	123
17	93	131	-	-	112	131
18	103	146	-	-	125	146
19	103	148	-	-	126	148
20	110	156	-	-	133	156
21	117	163	-	-	140	163
22	129	173	-	-	151	173
23	141	181	-	-	161	181
24	151	190	-	-	170	190
25	161	201	-	-	181	201
26	171	210	-	-	191	210
27	178	222	-	-	200	222
28	185	233	-	-	209	233
29	191	242	-	-	217	242
30	197	249	-	-	223	249

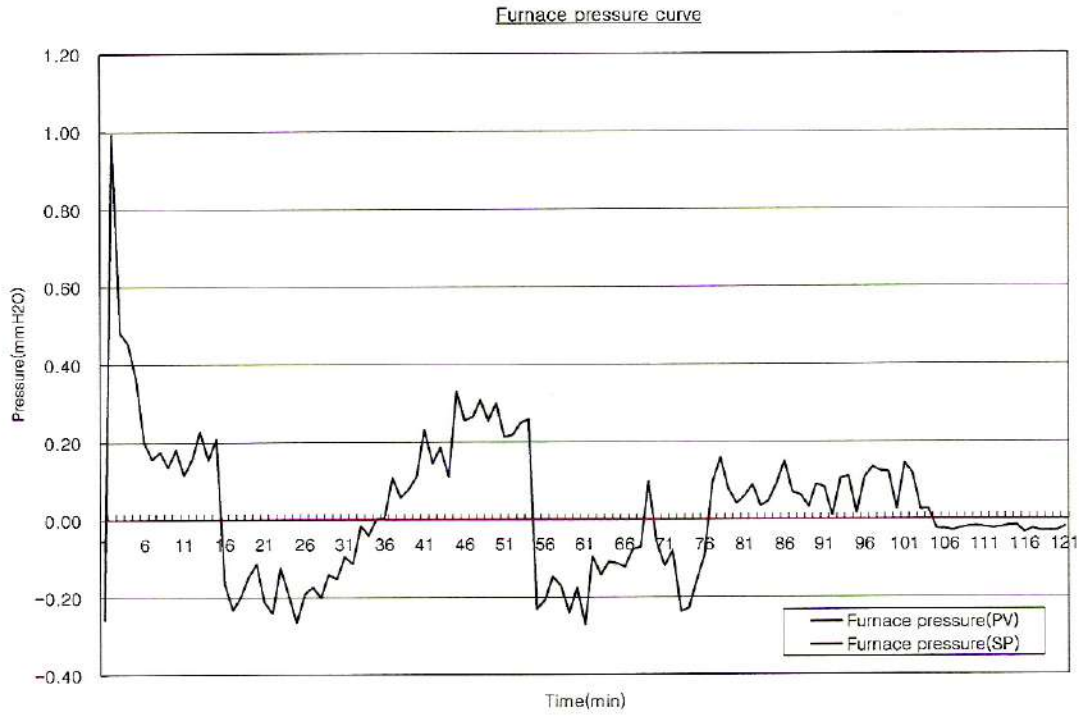
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B. Temperature-time curve



### Appendix 4. Furnace pressure curve



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### Appendix 5. Observation

Time(min)	Observation
00:00	Test started
00:03	Slight smoke began to be released from the top of the test specimen.
00:17	The test specimen began to be bent toward the furnace.
00:37	whole specimen unexposed surface getting dark
01:19	The test specimen began to be red hot
02:00	The test was terminated.

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Appendix 6. Test photography



Before the test



After the test

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