



**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** : **DM. 8 (Diamond Door)**
The specimen is a doorset consisting of double-sided steel door leaves with steel door frame. The dimensions of each door leaf are 2000 mm x 900 mm x 40 mm. The specimen was mounted in a 15 cm thick reinforced concrete wall, which was installed on the 3 m x 3 m testing frame. Each door leaf consisted of 1.6-mm thick cold rolled steel panels with rock wool blankets of 110 kg/m³ density in between. The door leaves were locked with the door frame by two panic bars (vertical type). The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.
- CLIENT** : **THAI STEEL DOOR LIMITED PARTNERSHIP**
89 Moo 14 Kingkaew Road, Rajateva
Bangplee, Samutprakan 10540, Thailand
- DATE OF TEST** : August 6, 2010
- TEST MACHINE** : Large-scale vertical furnace (Fire Tester III) at the Fire Safety Research Center (FSRC), Department of Civil Engineering, Chulalongkorn University (Thailand). The furnace is capable of producing a standard temperature-time relationship according to BS 476 Part 20: 1987.
- TEST METHOD** : The testing procedures follow the British Standard BS 476: Fire tests on building materials and structures
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 6: Determination of the fire resistance of fully insulated doorsets and shutter assemblies.
- 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	0:33	The average temperature of the unexposed face of the specimen exceeded 140°C above its initial value of 31°C.
Integrity	4:01	The specimen had a passage of flame or gases hot enough to ignite the cotton pad.

Date: August 13, 2010

Tested by:

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On Behalf of Head of Civil Engineering Department