Chiltern House Stocking Lane Hughenden Valley
High Wycombe Buckinghamshire HP14 4ND UK

t +44 (0) 1494 569800 f +44 (0) 1494 564895
e cif@chilternfire.co.uk w www.chilternfire.co.uk

CONFIDENTIAL

Test Report : Chilt/IF04007

A fire resistance test performed on a penetration sealing system fitted within a blockwork floor slab

Test conducted in accordance with the general principles of BS 476: Parts 20 and 22: 1987

Test Date: 30 January 2004

Test for : **Tenmat Ltd**
Ashburton Road West
Trafford Park
Manchester
M17 1RU

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This document is confidential and remains the property of Chiltern International Fire Ltd

The legal validity of this report can only be claimed on the presentation of the complete report. All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

UKAS TESTING
No. 1762

A member of the TTL Chiltern Group of companies Registered Number 3125010 England
Chiltern International Fire Ltd. Registered office: Chiltern House, Stocking Lane, Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND UK.

Contents

The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

1 Introduction

Seven specimens were tested during this test but only one is subject to this report.

The ducts, pipes and sleeves were supplied for test by the client and delivered on 27 January 2004. Chiltern International Fire Limited (CIFL) constructed block work supporting construction and installed the specimens into the supporting construction.

2 Specification

2.1 Supporting construction

The horizontal supporting construction was a 1500mm x 1500mm x 140mm thick Thermalite block work floor slab.

The duct was supported on the unexposed face only.

2.2 Specimen specifications

Specimen F was a 1100mm long, 180mm deep x 95mm wide PVC duct with a 1.7mm thick wall. The pipe was fitted within the block work slab so that 500mm of the duct was protruding on the unexposed face. The duct was located 845mm from the rear of the furnace and 570mm from the left. A Tenmat FF101M 8mm intumescent sleeve was fitted around the duct, centrally within the block work slab.

A mineral fibre plug was inserted to both ends of the duct to simulate a continuous run.

3 Test conditions

3.1 Where areas of the test specification are ambiguous or open to interpretation the Fire Test Study Group Resolutions No's 70, 71 and 72 have been followed (further specific details are available on request). These Resolutions provide basis of common agreements between the fire test laboratories which are members of this Group.

3.2 The ambient temperature of the test area at commencement of test was 6°C.

3.3 After the first eight minutes of the test, the furnace pressure was maintained at 20 ± 2 Pa with respect to atmosphere underside of the block work slab.

3.4 The furnace was controlled to follow the temperature/time relationship specified in BS 476: Part 20: 1987 as closely as possible, using the average of four thermocouples suitably distributed within the furnace on the vertical plane. The temperatures recorded are shown graphically in Section 7.1.

3.5 The temperature of the unexposed surface of the duct was monitored by means of a thermocouple fixed to the surface of the duct, 25mm from the unexposed face of the slab and a thermocouple fixed on the surface of the slab 25mm from the duct. The temperature of the duct is shown graphically in Section 7.2.

The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

4 Test results

When tested in accordance with the general principles BS 476: Part 20: 1987, the requirements of the standard were satisfied for the following periods:

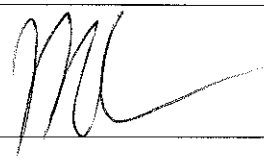
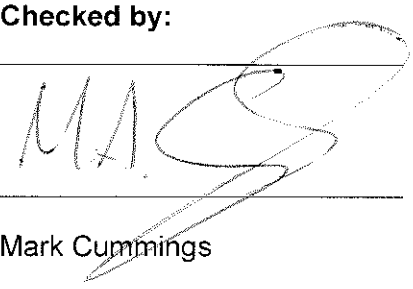
	Insulation	Integrity
Specimen F	**133 (one hundred and thirty three) minutes***	**133 (one hundred and thirty three) minutes**

* The test was terminated and the specimen had not failed the integrity criteria at this time.

5 Limitations

The results only relate to the behaviour of the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they reflect the actual behaviour in fires.

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. CIFL will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

	Written by:	**Checked by:**
Signature:		
Name:	Jonathan Osborn	Mark Cummings
Title:	Technical Manager	Fire Test Engineer
Date of issue:	27/4/06	

The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

6 Observations

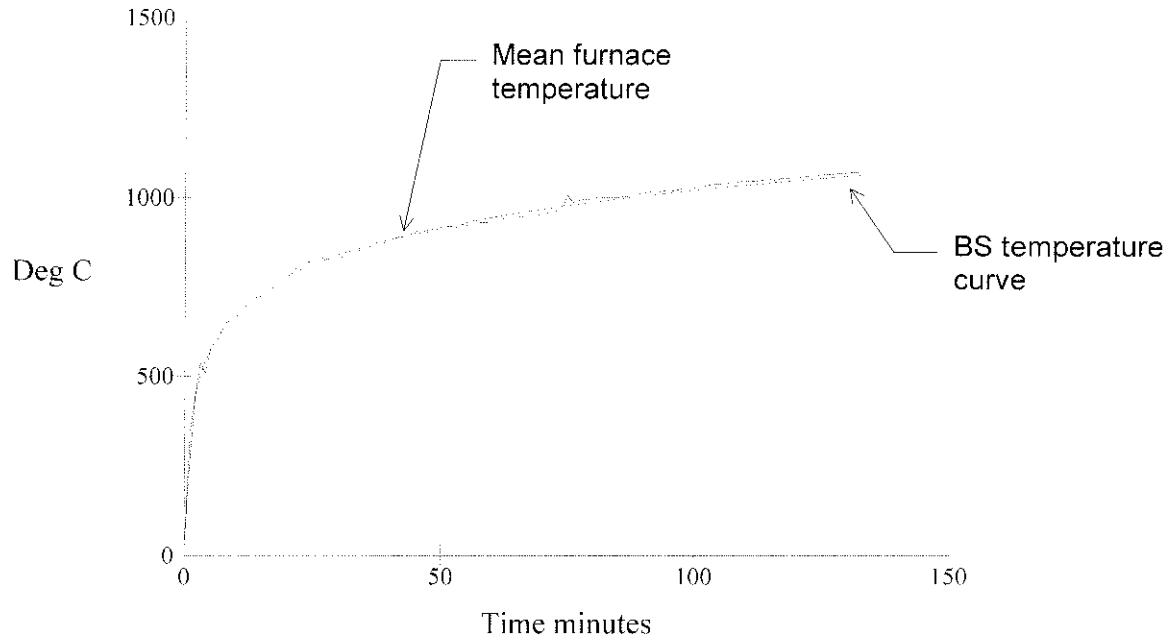
All comments relate to the unexposed face unless otherwise specified.

Time (minutes)	Comments
00.00	Test started.
01.30	There is smoke issuing from the all apertures.
05.16	All pipes are melting at the point where the pipes enter the slab on the unexposed face.
08.40	There is an increase in the level of smoke issuing from the penetrations.
38.54	F, the intumescent wrap is visible from the unexposed face.
60.00	Specimen satisfactory
120.00	Specimen satisfactory
133.37	Test terminated.

The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

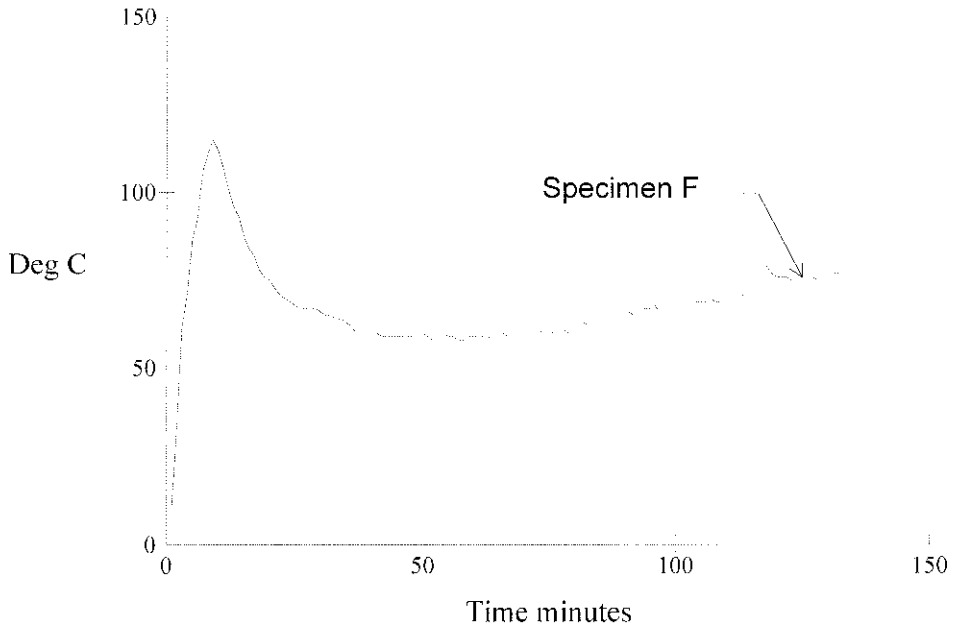
7 Furnace temperature curve

7.1 Furnace temperature curve



7.2 Unexposed face temperature curve of specimen F

Maximum temperatures of duct

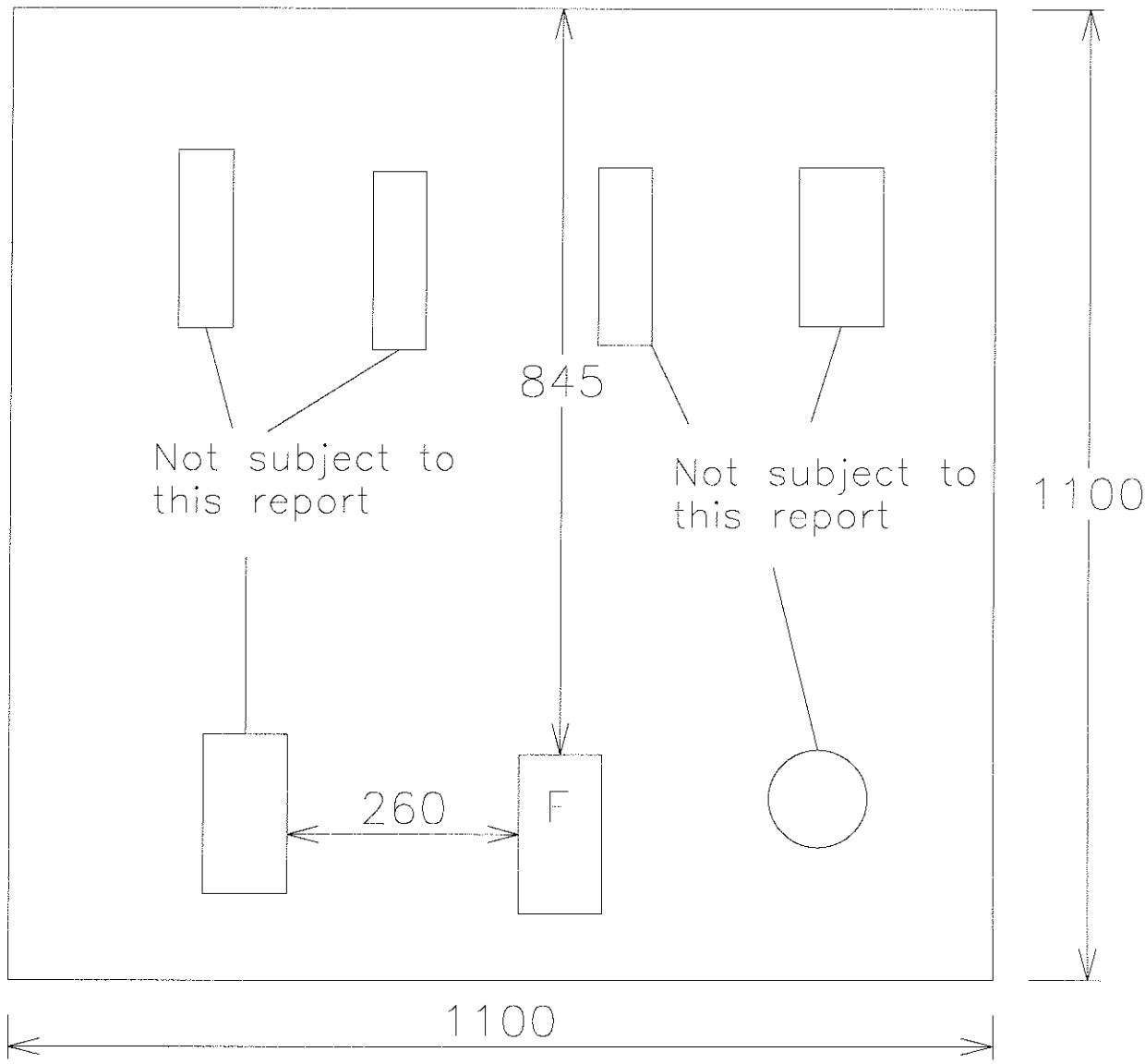


The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.

8. Key to figures

1. Penetrating service
2. 140mm thick blockwork floor slab
3. Penetration sealing system
4. Mineral fibre bung

The legal validity of this report can only be claimed on presentation of the complete report.
All pages of original copies of this document are embossed with the Chiltern International Fire Ltd name and logo.



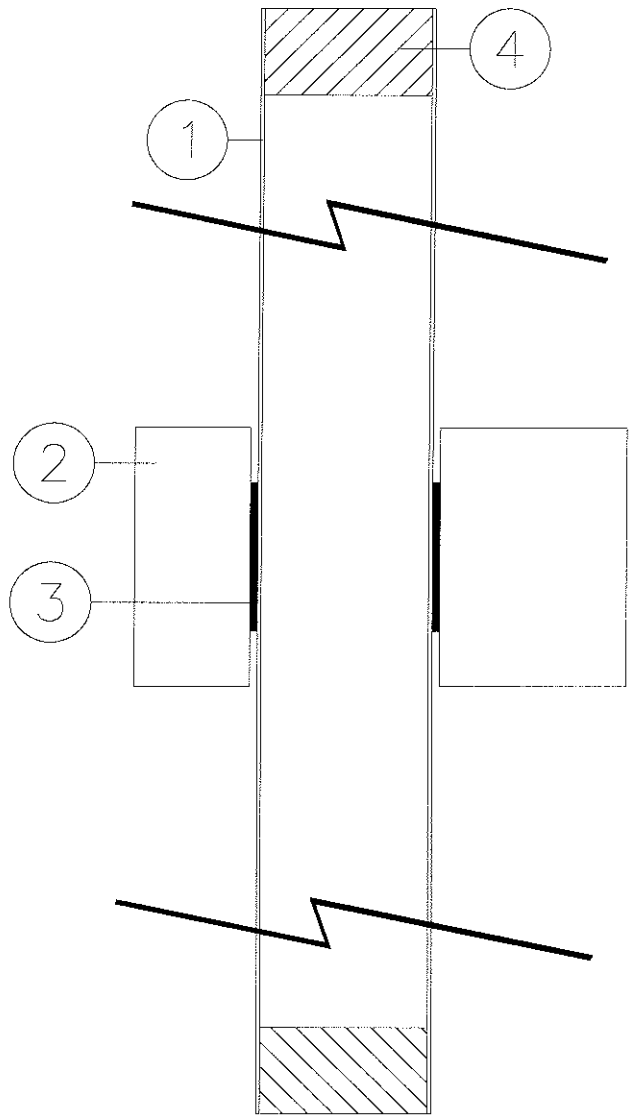
Chiltern INTERNATIONAL FIRE
Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.
Tel: +44 (0)1494 569800 Fax: +44 (0)1494 564895

Title: Unexposed face of block work slab showing penetration locations (All dimensions in mm)

Date Drawn	Drawn By	Scale
13/02/04	AE	NTS

Project No. Chilt/IF04007

F



Chiltern INTERNATIONAL FIRE
Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.
Tel: +44 (0)1494 569800 Fax: +44 (0)1494 564895

Title	Cross section showing penetration sealing system (All dimensions in mm)	
Date Drawn 4/02/04	Drawn By AE	Scale NTS
Project No. Chilt/IF04007		Page 9 of 9