

**Title:**

The Fire Resistance  
Performance Of Timber/Mineral-  
Based Doorsets When Fitted  
With Surface Mounted Maglocks

**WF Assessment Report No:**

**433701 Issue 3**

**Prepared for:**

**Specialized Security  
Products Ltd**

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**Date:**

20<sup>th</sup> November 2020

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## Foreword

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This assessment report has been commissioned by Specialized Security Products Ltd and relates to the fire resistance of Surface Mounted Maglocks

The report is for National Application and has been written in accordance with the general principles outlined in BS EN 15725: 2010; *Extended application reports on the fire performance of construction products and building elements*.

This report uses established empirical methods of extrapolation and experience of fire testing similar locksets, in order to extend the scope of application by determining the limits for the designs based on the tested constructions and performances obtained. The scope is an evaluation of the potential fire resistance performance, if the variations specified herein were to be tested in accordance with BS 476: Part 22: 1987 or BS EN 1634-1.

This scope document cannot be used as supporting documentation for either a CE marking application nor can the conclusion be used to establish a formal classification against EN13501-2.

The scope presented in this report relates to the behaviour of the locks and latches under the particular conditions of the test; they are not intended to be the sole criterion for considering the potential fire hazard of the maglocks in use.

This report has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the Passive Fire Protection Forum (PFPF) 'Guide to Undertaking Technical Assessments of the Fire Performance of Construction Products Based on Fire Test Evidence - 2021'. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used for building control and other purposes.

## Executive Summary

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<b>Objective</b>	This report considers the fire resistance performance of single-acting, insulated timber/mineral-based doorsets, when fitted with Surface Mounted Maglocks.
<b>Report Sponsor</b>	<b>Specialized Security Products Ltd</b>
<b>Address</b>	Units 18-23 Park Farm Industrial Estate Ermine Street Buntingford Herts SG9 9AZ United Kingdom
<b>Summary of Conclusions</b>	<p>Should the recommendations given in this report be followed, it can be concluded that the surface mounted maglocks, as detailed within Annex A of this report, may be fitted to previously tested or assessed (by Warringtonfire) timber/mineral based doorsets to provide 30 or 60 minutes integrity performance, without detracting from the overall performance of the doorset, with respect to EN 1634-1 or BS 476: Part 22: 1987.</p> <p>This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476: Part 22: 1987 or BS EN 1634-1, on the basis of the evidence referred to evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.</p>
<b>Valid until</b>	20 <sup>th</sup> November 2025

## Introduction

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This report presents an appraisal of the fire resistance performance of single-acting timber/mineral-based doorsets when fitted with a range of Surface mounted maglocks. The doorset, onto which the proposed hardware 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 up to 60 minutes integrity performance for timber/mineral-based doorsets, with respect to EN 1634-1 or BS 476: Part 22: 1987.

### 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 Technical Assessments of Fire Performance of Construction Products Based on Fire Test Evidence - 2021.

## Assumptions

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### Doorset Specification

It is assumed that the Surface mounted maglocks will be fitted to a doorset which has also been previously shown to be capable of providing the required fire resistance performance when tested in accordance with EN 1634-1 or BS 476: Part 22: 1987 in the proposed configuration i.e. single-leaf or double-leaf.

It is also assumed that the doorsets will fully comply with any certification scope or assessed modifications, apart from the modifications specified in this report.

### Latching

As the magnetic locks considered by this report do not incorporate a self-latching mechanism, the doorsets must have been proven for the required period without the restraint of a latch/lock.

### 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.

### Installation

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

### 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, and latched where applicable.

### EN1634-1

EN1634-1 was issued originally in 2000, with amended versions issued in 2008, 2014 and 2018. The differences between each version are mainly procedural and are not considered to have a practical impact on the performance of the samples under test. On this basis this evaluation is considered applicable to all versions of EN1634-1 issued prior to the issue of this assessment.

## Proposals

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It is proposed that the Surface mounted maglocks, as referenced within this report, may be fitted into a previously tested (in accordance with EN 1634-1 or BS 476: Part 22: 1987) or assessed (by Warringtonfire) timber/mineral-based doorsets which have been shown to be capable of providing 30 or 60 minutes integrity performance, in the same configuration as that proposed i.e. single-leaf or double-leaf.

This evaluation relates to the products identified in Annex A.

The hardware which has been subject to 30 minute and 60 minute fire tests are as follows:

Reference	Description
	Armature plate 600
	Armature plate 1200

## Basic Test Evidence

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### WF Report No. 394415

The test report referenced WF report No. 394415 and described briefly in the supporting data section of this report describes a fire resistance test which utilised the general principles given in BS EN 1634-1:2014 on two specimens of simulated single-leaf, timber-based doorset assembly.

The specimens comprised of a 30 minute and 60 minute, single-acting, single-leaf doorsets. The door leaves, which were unlatched, incorporated a range of hardware.

The test demonstrated the ability of Doorset A and B to provide 36 minutes and 56 minutes integrity and insulation performance respectively.

## Assessed Performance

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This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN 1634-1 or BS 476: Part 22: 1987, on the basis of the evidence referred to evidence referred to herein. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

### Timber Based Doorsets

It is proposed that previously fire tested (or assessed Warringtonfire, BM TRADA or Chiltern International Fire) timber/mineral-based doorsets may be fitted with the Surface mounted maglocks identified above, without detracting from the performance of the doorset.

The performances of both Doorsets A and B during the test referenced WF No. 394415 is cited to display the ability of the surface mounted maglocks to contribute towards the required fire resistance performance for 30 minute and 60 minute insulated timber based doorsets.

Doorset A included in test WF Report No. 394415 was a simulated single acting, single leaf doorset with a 44 mm thick graduated density chipboard core and 8 mm thick hardwood lippings. The leaf was hung within a softwood frame.

Doorset B included in test WF Report No. 394415 was a single acting, single leaf doorset with a 54 mm thick graduated density chipboard core and 8 mm thick hardwood lippings. The leaf was hung within a hardwood frame.

On reviewing the observations taken from the tests report, it's clear that there were no integrity failures associated with any of the hardware fitted to Doorset A (E30), for a duration of 36 minutes at which time the doorset were sealed off to allow the testing of the Doorset B (E60) to continue.

Initial integrity failure of Doorset B (E60) occurred at the bottom edge at 56 minutes. This failure was not coincident to or associated with the hardware under test and therefore was sealed off. The test was discontinued after 66 minutes without any further failure to the doorset.

## Alternative hardware

An appraisal of the hardware variants detailed in this report is based upon product information supplied by the hardware manufacturer, which is retained in the confidential file relating to this report. Warringtonfire have not inspected the devices being appraised and cannot be held responsible for the accuracy of the information provided.

In terms of the hardware that is recessed into the edge or face of the door or frame, it is critical that materials which are combustible or have a lower melting point are not utilised since materials which melt or ignite may advance the burn through of the leaf and therefore lead to a premature integrity failure.

It is critical that the dimensions of any recessed items are not increased since the increased mortice required for a large bodies may lead to an earlier burn through of the leaf or increased dimensions may lead to the penetration of flames/hot gases at the leaf edge due to further interruption of intumescent seals and an increase in conducted heat.

Substitution of alternative hardware from the tested range may therefore be considered in terms of the critical aspects discussed and where such hardware falls within the scope of the tested hardware, it is considered reasonable to assume that no reduction in the performance of the doorset would be expected as a consequence of their substitution.

All of the proposed hardware identified in Annex A is of identical materials to the examples tested and therefore they may be positively appraised.

As the hardware is wholly surface mounted, with no element recessed into the face/edge of the door, no fixing penetrating the total door thickness (with the exception of the armature plate fixing), and the hardware is not required to restrain the door for fire resistance reasons, there is no risk associated with the use of these products on fully insulated timber/mineral-based doorsets of 30 or 60 minutes performance.

In these applications any hardware on the exposed face is likely to fall away early in the test, and hardware on the unexposed face will be insulated from the effects of the heating conditions by the timber/mineral-based doors and frames.

On this basis it was not considered necessary to incorporate the maglock body or mounting brackets on the test assemblies.

### Required Doorset specifications

As stated in this report, the doorset, in the required configuration, will be previously tested (or assessed by Warringtonfire) and its performance is therefore not in doubt.

To enable the use of the Surface mounted maglocks discussed 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 minimum specification is given to enable the locks to be used safely:

#### Proposed 30 and 60 Minute Timber Based Doorset

- a) The doorset shall carry valid certification or the doorset, including the door frame and associated ironmongery should have achieved 30 or 60 minutes integrity and where applicable insulation, when tested by a UKAS approved laboratory (or assessed by Warringtonfire) to EN 1634-1 or BS 476: Part 22: 1987.
- b) If the proposed doorset is to be used in double-leaf configuration the test or assessment evidence should be applicable to double-leaf configuration.
- c) The leaves of the proposed doorset shall be of a minimum thickness of 44 mm for 30 minute doorsets and 54 mm for 60 minute doorsets.
- d) The leaves should incorporate hardwood lippings of a minimum thickness of 6 mm and minimum density  $640\text{kg/m}^3$ .
- e) Door frame density -  $450\text{ kg/m}^3$  for 30 minute doorsets and  $640\text{ kg/m}^3$  for 60 minute doorsets.

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



## Conclusions

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Should the recommendations given in this report be followed, it can be concluded that the surface mounted maglocks, as detailed within Annex A of this report, may be fitted to previously tested or assessed (by Warringtonfire) timber/mineral based doorsets to provide 30 or 60 minutes integrity performance, without detracting from the overall performance of the doorset, with respect to EN 1634-1 or BS 476: Part 22: 1987.

This report represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this report would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose.

## Validity

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The assessment is initially valid for five years after which time it is recommended to be submitted to Warringtonfire for re-appraisal.

This assessment report is not valid unless it incorporates the declaration given below duly signed by the applicant.

## Summary of Primary Supporting Data

### WF Report No. 394415

An investigation which utilised the general principles given in BS EN 1634-1: The test was not conducted under the requirements of UKAS accreditation.

The purpose of the test was to provide an indication of the performance on a range of armature plates, when fitted to 30 and 60 minute fire rated timber based doorsets under fire test conditions.

The test assembly consisted of two small scale doorsets, which for the purposes of the test were reference as Doorset A and Doorset B.

Doorset A had overall dimensions of 1495 mm high by 710 mm wide incorporating a door leaf with overall dimensions 1445 mm high by 635 mm wide by 44 mm thick. The door leaf was of a solid graduated density chipboard construction, with 8 mm hardwood lippings to the vertical edges and was mounted within a softwood frame. The Doorset was fitted with two electromagnetic lock armature plates, both fixed to the head of the leaf. The armature plates were through bolted to the door with the plates to unexposed face.

Doorset B had overall dimensions of 1490 mm high by 700 mm wide incorporating a door leaf with overall dimensions 1442 mm high by 628 mm wide by 54 mm thick. The door leaf was of a solid graduated density chipboard construction, with 8 mm hardwood lippings to the vertical edges and was mounted within a hardwood frame. The Doorset was fitted with two electromagnetic lock armature plates, both fixed to the head of the leaf. The armature plates were through bolted to the door with the plates to unexposed face.

The test assembly formed the front vertical face of a 1.5 metre wide by 1.5 metre high by 2 metre deep gas fired furnace chamber, the temperature rise of which was controlled to conform to the relationship given in BS EN 1363-1: 2012.

The doorset satisfied the test requirements for the following periods:

Performance Criteria		Doorset A	Doorset B
<b>Integrity</b>	Sustained flaming	36 minutes <sup>#</sup>	56 minutes
	Gap gauge	36 minutes <sup>#</sup>	66 minutes*
	Cotton Pad	36 minutes <sup>#</sup>	56 minutes

\*The test was discontinued after a period of 66 minutes.

<sup>#</sup> Doorset sealed, allowing the test to continue.

Test date : 25<sup>th</sup> January 2018

Test Sponsor : Held on file by Warringtonfire – The report owner has given permission for the use of this test report in support of this assessment

## Declaration by Specialized Security Products Limited

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We the undersigned confirm that we have read and comply with obligations placed on us by the Passive Fire Protection Forum (PFPF) Guide to undertaking technical assessments and engineering evaluations based on fire test evidence 2021 Industry Standard Procedure

We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.

We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.

We understand that this assessment is based on test evidence and will be withdrawn should evidence become available that causes the conclusion to be questioned. In that case, we accept that new test evidence may be required.

We are not aware of any information that could affect the conclusions of this assessment. If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

(In accordance with the principles of FTSG Resolution 82:2001)

Signature:

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Name:

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Position:

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Date:

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For and on behalf of:

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## Limitations

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The following limitations apply to this assessment:

We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.

We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.

1. This report addresses itself solely to the elements and subjects discussed and do not cover any other criteria or modifications. All other details not specifically referred to should remain as tested or assessed.
2. This report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Warringtonfire, the assessment will be unconditionally withdrawn, and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.
3. This field of application has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
4. Opinions and interpretation expressed herein are outside the scope of UKAS accreditation.
5. This field of application relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions against the ISO 834 time/temperature curve that is stipulated in the standard this assessment concludes to. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this field of application, the element is suitable for its intended purpose.
6. This report represents our opinion as to the performance likely to be demonstrated on a test in accordance with EN1634-1, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this report would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose.
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9. This report addresses itself solely to the elements and subjects discussed and do not cover any other criteria or modifications. All other details not specifically referred to should remain as tested or assessed.
10. This report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Warringtonfire, the assessment will be unconditionally withdrawn, and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.

## Signatories

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Responsible Officer

R. Anning\* - Principal Certification Engineer



Approved

A. Kearns\* - Technical Manager

\* For and on behalf of Warringtonfire.

Report Issued: 20<sup>th</sup> November 2020

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

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## Revision History

Issue No: 1	Issue Date: 20/11/2020
Written By: R. Anning	Approved By: M. Tolan

Issue No: 2	Re-issue Date: 24/03/2021
Revised By: R. Anning	Approved By: M. Tolan
Reason for Revision: Product list updated	

Issue No: 3	Re-issue Date: 26/07/2022
Revised By: R. Anning	Approved By: A. Kearns
Reason for Revision: Fixing description corrected	

## Annex A

<b>Electromagnetic Lock Series</b>	<b>Models (Unmonitored Series)</b>	<b>Models (Monitored Series)</b>
Armature Plate 600	EM01-FIRE	EM02-FIRE
	EM01DS-FIRE	EM02DS-FIRE
	EM04-FIRE	EM05-FIRE
	EM04DS-FIRE	EM05DS-FIRE
	EM00-FIRE	EM00R-FIRE
	EM320M-FIRE	EM00R(B)U-FIRE
	EM300-ABP-FIRE	EXT600-FIRE
	EM300Z-FIRE	EM320M-FIRE
	EM300ZL-FIRE	EM300-ABP-FIRE
	EM300AZLG-FIRE	EM300Z-FIRE
		EM300ZL-FIRE
	EM300AZLG-FIRE	

<b>Electromagnetic Lock Series</b>	<b>Models (Unmonitored Series)</b>	<b>Models (Monitored Series)</b>
Armature Plate 800		EXT800-FIRE

<b>Electromagnetic Lock Series</b>	<b>Models (Unmonitored Series)</b>	<b>Models (Monitored Series)</b>
Armature Plate 1200	EM10DS-FIRE	EM20DS-FIRE
	EM10-FIRE	EM20-FIRE
	EM60-FIRE	EM40-FIRE
	EM60DS-FIRE	EM40DS-FIRE
	EM520S-FIRE	EXM 12-24-FIRE
	EM500ABP-FIRE	EXT1200-FIRE
	EM500Z-FIRE	EM520S-FIRE
	EM500ZL-FIRE	EM500ABP-FIRE
	EM500AZLG-DC-FIRE	EM500Z-FIRE
		EM500ZL-FIRE
		EM500AZLG-DC-FIRE