



**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** : **"SPR" Steel Fireproof Door with Glass Vision Size 1100x2400 mm**
 The specimen is a doorset consisting of a single-sided steel door leaf with a vision panel and a steel door frame. The dimensions of the door leaf are 2200 mm x 1100 mm x 45 mm. The door leaf has a fixed 150 mm x 400 mm FireLite Glass Ceramic (5 mm) vision panel located at the height of 1300 mm measured from its lower edge. The door leaf is constructed of 1.6-mm thick cold rolled steel sheet in-filled with rock wool with a density of 100 kg/m³. The specimen was mounted on a 15-cm thick reinforced concrete wall, which was installed on a 3 m x 3 m testing frame. The door leaf was locked with the door frame by a panic bar and 5 stainless steel hinges. Intumescent fire 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** : **SUPA RICH CO., LTD.**
 27 Ramintra Soi 48, Ramintra Road, Kannayao
 Kannayao, Bangkok 10230, Thailand
- DATE OF TEST** : November 5, 2019
- 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 7: Determination of the fire resistance of partially 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	0:17	The average temperature of the unexposed face of the specimen exceeded 140°C above its initial value of 31°C.
Integrity	4:00	The test was terminated by the client. 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: November 19, 2019

Tested by:
 (Associate Prof. Dr. Tirawat Boonyatee)

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 (Professor Dr. Thanyawat Pothisiri)

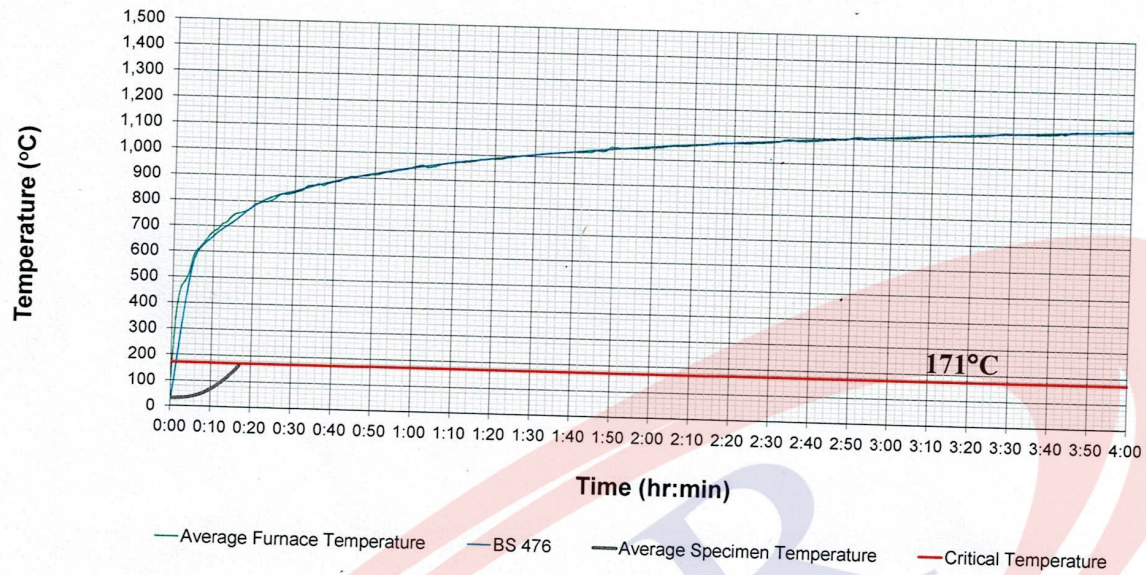
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 (Associate Prof. Dr. Tirawat Boonyatee)
 On Behalf of Head of Civil Engineering Department



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FURNACE TEMPERATURE

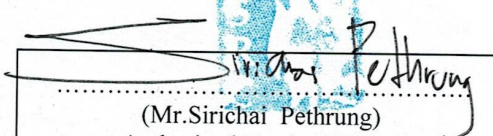



(Mr. Sirichai Pethrung)
Authorized Testing Officer

APPENDIX D: PHOTOGRAPHS

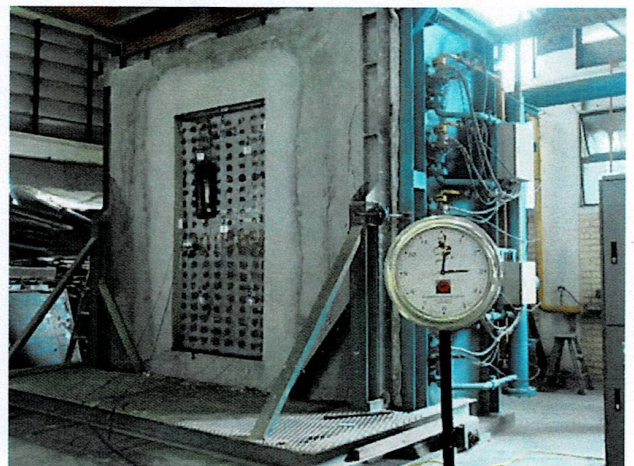


Figure D-1: Specimen preparation prior to the test


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Authorized Testing Officer



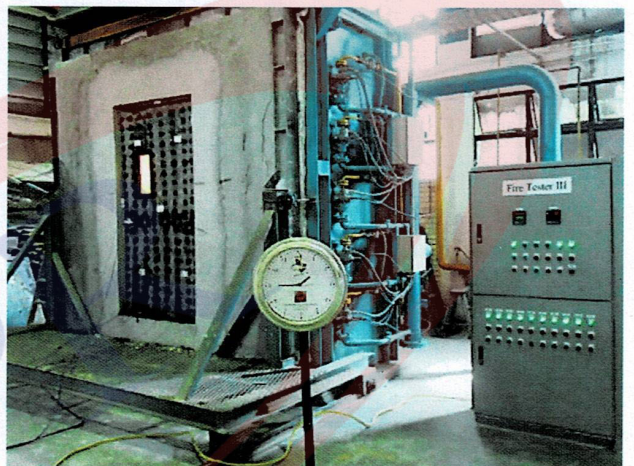
(a) 0:00 hr



(b) 0:15 hr



(c) 0:30 hr



(d) 0:45 hr

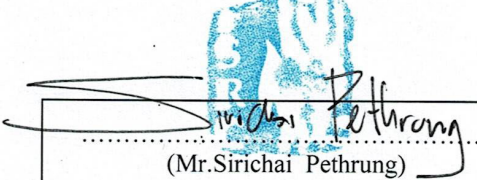


(e) 1:00 hr



(f) 1:15 hr

Figure D-2: The specimen during the test


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Authorized Testing Officer



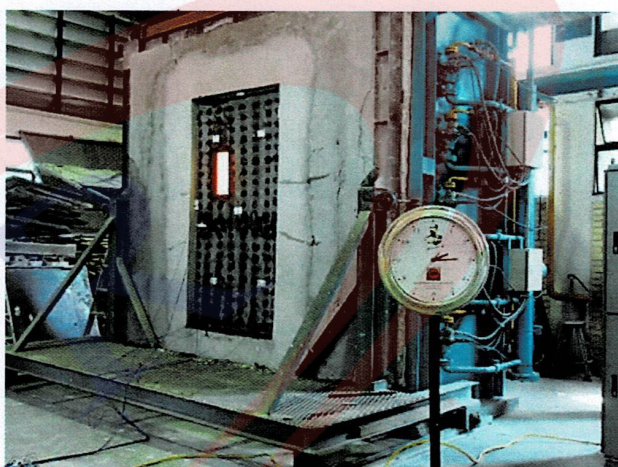
(g) 1:30 hr



(h) 1:45 hr



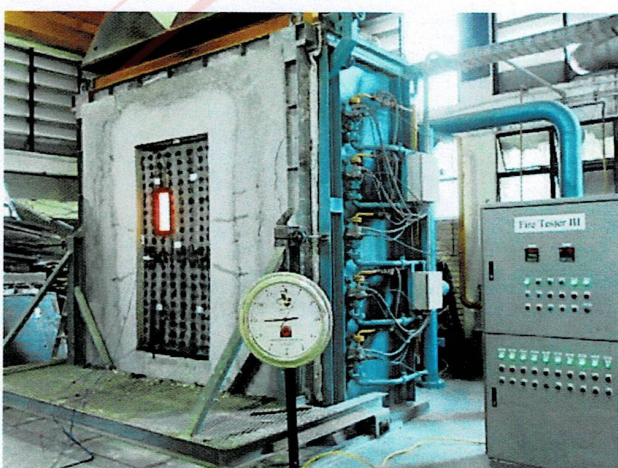
(i) 2:00 hr



(j) 2:15 hr

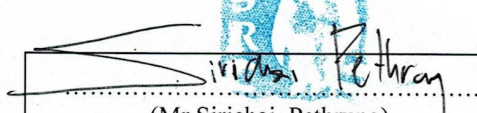


(k) 2:30 hr



(l) 2:45 hr

Figure D-2 (continued): The specimen during the test


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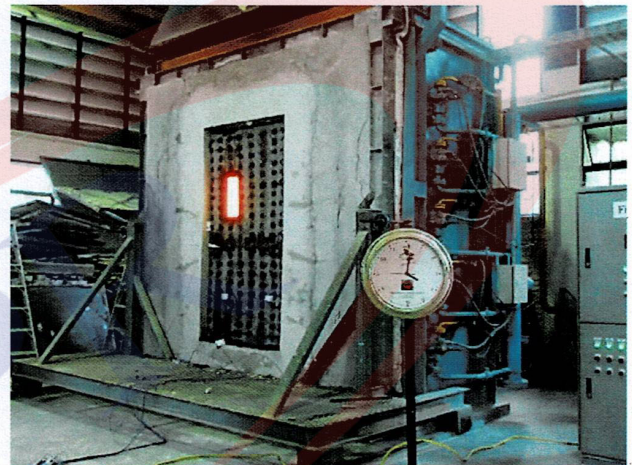
(m) 3:00 hr



(n) 3:30 hr



(o) 3:45 hr



(p) 4:00 hr

Figure D-2 (continued): The specimen during the test

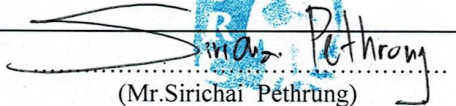

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Figure D-3: The specimen after the test


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