



**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** : SmartBoard
- The specimen is a 3 m x 3 m vertical construction consisting of a double layer of 2-1200 mm x 3000 mm x 12 mm and 1-600 mm x 3000 mm x 12 mm fibre reinforced cement flat sheets (SmartBoard) in a sandwich construction with 50 mm thick rockwool of 100 kg/m³ density in the middle. The fibre reinforced cement sheets were installed to the 3m x 3m testing frame using light lip channel sections C-75 x 45 x 15 x 2.3 mm as the frame edges and as the vertical studs with 0.6 m spacing. The SmartBoards were fixed to the light lip channel frame using 45 mm long screws. The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.
- CLIENT** : The Siam Fibre-Cement Co.,Ltd.
1 Siam Cement Road, Bangsue
Bangkok 10800
Thailand
- DATE OF TEST** : March 19, 2007
- 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 BS476 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 5: Determination of the fire resistance of partitions.
- 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	2:12	The maximum temperature of the unexposed face of the specimen exceeded 180 °C above its initial value of 33 °C.
Integrity	2:30	The test was terminated. No visible sign of damage or leak of the specimen and no passage of flame or gases hot enough to ignite the cotton pad.

Date: October 4, 2007

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On Behalf of Head of Civil Engineering Department