RESEARCH ENGINEERING DEVELOPMENT FAÇADE CONSULTANTS LIMITED -
Fire and Facade Testing Laboratory
雄略幕牆顧問有限公司 - 消防及幕牆檢測實驗中心
DD134, Lung Kwu Tan, Tuen Mun, N.T., Hong Kong

HOKLAS 091 TEST

FIRE RESISTANCE TEST IN ACCORDANCE WITH BS EN 1634-1: 2008

On A specimen Incorporated with 2 nos. of Fully Insulated Single-acting Composite Timber Doorsets Separated by a Common Door Frame

Test Report No.: R17C16-1A
Identification No.: Q17B53

Issue Date: 12 July 2017

Testing Location:
RED Hong Kong Main Laboratory
DD 134, Lung Kwu Tan, Tuen Mun,
N.T., Hong Kong

Test Sponsor

Faith Mark Consultants Limited
G/F, 120 Camp Street, Sham Shui Po, Kowloon, Hong Kong

APPROVED SIGNATORY: _____ **DATE:** 12 JUL 2017

Ir. Dr. YUEN Sai-wing, MHKIE (FIRE)

push bar was installed at unexposed side of left door leaf. A 'KW' flush bolt was installed at top and bottom edges of right door leaf. The doorset was unlatched, unlocked and unbolted during the test.

Doorset 'B' was single-leaf configuration and had overall dimensions of 1,246 mm wide by 2,800 mm high by 110 mm frame thickness. It was comprised of a composite door frame with a door leaf which was constructed by nominal 37 mm thick ceramic wool core, sandwiched by 9 mm thick fire rated boards with nominal 2.5 mm thick plywood facings and 1 mm thick plastic laminate on both sides (refer to test sponsor's drawings). The door leaf was with sizes of 1,200 mm wide by 2,753 mm high by nominal 62 mm thick and was hung to the door frame by 4 nos. of 'KW' stainless steel butt hinges. The door leaf was incorporated with 2 nos. of nominal 42 mm thick 'Mingan' glazed panel with vision sizes of 200 mm wide by 500 mm high at the bottom portion and 300 mm wide by 1,500 mm high at the top portion. 1 no. of 'Vica' fire seal with sizes of 40 mm wide by 4 mm thick was installed at top and both vertical edges of door leaf. 1 no. of 'Fan Qiu' bottom drop seal was installed at bottom edge of door leaf. 1 no. of 'Lorient' fire seal with sizes of 15 mm wide by 4 mm thick was installed at each jamb and head of door frame. 1 no. of 'Vica' smoke seal with sizes of 12 mm by 12 mm was installed at jambs and head of door frame. A 'RYOBI' surface mounted overhead door closer was installed at unexposed side of door leaf. A 'KW' handle was installed at both exposed and unexposed sides of door leaf.

The specimen was installed into a partition boards wall system as the supporting construction. It was comprised of 2 layers of nominal 12 mm thick 'Promatect-H' fire rated boards mounted on each side of steel framework. The steel framework was constructed with top & bottom runners with sizes of 50 mm by 75 mm by 50 mm by nominal 1 mm thick C-channel and vertical wall C-studs with sizes of 50 mm by 75 mm by 50 mm by nominal 1 mm thick were fixed at 200 mm nominal centres. A layer of nominal 50 mm thick rockwool with density of 100 kg/m^3 was filled at the cavity of the steel framework. The top & bottom runners were fixed to the concrete testing rig by M6 with 74 mm long anchor bolts at 500 mm nominal centres and all boards were fixed to the framework by M4 self-tapping screws.

The specimen satisfied the performance requirements specified in BS EN 1634-1: 2008 for the following periods:

<u>Doorset 'A'</u>

Integrity:	**Cotton Pad**	**132** Minutes (No failure)
	Gap Gauge	**132** Minutes (No failure)
	Sustained Flaming	**132** Minutes (No failure)
Insulation (I_1 doorset excluding transom and glazed panels):		**132** Minutes
Insulation (I_1 transom panel):		**132** Minutes
Insulation (Glazed panel):		**131** Minutes

Doorset 'B'

Integrity:	**Cotton Pad**	**132** Minutes (No failure)
	Gap Gauge	**132** Minutes (No failure)
	Sustained Flaming	**132** Minutes (No failure)
Insulation (I_1 doorset excluding glazed panels):		**132** Minutes
Insulation (Bottom glazed panel):		**132** Minutes
Insulation (Top glazed panel):		**130** Minutes

The test was discontinued after a heating period of 132 minutes.

2 INTRODUCTION

The objective of the test is to determine the fire resistance performance of a specimen incorporated with 2 nos. of fully insulated single-acting composite timber doorsets separated by a common door frame when tested in accordance with BS EN 1634-1: 2008, 'Fire resistance tests for door and shutter assemblies – Part 1: Fire doors and shutters'.

This test report should be read in conjunction with BS EN 1363-1: 2012, 'Fire resistance tests – Part 1: General requirements'.

3 TEST INFORMATION

3.1 Test Sponsor

Faith Mark Consultants Limited
G/F, 120 Camp Street, Sham Shui Po, Kowloon, Hong Kong.

3.2 Testing Location

Research Engineering Development Façade Consultants Limited, Hong Kong Main Laboratory of DD 134, Lung Kwu Tan, Tuen Mun, New Territories, Hong Kong.

3.3 Date of Test

10th April 2017

3.4 Witness of the test

The test was led by Mr. Solaris Chan of Research Engineering Development Façade Consultants Limited (RED) and was witnessed by Mr. H.F. Chan and Mr. S.K. Kwan, the representatives of the test sponsor.