

SAMUEL HEATH

since 1820

**Fire resistance test in accordance with BS EN 1634-1
Perko (R1, R2 & R21) and Perkomatic (R85)
concealed door closers**

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.

Samuel Heath & Sons plc
Leopold Street
Birmingham
B12 1JJ

For the attention of Mr. Mark Stonelake

Review of Assessment Report Referenced WF Report No. 152958

1 Introduction

The assessment referenced WF Report No. 152958 presented an appraisal of the fire resistance performance of single-acting timber or mineral composite doorsets when fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer, if tested in accordance with BS EN 1634-1: 2000.

The appraisal report concluded that should the recommendations given in this report be followed, it can be concluded that Perko R1/R2 or Perkomatic R85 jamb mounted concealed door closers may be fitted to previously tested or assessed (by warringtonfire) insulated doorsets, to provide 60 minutes integrity and insulation performance if tested in accordance with BS EN 1634-1: 2000.

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 WF Report No. 152958.

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 WF Report No. 152958, the contents should remain valid until the 1st May 2016.

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:



A Kearns

Technical Manager
Warrington Certification Limited

Reviewed By:



S Whatham

Certification Engineer
Warrington Certification Limited

This copy has been produced from a .pdf format electronic file that has been provided by Exova Warringtonfire to the sponsor of the report and must only be reproduced in full. Extracts or abridgements of reports must not be published without permission of Exova Warringtonfire. The original signed paper version of this report is the sole authentic version. Only original paper versions of this report bear authentic signatures of the responsible Exova Warringtonfire staff.

Title:

The Fire Resistance
Performance of Timber or
Mineral Composite Based
Insulated Doorsets When
Fitted With a Perko R1/R2 or a
Perkomatic R85 Jamb Mounted
Concealed Door Closer

Report No:

WF Report No. 152958

Prepared for:

Samuel Heath and Sons Plc

Leopard Street
Birmingham
B12 0UJ

Date:

9th May 2006

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary.....	3
Introduction.....	4
Assumptions	4
Proposals	5
Basic Test Evidence	5
Assessed Performance	5
Conclusions.....	6
Validity.....	7
Summary of Primary Supporting Data.....	7
Declaration by Samuel Heath And Sons Plc.....	8
Signatories.....	9



Executive Summary

Objective	This report presents an appraisal of the fire resistance performance of single-acting timber or mineral composite doorsets when fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer, if tested in accordance with BS EN 1634-1: 2000.
Report Sponsor	Samuel Heath And Sons Plc
Address	Leopard Street Birmingham B12 0UJ
Summary of Conclusions	Should the recommendations given in this report be followed, it can be concluded that Perko R1/R2 or Perkomatic R85 jamb mounted concealed door closers may be fitted to previously tested or assessed (by warringtonfire) insulated doorsets, to provide 60 minutes integrity and insulation performance if tested in accordance with BS EN 1634-1: 2000.
Valid until	1 st June 2011

This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of warringtonfire.



Introduction

This report presents an appraisal of the fire resistance performance of single-acting insulated (timber or mineral composite) doorsets when fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer. The doorset onto which the closer is to be fitted may be of single-leaf or double-leaf configuration.

The proposed doorsets are required to provide a fire resistance performance of 60 minutes integrity and insulation with respect to BS EN 1634-1: 2000.

FTSG

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.

Assumptions

Doorset

It is assumed that the Perko R1/R2 or Perkomatic R85 jamb mounted concealed door closers will be fitted to an insulated doorset (timber or mineral composite) which has been previously shown to be capable of providing the required fire resistance performance when tested in accordance with BS EN 1634-1: 2000 in the proposed configuration i.e. single-leaf or double-leaf.

The door leaf shall be a minimum of 53 mm thick and include sub-facings comprising a minimum of 3 mm thick non-combustible board.

It is assumed that the doorset will be in the fully closed position. It is also assumed that the door closer will return the doorset to the fully closed position, overcoming the latch mechanism from any angle.

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

It is proposed that a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer may be fitted onto a previously tested (in accordance with BS EN 1634-1: 2000) insulated (timber or mineral composite) doorset, which has been shown to be capable of providing 60 minutes integrity and insulation in the same configuration as that proposed i.e. single-leaf or double-leaf. The doorset shall be latched.

Basic Test Evidence

The test referenced WARRES No. 149150/A included a fully insulated, single-acting, single-leaf, timber doorset which was fitted with a 'Perko Powermatic R100' jamb mounted concealed door closer.

The doorset was orientated such that the door leaf opened towards the heating conditions of the test and was rendered unlatched for the duration of the test.

Whilst integrity failure of the doorset occurred after a period of 52 minutes, there were no modes of integrity failure either co-incident with, or attributable to the 'Perko Powermatic R100' jamb mounted concealed door closer position for the 62 minute test duration.

Assessed Performance

It is proposed that previously fire tested (or assessed by warringtonfire) timber or mineral composite based insulated doorsets may be fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer, without detracting from the 60 minutes fire performance of the doorset.

The tested assembly included a 'Perko Powermatic R100' jamb mounted concealed door closer fitted within the door leaf edge/frame at approximately mid-height. The closer restrained the doorset for the required period and did not incur any modes of integrity failure for the test duration of 62 minutes.

When considering the performance of the alternative closers proposed, it is important to determine that these will not provide an increased risk of burn though compared with that tested.

The Perko Powermatic R100 closer has an overall casing size of 178 mm long by 98 mm high with an end plate 140 mm high by 28 mm wide. This is larger than the Perko R1/R2 closers which both have a tubular casing 150 mm long by 22 mm diameter and an end plate 51 mm high by 25 mm wide. The R1 and R2 are identical apart from the rounded edges incorporated on the end plate of the R1 closer.



The casing of the Perkomatic R85 closer is also slightly smaller than tested at 170 mm long by 60 mm high with an end plate 125 mm high by 22 mm wide.

It is therefore considered that since the proposed closers are all smaller than previously fire tested, they all represent a less onerous case with respect to burn through of the door leaf.

The tested closer was fitted to an unlatched doorset and has therefore proven its ability to restrain the door leaf for at least a period of 60 minutes. However, since it has not been proven that the alternative closers proposed are capable of restraining the door leaf for a similar period, it is a requirement of this assessment that the door leaf shall be latched and that the closer shall be capable of returning the door leaf to the fully closed and latched position.

Proposed Doorsets

To enable the use of the door closers on a range of doorsets, it is necessary to address the available information on the proposed doorset. As this appraisal is intended to be used on a general basis and not restricted to any particular manufacturer of fire resisting doorsets, the following points are given to enable the closers to be used safely:

- a) The doorset shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 60 minutes integrity, when tested by a NAMAS/UKAS approved laboratory (or assessed by warringtonfire) to BS EN 1634-1: 2000.
- b) Regardless of the scope of the coverage for the proposed doorset, the door leaf shall be latched and the proposed closing device shall be capable of overcoming the latch mechanism.
- c) If the proposed doorset is to be used in double-leaf configuration the test or assessment evidence should be applicable to double-leaf configurations.
- d) The critical aspects of the doorset construction are given earlier in this report and shall be replicated on the proposed doorset, in particular the necessity for the door leaf to include non-combustible sub-facings.

Conclusions

Timber or mineral composite based doorsets that have previously been successfully fire tested by a NAMAS/UKAS accredited laboratory (or assessed by warringtonfire) which have achieved 60 minutes integrity and insulation as discussed in this report, may be fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer, without detracting from the overall performance of the doorset.

The fitting of the door closers into alternative doorsets, on the basis of compliance with the conditions given above, is therefore considered to be acceptable.



The casing of the Perkomatic R85 closer is also slightly smaller than tested at 170 mm long by 60 mm high with an end plate 125 mm high by 22 mm wide.

It is therefore considered that since the proposed closers are all smaller than previously fire tested, they all represent a less onerous case with respect to burn through of the door leaf.

The tested closer was fitted to an unlatched doorset and has therefore proven its ability to restrain the door leaf for at least a period of 60 minutes. However, since it has not been proven that the alternative closers proposed are capable of restraining the door leaf for a similar period, it is a requirement of this assessment that the door leaf shall be latched and that the closer shall be capable of returning the door leaf to the fully closed and latched position.

Proposed Doorsets

To enable the use of the door closers on a range of doorsets, it is necessary to address the available information on the proposed doorset. As this appraisal is intended to be used on a general basis and not restricted to any particular manufacturer of fire resisting doorsets, the following points are given to enable the closers to be used safely:

- a) The doorset shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved up to 60 minutes integrity, when tested by a NAMAS/UKAS approved laboratory (or assessed by warringtonfire) to BS EN 1634-1: 2000.
- b) Regardless of the scope of the coverage for the proposed doorset, the door leaf shall be latched and the proposed closing device shall be capable of overcoming the latch mechanism.
- c) If the proposed doorset is to be used in double-leaf configuration the test or assessment evidence should be applicable to double-leaf configurations.
- d) The critical aspects of the doorset construction are given earlier in this report and shall be replicated on the proposed doorset, in particular the necessity for the door leaf to include non-combustible sub-facings.

Conclusions

Timber or mineral composite based doorsets that have previously been successfully fire tested by a NAMAS/UKAS accredited laboratory (or assessed by warringtonfire) which have achieved 60 minutes integrity and insulation as discussed in this report, may be fitted with a Perko R1/R2 or a Perkomatic R85 jamb mounted concealed door closer, without detracting from the overall performance of the doorset.

The fitting of the door closers into alternative doorsets, on the basis of compliance with the conditions given above, is therefore considered to be acceptable.



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 warringtonfire the assessment will be unconditionally withdrawn and Samuel Heath And Sons Plc as 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 May 2011, 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. 149150/A

Test report relating to the performance of a fully insulated, single-acting, single-leaf, timber doorset incorporating a jamb mounted concealed door closer referenced 'Perko Powermatic R100', when subjected to a test in accordance with BS EN 1634-1: 2000 to determine its fire resistance performance.

The doorsets had overall dimensions of 2090 mm high by 1015 mm wide and incorporated door leaves of overall dimensions 2040 mm high by 926 mm and by 53 mm thick.

The doorset was retained via a 'Perko Powermatic R100' jamb mounted concealed door closer.

The doorset was orientated such that the doorset opened towards the heating conditions of the test and was rendered unlatched for the duration of the test.

The specimen satisfied the test requirements for the following periods:

		Doorset B
Integrity	Sustained Flames	52 minutes
	Gap Gauge	62 minutes*
	Cotton Pad	52 minutes
Insulation		52 minutes

* The test duration.

Test date : 30th September 2005

Permission has been provided for this test report to be utilised for the purposes of this appraisal



Declaration by Samuel Heath And 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.

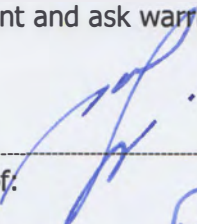
We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.

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 warringtonfire to withdraw the assessment.

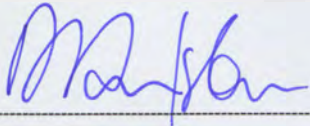
Signed:

For and on behalf of.


Samuel Heath & Sons Plc.

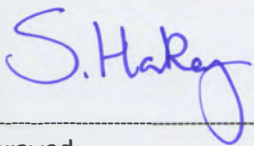


Signatories



Responsible Officer

D Hankinson* - Technical Consultant



Approved

S Hankey* - Technical Consultant

* For and on behalf of warringtonfire.

Report Issued: 9th May 2006

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

