



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

- TYPE OF TEST** : DETERMINATION OF FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION
- TEST SPECIMEN** : **UNINSULATED METAL FIRE SHUTTER**
SPECIMEN TYPE : STEEL SHUTTER
OPENING SIZE : 982X2044 MM
SLAT : Steel 1.2 mm thick
OUTSIDE LINTEL : L-50x50x4 L-30x30x3 (Steel)
SHUTTER INFILL : None
 The specimen was mounted in an 15-cm thick reinforced concrete wall, which was cast to the testing frame. Concrete lintel was also cast at the bottom of the specimen to be landing for a bottom bar of the shutter. Details of the specimen are shown in Page 3-4 of this report. The specimen was provided and installed to the testing frame by the client.
- CLIENT** : Sun Metal Co.,Ltd.
- DATE OF TEST** : 11 August 2001
- 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 8: Determination of the fire resistance of uninsulated 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
Integrity	120 minutes	No failure observed at 121 minutes



(Assistant Prof. Dr. Boonchai Stitmanathum)
On behalf of Head of Civil Engineering Department

Date : September 13, 2001



Tested by

(Dr. Chachart Sittipunt)