




**FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY
FIRE SAFETY RESEARCH CENTER**



- TYPE OF TEST** : DETERMINATION OF THE FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION
- TEST SPECIMEN** : **WIRE GLASS STEEL DOOR LEAF**
The specimen is a single-sided **WIRE GLASS STEEL DOOR LEAF** of dimension 816 mm x 1860 mm x 6.8 mm. The specimen was mounted in a 15 cm thick reinforced concrete wall, which was cast to the 3 m x 3 m testing frame. The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.
- CLIENT** : AGC FLAT GLASS (THAILAND) PLC.
200 Moo 1, Suksawat Rd, Pak Khlong Bang Pla Kod
Phra Samut Chedi, Samut Prakan 10290
Tel: (66) 2815-5000 Fax: (66) 2815-7375-6
- DATE OF TEST** : June 30, 2008
- TEST MACHINE** : Large-scale vertical furnace (Fire Tester III) at the Fire Safety Research Center, Department of Civil Engineering, Chulalongkorn University (Thailand). The furnace is capable of producing a standard temperature-time relationship according to several fire resistance standards including BS 476 Part 20: 1987.
- TEST METHOD** : The testing procedures follow the British Standard BS 476: Fire tests on building materials and structures as follows:
BS 476 Part 20: 1987: Method for determination of the fire resistance of elements of construction (general principles)
BS 476 Part 22: 1987: Methods for determination of the fire resistance of non-loadbearing elements of construction Section 10: Determination of the fire resistance of glazed elements.
- TEST RESULTS** : The non-loadbearing element of construction described above has the fire resistance of each criterion for the period stated:
(The test results are good only for the specimen tested.)

Criteria	Fire Resistance (hr:min)	Remarks
Insulation	0:05	The average temperature of the unexposed face of the specimen exceeded 140°C above its initial value of 37°C.
Integrity	0:19	The middle part of the door leaf was hot enough to ignite the cotton pad.

Date: July 31, 2008

Tested by: 
(Assistant Prof. Dr. Suched Likitlersuang)


(Associate Prof. Dr. Thanyawat Pothisiri)


(Associate Prof. Dr. Chadchart Sittipunt)

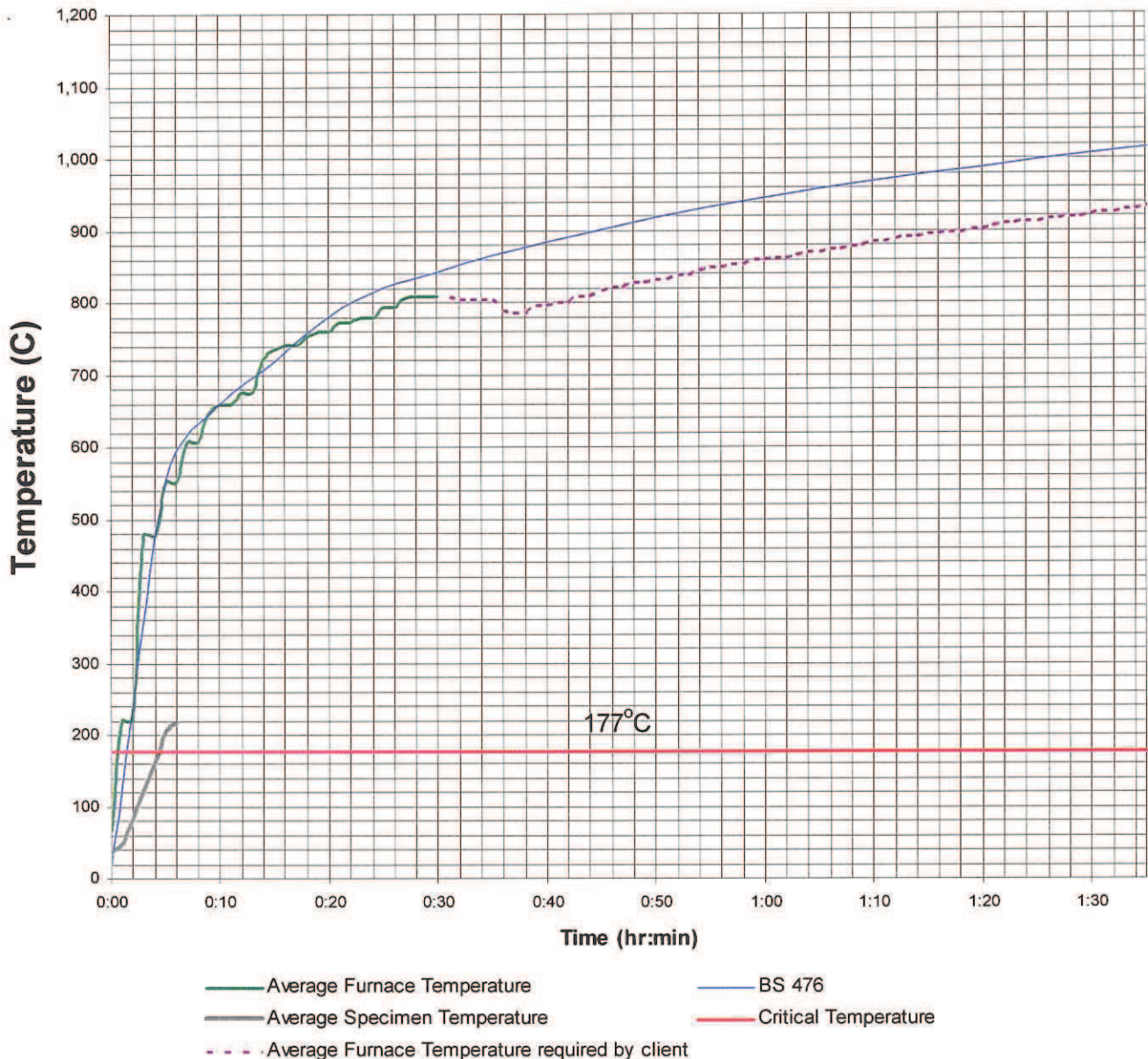

(Assistant Prof. Dr. Chatpan Chintanapakdee)
On Behalf of Head of Civil Engineering Department



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FURNACE TEMPERATURE



REMARKS: The furnace temperature followed BS 476 until 0:30 hr. The test was continued afterwards upon the requirement of the client for complying with JIS: 60 minutes after test start, no interstice shall be produce between pane and frame.



(Mr. Pongsak Malai)
Authorized Testing Officer

APPENDIX B: OBSERVATIONS

No.	Time (hr:min)	Observations
1	0:01	Cracking of the wire glass door leaf at the top-left corner
2	0:05	<u>Insulation failed</u> , continued cracking of the wire glass door leaf
3	0:06	The thermocouples were removed from the unexposed face
4	0:19	<u>Integrity failed</u> , the cotton pad test was performed and the middle part of the wire glass door leaf was hot enough to ignite the cotton pad
5	0:30	The furnace temperature did not follow BS 476 after 0:30 hr.
6	1:28	The lower part of the wire glass door leaf deformed
7	1:30	Although, the test did not follow BS 476 after 0:30 hr, the specimen glass could protect the leakage of flames, hot gas and smoke passing through until 1:30 hr.
8	1:32	The upper part of the wire glass door leaf deflected and there was a passage of flame from the top-middle part of the wire glass door leaf.
9	1:36	The top-middle part of the wire glass door leaf fell down from the steel frame.
10	1:37	The test was terminated

REMARKS: It is noted that the integrity of the wire glass door leaf failed at 0:19 hr. However, the test was continued upon the requirement of the client.



(Mr. Pongsak Malai)
Authorized Testing Officer