

Title:

The Fire Resistance
Performance Of
Timber/Mineral-Based
Doorsets When Fitted With
Securefast Plc Door
Hardware

WF Report No:

508181

Prepared for:

Securefast Plc.
Unit 6,
The Cedars Business Centre,
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Staffordshire,
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Date:

8th November 2021

Foreword

This assessment report has been commissioned by Securefast Plc. and relates to the fire resistance of single-acting, insulated timber/mineral-based doorsets when fitted with Securefast Plc's electric locks, door loops, electromagnetic locks and escutcheons.

This assessment 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*, as appropriate.

This assessment uses established empirical methods of extrapolation and experience of fire testing similar products, in order to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with EN1634.

This assessment has been written using appropriate test evidence generated at an appropriately accredited laboratory to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated design and is summarised in the Supporting data section of this report.

The defined scope presented in this assessment report relates to the behaviour of the proposed hardware under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the hardware in use

This assessment has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the PFPF guidelines to undertaking 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 based on fire test evidence that exist in the UK are of a satisfactory standard for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

This report is not intended for use in support of EN 15269-2 and EN 15269-3 (Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware.), or CE Marking of Doorset to EN 16034 (Pedestrian doorsets, industrial, commercial, garage doors and openable windows. Product standard, performance characteristics. Fire resisting and/or smoke control characteristics).

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Executive Summary

Objective This report provides an appraisal of the fire resistance performance of single-acting, insulated timber/mineral-based doorsets, when fitted with Securefast electric locks, door loops, electromagnetic locks and escutcheons, if subjected to a fire resistance test in accordance with BS EN 1634-1

Report Sponsor Securefast Plc.

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Summary of Conclusions Should the recommendations given in this report be followed, it can be concluded that the Securefast Plc's electric locks, door loops, electromagnetic locks and escutcheons as detailed within this report, may be fitted to previously tested or assessed (by Warringtonfire, BM TRADA or Chiltern International Fire) timber/mineral-based doorsets to provide up to 60 minutes integrity and insulation performance, without detracting from the overall performance of the doorset, with respect to EN 1634-1.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS EN 1634-1: 2014+A1 2018, on the basis of the evidence referred to above. 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.

Valid until 5th November 2026

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Introduction

This report provides an appraisal of the fire resistance performance of single-acting, insulated timber/mineral-based doorsets, when fitted with Securefast electric locks, door loops, electromagnetic locks and escutcheons.

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 of the Fire Performance of Construction Products Based on Fire Test Evidence 2019.

Assumptions

Doorset Specification

It is assumed that the Securefast electric locks, door loops, electromagnetic locks and escutcheons 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 in the proposed configuration i.e., single 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

Where a lock considered by this report does not incorporate a self-latching mechanism e.g., deadlocks, maglocks etc then either the lock must be engaged or 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.

The locks/latches shall not be fitted higher than 1100 mm from the centre of the latch to the finished floor level of the surrounding floors.

Recessing for hardware shall result in a tight fit, allowing for any intumescent protection where required.

The spindle hole through the door shall be a maximum of 15 mm diameter unless the doorset has test evidence that proves spindle holes of a greater size than this.

Morticed Shearlocks

As the shearlock requires a considerable amount of material removing to accommodate the body and armature, the locks shall only be fitted to doorsets which have previously been shown capable of accommodating the installation of similar concealed items at the head/lock edge of the doorset, without detriment to the doorsets performance.

Where the maglock body is directly above any glazing, the glass shall be insulated for the required classification period.

Conduit	It is assumed the doorset will have suitable supporting test evidence for any conduit and door loop required to connect the electrical lock elements.
Electrical safety	The effectiveness and electrical safety of this electrically operated lock is outside the scope of this appraisal.
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.
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

It is proposed that the Securefast electric locks, door loops, electromagnetic locks and escutcheons may be fitted into a previously tested (in accordance with EN 1634-1) or assessed (by Warringtonfire, BM TRADA or Chiltern International Fire) timber/mineral-based doorsets which have been shown to be capable of providing up to 60 minutes integrity and insulation performance, in the same configuration as that proposed i.e., single-leaf.

The products identified are as follows:

- ASEL2460 Electric Lock
- ALP101 Door Loop
- AEMSF300 Shear Electro-magnetic Lock
- SEU1090.2. Security escutcheon
- SSEDKC-PC Security escutcheon
- SSEDKC-SN Security escutcheon

As assumed previously, the locking mechanisms proposed do not form part of the mechanism retaining the door in the closed position during fire conditions. It is also assumed the locks will fail to the unsecured or unlatched position in the event of a fire alarm signal to ensure they do not compromise the presumed condition of the doors according to their fire test or assessment documentation.

Primary Test Evidence

WF Report No. 341512

The test referenced WF Test Report No. 341512, briefly described in the supporting data section of this report, describes a test conducted in accordance with BS EN 1634-1: 2014 which included two single-acting, single-leaf timber/mineral based doorsets with the following hardware fitted ASEL2460 Electric Lock, ALP101 Door Loop, AEMSF300 Shear Electro-magnetic Lock & SEU1090.2. Security escutcheon.

The test demonstrated the ability of the doorsets to provide 31 and 66 minutes integrity and insulation performances for doorsets A and B respectively. Doorset A achieved 31 minutes as at this point the doorset was blanked off to allow the testing of doorset B to continue.

Assessed Performance

Hardware Variant Specifications

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.

Timber/Mineral Based Doorsets

30 and 60 Minutes

The performances of both Doorsets A and B during the test referenced WF No. 341512 is cited to display the ability of the Securefast ASEL2460 Electric Lock, ALP101 Door Loop, AEMSF300 Shear Electro-magnetic Lock & SEU1090.2. Security escutcheon to contribute towards the required performance for 30 and 60 minute rated timber/mineral based doorsets.

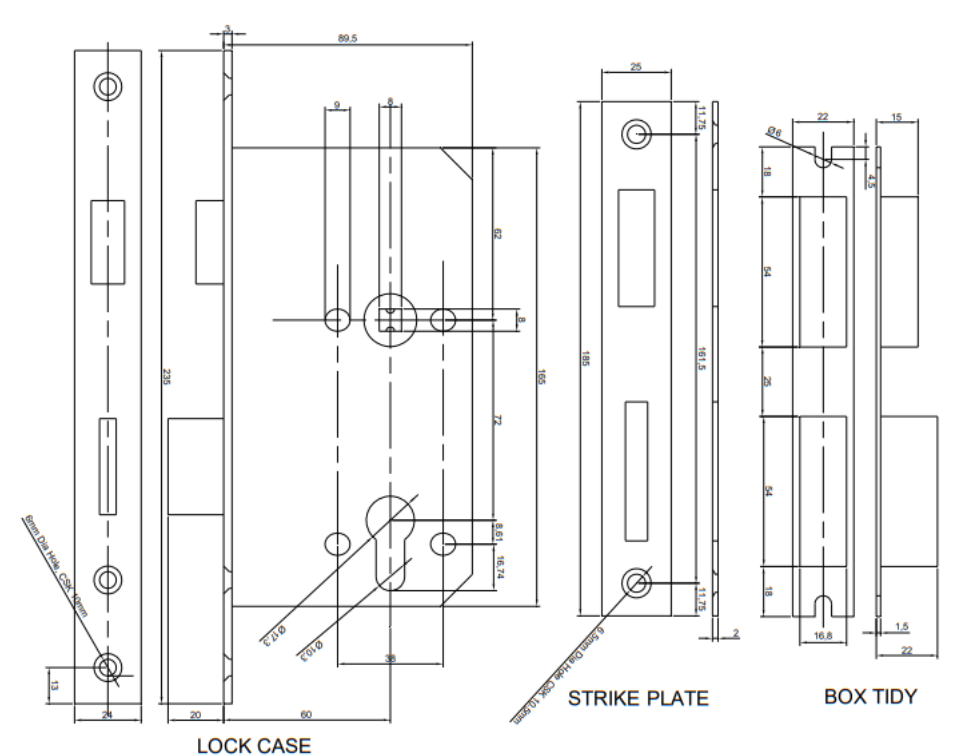
Doorset A included within WF report No 341512 was a 2095 x 995 mm single acting, single leaf doorset with a 2055 x 925 x 45 mm graduated density chipboard door and 7 mm thick hardwood lippings. The leaf was hung within a softwood frame with a single 15 x 4 mm perimeter intumescent fire seal fitted centrally within the frame rebate.

Doorset B included within WF report No 341512 was a 2085 x 1010 mm single acting, single leaf doorset with a 2040 x 935 x 55 mm graduated density chipboard door and 7 mm thick hardwood lippings. The leaf was hung within a softwood frame with a 2No. 15 x 4 mm perimeter intumescent fire seal fitted centrally within the frame rebate.

Both doorsets were fitted with an ASEL2460 Electric Lock, ALP101 Door Loop, AEMSF300 Shear Electro-magnetic Lock & SEU1090.2. Security escutcheon. The electric lock, Door loop and Shear Electro-magnetic lock were all wrapped in a 2 mm layer of Interdens intumescent sheet. The latchbolts were not engaged for the test duration and the doors opened towards the heating conditions of the test.

ASEL2460 Electric Lock

On review of the observations taken from the test report, no integrity failures associated with the ASEL2460 Electric Lock fitted to doorset A (E30), for a test duration of 31 minutes; the door was blanked off after 31 minutes to allow the testing of doorset B (E60) to continue. There were also no integrity failures associated with the ASEL2460 Electric Lock fitted to doorset B. The test was discontinued after 66 minutes.



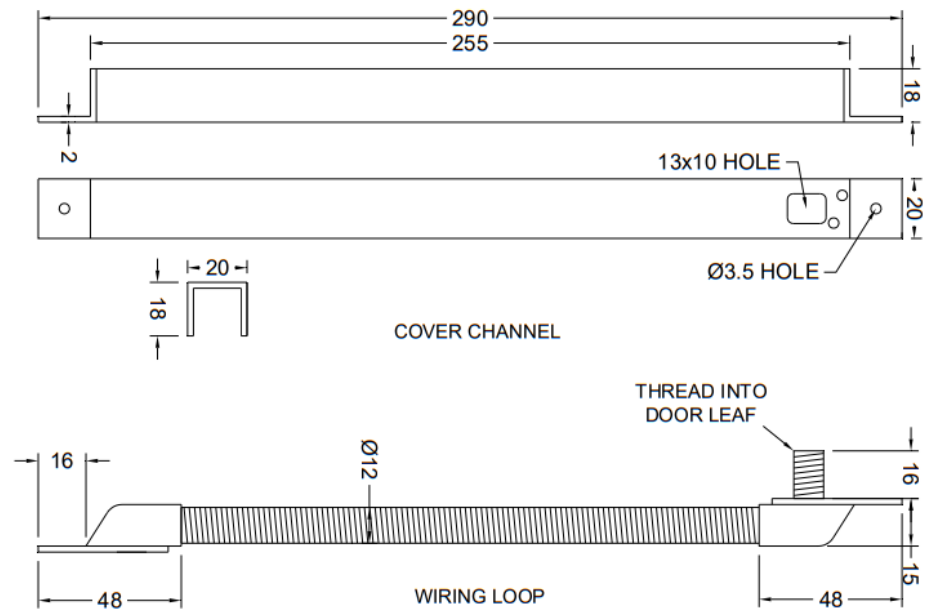
The ASEL2460 Electric Lock which was fitted to both doorsets included within WF report No 341512 and was wrapped in a 2 mm layer of Interdens intumescent sheet, this was applied to all sides of the lockcase and behind the forend plate, this was also applied to the rear of the strikeplate. This forms the minimum level of intumescent protection required for the ASEL2460 Electric Lock.

Additionally, for 60 minute ITT applications only, the perimeter intumescent within the frame/door edge shall by-pass the strike plate or forend by a minimum of 7 mm wide on each side.

The performances of both doorsets during the test referenced WF No. 341512 are cited to display the ability of the Securefast ASEL2460 Electric Lock to contribute towards the required fire resistance performance for 30 and 60 minute rated timber/mineral based doorsets provided the appropriate installation and intumescent details described above are followed.

ALP101 Door Loop

On review of the observations taken from the test report, no integrity failures associated with the ALP101 Door Loop fitted to doorset A (E30), for a test duration of 31 minutes; the door was blanked off after 31 minutes to allow the testing of doorset B (E60) to continue. There were also no integrity failures associated with the ALP101 Door Loop fitted to doorset B. The test was discontinued after 66 minutes.



The ALP101 Door Loop which the main body was fitted to the door frame on both doorsets included within WF report No 341512 and was wrapped in a 2 mm layer of Interdens intumescent sheet, this was applied to the outer channel on all sides, was also applied below and behind the end cap that was inserted into the door leaf. This forms the minimum level of intumescent protection required for the ASEL2460 Electric Lock.

Additionally, for 60 minute ITT applications only, the perimeter intumescent within the frame/door edge shall by-pass the cover channel or the end cap by a minimum of 6.5 mm wide on each side.

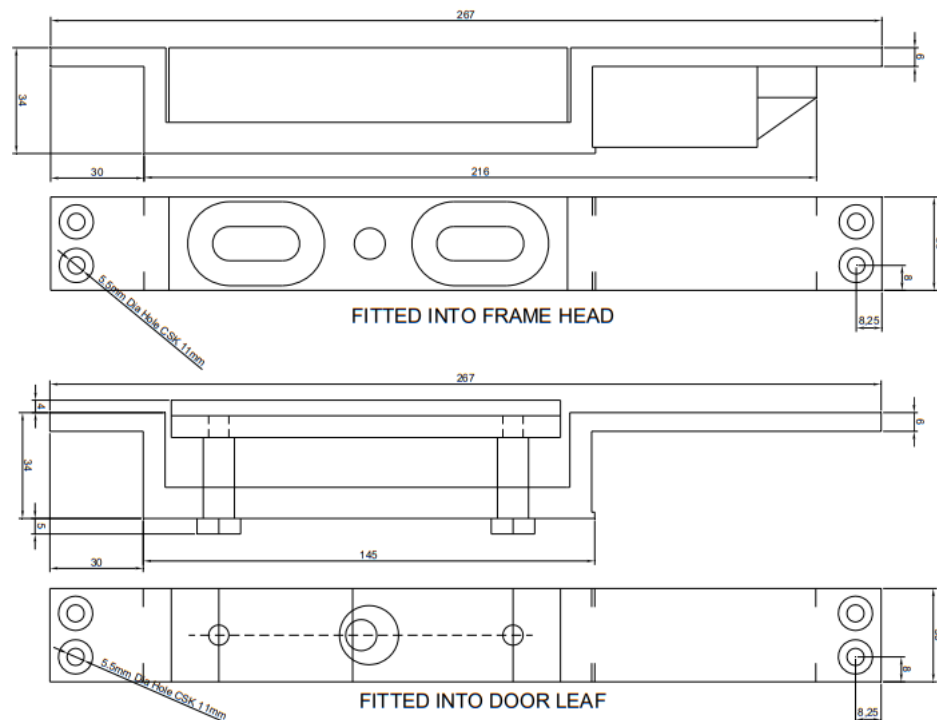
The door loops shall not be fitted higher than 1330 mm from the centre of the door loop to the finished floor level of the surrounding floors, this was the height at which they were tested within WF report No 341512 and therefore is the maximum height at which they can be installed.

The door loops would typically be used in conjunction with doors/frames that incorporate a conduit to accommodate electrical cables. This appraisal does not considered this conduit as this is the wholly responsibility of the doorset manufacturer to provide suitable test/assessment data.

The performances of both doorsets during the test referenced WF No. 341512 are cited to display the ability of the Securefast, ALP101 Door Loop to contribute towards the required fire resistance performance for 30 and 60 minute rated timber/mineral based doorsets provided the appropriate installation and intumescent details described above are followed.

AEMSF300 Shear Electro-magnetic Lock

On review of the observations taken from the test report, no integrity failures associated with the AEMSF300 Shear Electro-magnetic Lock fitted to doorset A (E30), for a test duration of 31 minutes; the door was blanked off after 31 minutes to allow the testing of doorset B (E60) to continue. There was also no integrity failures associated with the AEMSF300 Shear Electro-magnetic Lock fitted to doorset B. The test was discontinued after 66 minutes.



The AEMS300 Shear Electro-magnetic Lock which was fitted to both doorsets included within WF report No 341512 and was wrapped in a 2 mm layer of Interdens intumescent sheet, this was applied to all parts that were morticed into the door frame and door leaf. This forms the minimum level of intumescent protection required for the AEMS300 Shear Electro-magnetic Lock.

Additionally, for 60 minute ITT applications only, the perimeter intumescent within the frame/door edge shall by-pass the frame section or leaf section of the AEMS300 Shear Electro-magnetic Lock by a minimum of 3 mm wide on each side.

Testing the unit in the top edge is considered to represent the most onerous application as it is subject to increase positive pressure from within the furnace which can result in increased erosion of the timber elements around the hardware.

Should the shearlocks be fitted on the lock edge of a single-action, single-leaf doorset this is not expected to have a detrimental effect on the fire resistance performance providing the lock is set a minimum of 1000 mm from the bottom edge of the door to the centre-line of the shearlock body and the intumescent specification identified above is maintained.

The shearlocks shall not be fitted at the vertical meeting edges of double-leaf doorsets.

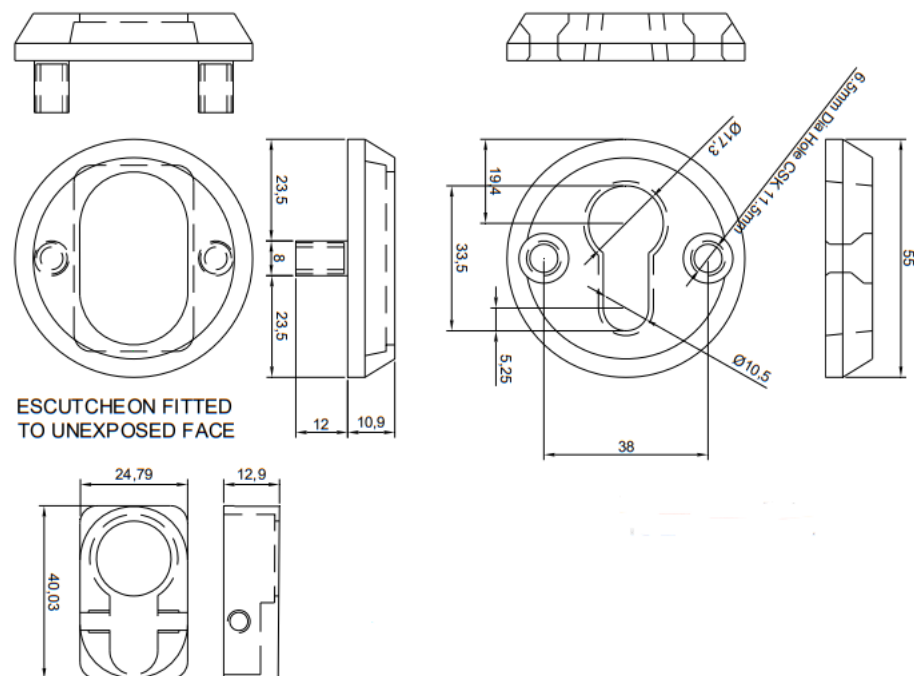
Where the shearlocks are fitted in the top edge of the door, the armature shall be fitted a minimum of 75 mm from the leading edge of the door to the edge of the armature.

The AEMSF300 Shear Electro-magnetic Lock is an edge mounted morticed shearlock, which is required to have the main body be fitted in the frame head/jamb, whilst the armature is located in the top/lock edge of the door leaves. As the unit is an electromagnet it is not required to retain the door in the closed position for the test.

The performances of both doorsets during the test referenced WF No. 341512 are cited to display the ability of the Securefast AEMSF300 Shear Electro-magnetic Lock to contribute towards the required fire resistance performance for 30 and 60 minute rated timber/mineral based doorsets provided the appropriate installation and intumescent details described above are followed.

Security escutcheon

On review of the observations taken from the test report, no integrity failures associated with the SEU1090.2. Security escutcheon fitted to doorset A (E30), for a test duration of 31 minutes; the door was blanked off after 31 minutes to allow the testing of doorset B (E60) to continue. There was also no integrity failures associated with the SEU1090.2. Security escutcheon fitted to doorset B. The test was discontinued after 66 minutes.



The SEU1090.2. Security escutcheon which was fitted to both doorsets included within WF report No 341512 was not fitted with any intumescent material.

None of the escutcheons are recessed into the edge of the door or frame; consequently they do not interrupt the perimeter intumescent located around the door leaf therefore there is no increased risk of burn-through of the leaf or frame associated with this hardware.

The performances of both doorsets during the test referenced WF No. 341512 are cited to display the ability of the Securefast SEU1090.2. Security escutcheon to contribute towards the required fire resistance performance for 30 and 60 minute rated timber/mineral based doorsets.

The SEU1090.2. Security escutcheon have been proven by a test as to be suitable for the use with previously proven 30 and 60 minute timber based doorsets. Escutcheons are mounted to the face of each door leaf and are fixed by bolt through the door leaf. There is no change to the door preparation when using alternative finishes of the SEU1090.2. Security escutcheon (Polished chrome referred to as SSEDKC-PC and Satin Nickel referred to as SSEDKC-SN). The finishes are applied to the escutcheons with no changes made to the fixing methods, therefore it is reasonable to assume that no reduction in the performance of the doorset would be expected as a consequence of their substitution.

Required Doorset Specifications

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

To enable the use of the Securefast electric locks, door loops, electromagnetic locks and escutcheons 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 points are given to enable the hardware to be used safely:

Proposed 30 and 60 Minute Timber/Mineral Based Doorset

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, BM TRADA or Chiltern International Fire) to EN 1634-1.

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.

Door leaves shall be of solid lignocellulosic construction in the lock area encompassing the entire lock case.

The leaves shall incorporate hardwood lippings of a minimum thickness of 6 mm and minimum density 640kg/m^3 .

Door frame density (minimum) - 450 kg/m^3 for 30 minute doorsets and 640 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

Previously fire tested (or assessed by Warringtonfire, BM TRADA or Chiltern International Fire) timber doorsets which have achieved 30 or 60 minutes integrity in accordance with BS 476: Part 22: 1987 or BS EN 1634-1, as discussed in this report, may be fitted with the referenced Securefast Plc's hardware, without detracting from the overall performance of the doorset.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS EN 1634-1: 2014+A1 2018, on the basis of the evidence referred to above. 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.

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 Securefast 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 5th November 2026, 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

Summary of Tested Specimens

For the purposes of the test the doorsets were referenced Doorset A and Doorset B.

Doorset A – 30 Minute

The Doorset had an overall dimension of 2095 mm high by 995 mm wide and incorporated a door leaf of overall dimensions of 2055 mm high by 925 mm wide and 45 mm thick. The door leaf comprised of a Chipboard core with 7 mm thick hardwood lippings fixed on the vertical edges. The doorset was fitted with “Hoppe Paris AR361/60-SP-SSS” handles. The door leaf was hung within a softwood door frame on three “Royde & Tucker Hi-load 102” zinc plated steel hinges.

Doorset B – 60 Minute

The Doorset had an overall dimension of 2085 mm high by 1010 mm wide and incorporated a door leaf of overall dimensions of 2040 mm high by 935 mm wide and 55 mm thick. The door leaf comprised of a Chipboard core with 7 mm thick hardwood lippings fixed on the vertical edges. The doorset was fitted with a pair of “Arrone AR 461/10-SP-PVD” handles. The door leaf was hung within a hardwood door frame on three “Royde & Tucker Hi-load 102” zinc plated steel hinges.

Both doorsets were equipped with “Agrippa 3-80-0070 acoustic door closers” fixed on the exposed face, a “Securefast ASEL2460 electric escape sashlock” lockset connecting to an “ALP101” wiring loop at mid-height. At the head of both leaves a concealed “AEMSF300 Shear Magnet” was fitted. A magnetic lock plate was also fitted at mid-width and three quarter height of both leaves.

Test Results:	Doorset A	Doorset B	
Integrity performance	Sustained flaming	31 minutes	66 minutes [#]
	Gap gauge	31 minutes	66 minutes [#]
	Cotton Pad	31 minutes	66 minutes [#]
Insulation performance		31 minutes	66 minutes [#]

[#]The test duration. The test was discontinued after a period of 66 minutes.

Date of Test 14th July 2014

Test Sponsor Securefast Plc Ltd

Declaration by Securefast 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.

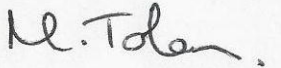
Signed:

For and on behalf of:

Signatories


Responsible Officer A Green-Morris* - Certification Engineer


Approved R Anning* - Principal Certification Engineer


Approved M. Tolan* - Senior Certification Engineer

* For and on behalf of Warringtonfire.

Report Issued: 8 th November 2021
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The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.

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Revision History

Issue No:	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

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