



**FACULTY OF ENGINEERING  
CHULALONGKORN UNIVERSITY  
FIRE TESTING LABORATORY**

**TYPE OF TEST** : DETERMINATION OF FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION

**TEST SPECIMEN** : FULLY INSULATED METAL FIRE DOOR

**DOOR TYPE** : FIRE RESISTANT STAINLESS DOOR (SD)  
**MODEL** : SD (ROCKWOOL)  
**DOOR INFILL** : ROCKWOOL (Density 110 kg/m<sup>3</sup>)  
**FRAME TYPE** : Single rebate and fire resistant seal; Material 1.5t SUS 304 HL. (With sill)  
**FRAME SIZE** : 2038 x 2125 mm.  
**DOOR SIZE** : 2 x 1013 x 2110 mm (Double door)  
**DOOR HINGE** : PLUS K-42-II  
**LOCK SET** : Goal UCSO BS-64  
**DOOR CLOSER** : DAIHATSU NHN-184  
**FLUSH BOLT** : HIWIN

The specimen was mounted in an 15-cm thick reinforced concrete wall, which was cast to the testing frame. Details of the specimen is shown in Page 3 of this report. The specimen was provided and installed to the testing frame by the client.

**CLIENT** : SUN METAL CO.,LTD.

**DATE OF TEST** : May 24, 2000

**TEST MACHINE** : Large-scale furnace at the Fire Testing Laboratory, Department of Civil Engineering Chulalongkorn University. 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** : 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 element of construction described above satisfied the following criteria for fire-resistance for the period stated: (The test results are good only for the specimen tested.)

Criteria	Fire Resistance	Remarks
Insulation	63 minutes	Maximum increase in temperature on an unexposed face of the left door exceeded 180 °C
Integrity	240 minutes	No failure observed at 241 minutes



(Assistant Prof. Dr. Boonchai Sittmanathum)

On behalf of Head of Civil Engineering Department

Date : May 31, 2000

Tested by



(Dr. Chaochart Sittipunt)