Reference No. FSRC-007/65

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 : **Fire Steel Door, Model: FRN-D00P-2400x2400-CCW**
Double Door, Overall Size 2400x2400 mm, Flush Style with Mortise Lock

The specimen is a doorset consisting of double-sided steel door leaves and a steel door frame. The dimensions of each door leaf are 2337 mm x 1160 mm x 45 mm (overall dimensions: 2337 mm x 2324 mm x 45 mm). The door leaf is constructed of 1.5-mm thick cold rolled steel sheet in-filled with ceramic fiber with a density of 96 kg/m^3. The specimen was mounted in a 15-cm thick reinforced concrete wall, which was installed on the 3 m x 3 m testing frame. The door leaves were locked with the door frame by a mortise lock and 8 stainless steel hinges. Smoke seal was installed around the inner perimeter of the door frame. The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.

CLIENT : **PCJ INDUSTRIES CO., LTD.**
199/24-25 Vibhavadee Rangsit Road
Samsennai, Phayathai, Bangkok 10400, Thailand

DATE OF TEST : February 3, 2022

TEST MACHINE : Large-scale vertical furnace 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	0:19	The maximum temperature of the unexposed face of the specimen exceeded 180°C above the initial mean value of 30°C.
Integrity	4:00	During the test, all integrity criteria were fulfilled (no sustained flaming and no through gap such that the 6 mm diameter gap gauge could penetrate).

Date: February 17, 2022

Tested by: ..... Checked by: .....
(Associate Prof. Dr. Akhrawat Lenwari) (Professor Dr. Thanyawat Pothisiri)

.....
(Associate Prof. Dr. Tirawat Boonyatee)
On Behalf of Head of Civil Engineering Department

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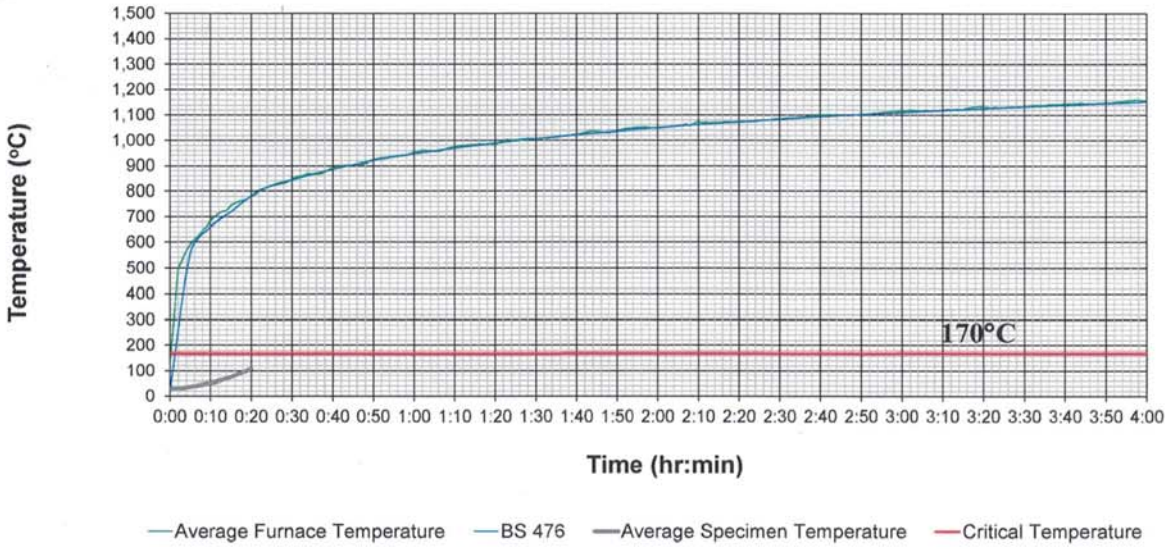
FURNACE TEMPERATURE



(Dr. Sirichai Pethrung)
Authorized Testing Officer