SAMUEL HEATH
since 1820

30-minute fire resistance test
in accordance with BS EN 1634-1
Powermatic (R100) concealed door closer

Independent fire assessments for all products are effective for a five year period.

Where products have not been subject to changes in specification and there have been no changes in the performance standard against which the original assessment was made, it is common practice for the assessment to be reviewed by the independent authority, rather than a completely new assessment being conducted.

In such cases, the authority issues a report which extends the assessments validity, normally for a further five years.

This document contains both the original assessment and appropriate review report.

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Testing. Advising. Assuring.

25th April 2014

Mr M. Stonelake
Samuel Heath & Sons plc
Leopold Street
Birmingham
B12 OUJ

Review of Assessment Report Referenced WFRC No. 139836 issue 2

1 Introduction

The assessment referenced WFRC Report No. 139836 issue 2 presented a considered opinion regarding the expected fire resistance performance of single-acting, single-leaf timber based doorsets, when fitted with a modified R100 Perko door closer (ref. R100 Perko-Powermatic).

The appraisal report concluded that should the recommendations given in the report be followed, it could be concluded that previously fire tested (or assessed by warringtonfire or covered by CERTIFIRE certification) timber doorsets which have achieved 30 minutes integrity and, where applicable insulation, may be fitted with an R100 Perko-Powermatic door closer as discussed in the report, without detracting from the overall performance of the doorset.

2 Confirmation of Specification

It has been confirmed by Samuel Heath & Sons plc that there have been no changes to the specification of the door closer considered in the original appraisal referenced WFRC Report No. 139836 issue 2.

3 Conclusions

The data used for the original appraisal has been re-examined and found to be satisfactory.

The procedures adopted for the original assessment have also been re-examined and are similar to those currently in use.

Therefore, with respect to the assessment of performance given in WFRC Report No. 139836 issue 2, the contents should remain valid until the 1st May 2019.

4 Validity

This review is based on information used to formulate the original assessment. No other information or data has been provided by Samuel Heath & Sons plc which could affect this review.

The original appraisal report was performed in accordance with the principles of the UK Fire Test Study Group Resolution 82: 2001. This review has therefore also been conducted using the principles of Resolution 82: 2001.

Performed by:

D Forshaw
Principal Certification Engineer

Reviewed By:

A Kearns
Technical Manager
Exova Warringtonfire

WFRC Assessment Report
No. 139836
The Fire Resistance Performance Of
An R100 Perko-Powermatic Door Closer
When Fitted To Previously
Fire Tested Timber Doorsets

Report for

Samuel Heath & Sons Plc

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Executive Summary

Objective	To present a considered opinion regarding the expected fire resistance performance of single-acting single-leaf timber based doorsets, when fitted with a modified R100 Perko door closer (ref. R100 Perko-Powermatic), as referenced in the Proposal section of this report.
Report Sponsor	**Samuel Heath & Sons Plc**
Address	**Leopold Street** **Birmingham** **B12 0UJ**
Summary of Conclusions	Should the recommendations given in this report be followed, it can be concluded that previously fire tested (or assessed by Warrington Fire Research Centre or covered by CERTIFIRE certification) timber doorsets which have achieved 30 minutes integrity and, where applicable insulation, may be fitted with an R100 Perko-Powermatic door closer as discussed in this report, without detracting from the overall performance of the doorset.
Valid until	1st June 2009

Introduction

This report presents a considered opinion regarding the expected fire resistance performance of single-acting single-leaf timber based doorsets, when fitted with an R100 Perko-Powermatic door closer as referenced in the Proposal section of this report.

The proposed doorsets are required to provide a fire resistance performance of 30 minutes integrity and, where applicable, insulation with respect to EN 1634-1:2000.

FTSG/PFPF

The data referred to in the supporting data section has been considered for the purpose of this appraisal which has been prepared in accordance with the Fire Test Study Group Resolution No. 82:2001 and the Passive Fire Protection Federation (PFPF) Guide to Undertaking Assessments in Lieu of Fire Tests.

Assumptions

It is assumed that the proposed R100 Perko-Powermatic door closers will be fitted to timber based doorsets which have previously been shown to be capable of providing 30 minutes integrity and, where applicable, insulation in a single-acting, single leaf configuration.

Installation

It is assumed that the timber doorsets will be installed in a similar manner to that of the previously tested assembly by competent installers.

Supporting wall

It is also assumed that the construction of the wall, which supports the proposed doorsets, will have been the subject of a separate test and the performance of the wall is such that it will not influence the performance of the doorset for the required period.

Clearance gaps

Door leaf to frame clearance gaps can have a significant effect on the overall fire performance of a doorset. It is therefore assumed that the leaf to leaf and leaf to frame clearance gaps will not exceed those measured for the relevant fire tested doorset. In addition, it is assumed that the door leaves will be in the closed position.

Proposals

R100 Perko-Powermatic Door closers

It is proposed that an R100 Perko door closer, modified to include a reduction in overall dimension from that previously tested and subsequently referenced 'R100 Perko-Powermatic', may be fitted to previously fire tested (or assessed by Warrington Fire Research Centre or covered by CERTIFIRE certification) timber doorsets which have achieved 30 minutes integrity and where applicable insulation performance, in accordance with recommendations given in this report without detracting from the overall performance of the doorset.

Basic Test Evidence

WARRES No. 114743

The fire test evidence is provided by test report referenced WARRES No. 114743, which is described briefly in the supporting data section of this report. The report describes a full scale fire resistance test carried out in accordance with EN 1634-1: 2000, which was conducted on two specimens of fully insulated single-acting, single-leaf, timber doorsets.

It is important however, to determine the basic parameters provided by the test report:

For the purpose of the test the specimens were referenced 'Doorset A' and 'Doorset B'. Doorset B was positioned such that it opened towards the heating conditions of the test and Doorset A was positioned such that it opened away from the heating conditions. Both doorsets were unlatched for the duration of the test.

Each doorset had overall dimensions of 2015 mm high x 822 mm wide and incorporated a flaxboard cored door leaf of overall dimensions of 1981 mm high x 761 mm wide x 43 mm thick. Both doorsets also incorporated a door closer referenced 'R100', such that the body was inserted into the door leaf, with the centre of the closer body positioned at 700 mm above the doorset threshold. The closers were bedded on intumescent mastic.

Assessed Performance

The proposals require an R100 Perko-Powermatic door closer as detailed above, to be fitted to previously fire tested (or assessed by Warrington Fire Research Centre) timber doorsets when modified with a reduction to the overall unit size.

As this appraisal is intended to be used on a general basis and not restricted to any particular manufacturer of fire doors, the following points are given to enable the closers to be used safely:

The timber doorset, including door frame, intumescent seals and associated ironmongery should have achieved 30 minutes integrity and, where applicable, insulation when tested by a UKAS approved laboratory (or assessed by Warrington Fire Research Centre) to EN 1634-1:2000.

The critical aspects of the doorset construction are considered to be the material of the door frame, the leaf to frame clearance gaps and the lipping material. Attention should be paid to these details and these should not be amended from that previously fire tested. Where this information is not known the following minimum specification will be followed:

a) Door frame density - 460 kg/m^3

b) Leaf to frame clearance gaps not to exceed 2.5 mm average and 3 mm maximum,

c) Lipping density - 460 kg/m^3

For timber doorsets, the critical factor when changing items of door hardware to another is the size of the unit under consideration. The reduction in dimension of the proposed closer material present will result in less cellulosic material being removed from the leaf and frame and therefore reduce the level of heat transfer from the closer into the core of the door leaf.

Additionally, the amount of interruption to the intumescent seal specification at the door leaf to frame perimeter clearance gaps should be replicated or reduced from that originally specified for the tested doorset.

In the location of the closer where the intumescent seal has been removed intumescent mastic shall be fitted behind the plate as the bedding material in order to reduce the level of degradation at this position, in a similar manner to the perimeter intumescent strips.

WARRES NO. 114743

Doorset B suffered an integrity failure by application of the cotton pad after 23minutes. This was in the region of the threshold near to the leading edge. Similarly Doorset A failed integrity after 25minutes, again by application of the cotton pad at the threshold. In both instances the failures were not associated with the door closers and the integrity of each doorset in the closer area was maintained for the full 33minute duration of the test.

It is proposed to reduce the dimensions of the closer body from that tested as follows:

Dimension	Tested	Proposed
Height	116mm	98mm
Thickness	27mm	25mm (body), 28mm (plate)
End Plates	172mm & 150mm	140mm

The proposed range of dimensional change all incorporate a reduction in closer material within the core of the door leaf. As this will result in a reduction of core material removed from the door leaf, and therefore is likely to further reduce the possibility of any burn through in that area, their substitution to that tested is positively appraised for FD30 doorsets.

Conclusions

Timber based CERTIFIRE certificated doorsets or doorsets that have previously been successfully fire tested by a NAMAS/UKAS accredited laboratory (or assessed by Warrington Fire Research Centre) which have achieved 30 minutes integrity and insulation as appropriate, may be fitted with an R100 Perko-Powermatic door closer as discussed in this report, without detracting from the overall performance of the doorset.

Validity

This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to Warrington Fire Research Centre the assessment will be unconditionally withdrawn and **Samuel Heath & Sons Plc** will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested because actual test data is deemed to take precedence over an expressed opinion. The assessment is valid initially for a period of five years i.e. until 1st June 2009, after which time it is recommended that it be returned for re-appraisal.

The appraisal is only valid provided that no other modifications are made to the tested construction other than those described in this report.

Summary of Primary Supporting Data

WARRES No. 114743

For the purpose of the test the specimens were referenced 'Doorset A' and 'Doorset B'. Doorset B was positioned such that it opened towards the heating conditions of the test and Doorset A was positioned such that it opened away from the heating conditions. Both doorsets were unlatched for the duration of the test.

Each doorset had overall dimensions of 2015 mm high x 822 mm wide and incorporated a flaxboard cored door leaf of overall dimensions of 1981 mm high x 761 mm wide x 43 mm thick. Both doorsets also incorporated a door closer referenced 'R100', such that the body was inserted into the door leaf, with the centre of the closer body positioned at 700 mm above the doorset threshold. The closers were bedded on intumescent mastic.

The specimens satisfied the test requirements for the following periods:

Test Results:		**Doorset A**	**Doorset B**
Integrity performance	Sustained flaming	33 minutes*	29 minutes
	Gap gauge	-	-
	Cotton Pad	25 minutes	23 minutes
Insulation performance		25 minutes	23 minutes

*The test duration. The test was discontinued after a period of 33 minutes

Date of Test 21st July 2000

Declaration by Samuel Heath & Sons Plc

We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 82: 2001.

We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which the assessment is being made.

We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.

We are not aware of any information that could adversely affect the conclusions of this assessment.

If we subsequently become aware of any such information we agree to cease using the assessment and ask Warrington Fire Research Centre to withdraw the assessment.

Signed:

For and on behalf of:

Signatories

Responsible Officer C M Crook* - Technical Officer

Approved CW Miles* - Technical Manager

* For and on behalf of Warrington Fire Research Centre.

Report Issued: 19th May 2004

Issue 2 (Alteration to Unit name throughout) : 10th June 2004

The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.