

Title:

The Fire Resistance Performance
Of Doorsets Incorporating Frisco
Door Furniture

Report No:

WF No. 169279 Issue 10

Prepared for:

Frisco (UK) Sales Ltd

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TABLE OF CONTENTS

SECTION	PAGE
Foreword.....	3
Executive Summary	4
Introduction.....	5
Assumptions.....	5
Proposals	7
Assessed Performance	14
Conclusions.....	21
Review	22
Validity.....	23
Summary of Primary Supporting Data	24
Test report review.....	29
Limitations	31
Signatories.....	33
Revision History	34
Annex A.....	36

Foreword

This assessment report has been commissioned by Frisco (UK) Sales Ltd and relates to the fire resistance of door handles and accessories.

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 products, 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 EN 1634-1:2014+A1:2018.

This scope document cannot be used as supporting documentation for either a CE marking application for doorsets, 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 of the proposed door handles and accessories under the particular conditions of the test; they are not intended to be the sole criterion for considering the potential fire hazard of the door handles and/or accessories 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

Objective This report considers the fire resistance performance of doorsets, when fitted with Frisco's door handles and accessories, as referenced in this report of which further details can be found within the annex.

Report Sponsor **Frisco (UK) Sales Ltd**

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Summary of Conclusions Should the recommendations given in this report be followed, it can be concluded that timber doorsets which, which have previously been successfully fire tested to EN 1634-1 by a laboratory accredited to IS/IEC 17025 (under International Laboratory accreditation Cooperation (ILAC) membership), and have achieved up to 60 minutes, as discussed in this report, may be fitted with Frisco's door handles and miscellaneous items such as surface mounted hardware as discussed in this report, without detracting from the overall integrity performance (and insulation where relevant) of the doorset.

Should the recommendations given in this report be followed, it can be concluded that timber doorsets which incorporate non-combustible substrates, which have previously been successfully fire tested to EN 1634-1 by a laboratory accredited to IS/IEC 17025 (under International Laboratory accreditation Cooperation (ILAC) membership), and have achieved 60 minutes, as discussed in this report, may be fitted with Frisco's pull handles, without detracting from the overall integrity performance (and insulation where relevant) of the doorset.

Should the recommendations given in this report be followed, it can be concluded that timber doorsets which, which have previously been successfully fire tested to EN 1634-1 by a laboratory accredited to IS/IEC 17025 (under International Laboratory accreditation Cooperation (ILAC) membership), and have achieved 60 minutes, as discussed in this report, may be fitted with Frisco's digital locks, without detracting from the overall integrity performance (and insulation where relevant) of the doorset.

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

Valid until 03 May 2029

Introduction

This report considers the fire resistance performance of doorsets, when fitted with Frisco (UK) Sales Ltd door hardware, as referenced in the Annex of this report.

For the levers and knobs, it is proposed timber based doorsets are required to provide a fire resistance performance of up to 60 minutes integrity and insulation, with respect to or BS EN 1634-1:2014 + A1:2018.

For the pull handles it is proposed timber based doorsets are required to provide a fire resistance performance of 60 minutes integrity and insulation, with respect to BS EN 1634-1:2014 + A1:2018.

For the accessories it is proposed timber based doorsets are required to provide a fire resistance performance of up to 60 minutes integrity and insulation, with respect to BS EN 1634-1:2014 + A1:2018.

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

It is assumed that the proposed architectural hardware will be fitted to timber based doorsets which have previously been shown to be capable of providing up to 60 minutes, including any mortice hardware where appropriate.

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.

Doorset Details

The lever/knob furniture will always be used in combination with a lock/latch, and it is therefore assumed that the tested doorset will have been tested or assessed when incorporating a latch/lock.

The spindle hole should be as small as possible, allowing for the operation of the handle, but shall be a maximum 16 mm in diameter.

Where pull handles are over 1000 mm high, the chosen door shall have specific test/approval for pull handles to the required size.

Installation

This appraisal does not consider the implications of installing a specific lock, within a fire door construction and only considers the influence of the lever/knob handle furniture, the suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence. Including any additional intumescent protection included either side of the lock case where applicable.

Where 30, 60 minutes timber based doorsets are fitted with bolt-through or back to back pull handles the bolt holes shall incorporate intumescent mastic on both sides as additional protection, unless specific test data can be provided.

The intumescent protection included either side of the lockcase shall be as tested/approved for the specific lockcase

The lever handles shall not be fitted higher than 1000 mm from the centre of spindle to the finished floor level of the surrounding floors.

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.

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.

Proposals

It is proposed that previously fire tested timber based doorsets which have achieved up to 60 integrity and insulation performance, as discussed later in this report, may be fitted with door handles and accessories, in accordance with recommendations given in this report without detracting from the overall performance of the doorset.

It is also proposed that the doorsets may be of single or double-leaf configuration. Details of the proposed range of handles are as identified in Annex A and B.

Aerotek Range

Manufacturing location

Full details are retained on file by Warringtonfire.

Lever handles

The range consists of lever on rose and are all fixed with the same bolt through fixings or are entirely surface mounted. The levers and rose are manufactured from stainless steel and supplied in a variety of lever designs. The range is available in a variety of finishes.



Safety lever on plate

The range consists of lever on backplate and are all entirely surface mounted. The levers and rose are manufactured from stainless steel. The range is available in a variety of finishes.



Escutcheons

The range consists of escutcheons with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from stainless steel. The range is available in a variety of finishes.



Cylinder door pulls

The range consists of cylinder door pulls with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from stainless steel. The range is available in a variety of finishes.



Pull handles

The range consists of pull handles and are all fixed with the same bolt through fixings or are entirely surface mounted. The pull handles are manufactured from stainless steel and supplied in a variety of handle designs. The range is available in a variety of finishes.



Signage

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Push plate/finger plate

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Indicating bolt

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Sprung security bolt

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Coat hooks

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Black Antique Range

Manufacturing location

Full details are retained on file by Warringtonfire.

Lever handles

The range consists of lever on rose and are all fixed with the same bolt through fixings or are entirely surface mounted. The levers and rose are manufactured from mild steel and supplied in a variety of lever designs. The range is available in a variety of finishes.



Bathroom indicator

The range is all surface mounted and manufactured from mild steel as well as being available in a variety of finishes.



Centre door knob

The range consists of door knobs and are all entirely surface mounted. The knobs are manufactured from mild steel and supplied in a variety of lever designs. The range is available in a variety of finishes.



Cylinder pull

The range consists of cylinder door pulls with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from mild steel. The range is available in a variety of finishes.



Bolts

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Door chain

The range is all surface mounted and manufactured from mild steel as well as being available in a variety of finishes.



Escutcheon

The range consists of escutcheons with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from mild steel. The range is available in a variety of finishes.



Push plate/finger plate

The range is all surface mounted and manufactured from mild steel as well as being available in a variety of finishes.



Numerals

The range is all surface mounted and manufactured from mild steel as well as being available in a variety of finishes.



Pull Handles

The range consists of pull handles and are all fixed with the same bolt through fixings or are entirely surface mounted. The pull handles are manufactured from mild steel and supplied in a variety of handle designs. The range is available in a variety of finishes.



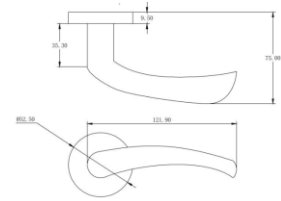
Freestyle Range

Manufacturing location

Full details are retained on file by Warringtonfire.

Lever handles

The range consists of lever on rose and are all entirely surface mounted. The levers and rose are manufactured from aluminium and supplied in a variety of lever designs. The range is available in a variety of finishes.



Escutcheons

The range consists of escutcheons with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from aluminium. The range is available in a variety of finishes.



Thumbturns

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Eurotek Range

Manufacturing location

Full details are retained on file by Warringtonfire.

Lever handles

The range consists of lever on rose or backplate and are all entirely surface mounted. The levers are manufactured from aluminium and the roses or backplates are manufactured from either aluminium or steel and supplied in a variety of lever designs. The range is available in a variety of finishes.



Cylinder pull

The range consists of cylinder door pulls with different size cut outs to accommodate the operational lock needs, (key, europrofile etc). The escutcheons are made from aluminium. The range is available in a variety of finishes.



Thumbturns

The range is all surface mounted and manufactured from aluminium as well as being available in a variety of finishes.



Push plate/finger plate

The range is all surface mounted and manufactured from aluminium as well as being available in a variety of finishes.



Signage

The range is all surface mounted and manufactured from aluminium as well as being available in a variety of finishes.



Accessories group 1

Manufacturing location

Full details are retained on file by Warringtonfire.

Door Chains

The range is all surface mounted and manufactured from Brass as well as being available in a variety of finishes.



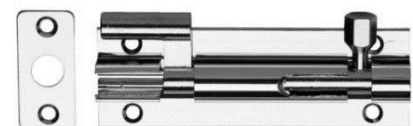
Door Selector

The range is all surface mounted and manufactured from stainless steel as well as being available in a variety of finishes.



Barrell bolts

The range is all surface mounted and manufactured from brass as well as being available in a variety of finishes and lengths.



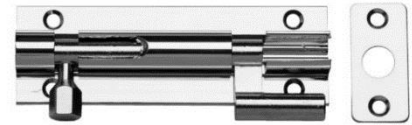
Accessories group 2

Manufacturing location

Full details are retained on file by Warringtonfire.

Barrell bolts

The range is all surface mounted and manufactured from aluminium as well as being available in a variety of finishes and lengths.



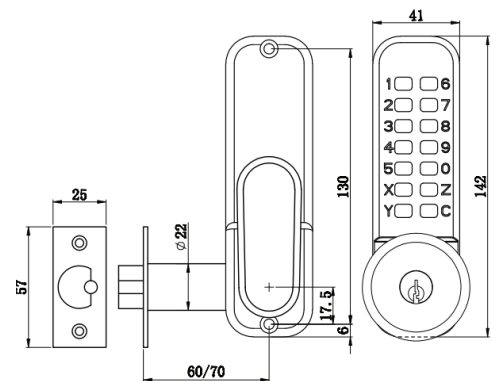
Digital Lock Range

Manufacturing location

Full details are retained on file by Warringtonfire.

Digital Locks

All digital locks are fitted with the same tubular latch which comprises of zinc lockcase with a zinc latch bolt with a steel forend and strike plate. The digital push button locks are manufactured from zinc with a rubber gasket secured by 2 bolt through fixings. The push button locks are available with a variety of lever handles/knobs.



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.

Lever and knob Handles

This range consists of all the lever handles/door knobs specified above in the various ranges and further details within Annex A.

Fire doors often incorporate locking/latching devices either to retain the doorset in the closed position during a fire or simply for keeping the doorset closed/locked in normal use.

The introduction of a lock/latch case into a timber based leaf can increase the risk of localised integrity failure, via either the mortise removing enough leaf material that premature burn through can occur, or by interruption of the intumescent seals around the leaf perimeter by the strike/forend plate.

This appraisal does not however consider the implications of installing a specific lock, within a specific timber based fire door construction and only considers the influence of the lever/knob handle furniture, the suitability of the door leaf and latch/lock should be demonstrated by separate test/assessment evidence.

The proposed lever handles or knobs are manufactured from either zinc, aluminium, brass or steel and are either fixed with bolt through fixings. All of the lever handles require the removal of material to accommodate a 16 mm diameter hole. There are multiple variations of shapes and finishes applied to the proposed handles. There is no interruption of intumescent seals around the leaf perimeter, this already being a consequence of the inclusion of the door lock or latch.

The impact of the handles melting or deforming on the exposed face, and possible ignition on the unexposed face of plastic or other flammable elements associated with the handles also has to be considered.

The hierarchy of melting temperatures is as follows:

1. Zinc alloy (approx. 380-420°C)
2. Aluminium alloy (approx. 462-671°C)
3. Brass alloy (approx. 930°C)
4. Steel (approx. 1425-1540°C)

The effect of the minor changes in handle shape associated with each handle would be expected to be negligible and no reduction in performance would be anticipated as a consequence of these variations. On this basis testing with products of a lower melting point will cover the handles with a higher melting point.

The impact of any potentially flammable coating will also need to be considered when fitted to uninsulated steel doorsets.

Timber based

The performance of Doorset A during the test referenced WF504600 and

Doorsets 30 minutes

Doorset A during the test referenced as WF167471 is cited to display the ability of the lever hands to contribute towards the required fire resistance performance of 30 minute timber based doorsets.

Doorset A included in test report WF504600 was a 2052 x 962 mm single acting single leaf doorset with a 1978 x 840 x 44 mm VIDA core with 4 mm Jiangsu facings with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a softwood frame with a single 20 x 4 mm perimeter intumescent fire seal fitted centrally within the frame rebate. The doorset opened towards the heating conditions. Doorset A was fitted with an aluminium lever on latch plate (33914) in conjunction with a tubular latch fitted with intumescent.

There was a cotton pad failure at 42 minutes at the top corner of the hanging edge a further cotton pad failure was recorded at 43 minutes at the top corner of the leading edge, there was sustained flaming across the head of the doorset at 44 minutes and the doorset was subsequently blanked off at 45 minutes to allow the testing of doorset B to continue.

Doorset A within WF Report No. 167471 was a 2078 mm high by 1007 mm wide latched single-action, single-leaf typical 30 minute doorset incorporating a door leaf of dimensions 2045 mm high by 940 mm wide by 44 mm thick stiled and railed door, lipped on the vertical edges with hardwood, hung within a softwood frame, incorporating a single 15 x 4 mm perimeter intumescent fire seal positioned centrally within the frame rebate. Doorset A was fitted with a steel through bolted lever handle in conjunction with a tubular latch fitted with 1 mm interdens.

Doorset A satisfied the failure criteria up to 35 minutes along the head of the doorset. The doorset was blanked off at 40 minutes to allow the testing of Doorset B to continue. No failure was reported associated with or coincident to the hinges.

The performance of the tests mentioned above is cited to display the ability of aluminium and steel lever handles to contribute towards the required fire resistance of 30 minute timber based doorset.

The other lever handles in the proposed range have either the same melting point or have a higher melting point and are therefore it is the aluminium lever handle which is considered the most vulnerable because of the low melting point. The models that are entirely surface mounted do not require any additional removal of timber within the leaf (with the exception of the fixing holes) or interruption of intumescent seals around the leaf perimeter, these already being a consequence of the inclusion of the door lock or latch.

The aluminium and steel lever handles discussed previously is therefore considered suitable test data to support the use of the full range of proposed lever handles listed within the annex for use with timber based doors of 30 minute integrity and insulation.

Timber based doorsets 60 minutes

The hardware is supplied in a range of applied finishes e.g. Satin Stainless Steel and Brushed Stainless Steel. The change of finish from the proposed hardware is not considered to have any negative influence on the performance of the hardware when used in the proposed applications because the fundamental material does not change. The proposed hardware with an alternative finished are positively appraised.

The performance of Doorset A And Doorset B during the test referenced WF503393 is cited to display the ability of the lever hands to contribute towards the required fire resistance performance of 60 minute timber based doorsets.

Doorset A & B included in test report WF503393 were a 2087 x 1012 mm single acting single leaf doorset with a 2040 x 932 x 54 mm graduated density chipboard core with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a hardwood frame with two 15 x 4 mm perimeter intumescent strips fitted within the frame rebate. The doorsets opened towards the heating conditions of the test. Doorset A was fitted with an aluminium lever on latch plate (33914) in conjunction with a tubular latch fitted with intumescent and Doorset B was fitted with a stainless steel through bolted lever handle in conjunction with a tubular latch fitted with intumescent.

On Doorset A there was a sustained flaming failure at 63 minutes at the top hinge position and there was a sustained flaming failure at 65 minutes along the head of Doorset B. the test was discontinued at 68 minutes.

The performance of the test mentioned above is cited to display the ability of aluminium and steel lever handles to contribute towards the required fire resistance of 60 minute timber based doorset.

The other lever handles in the proposed range have either the same melting point or have a higher melting point and are therefore it is the aluminium lever handle which is considered the most vulnerable because of the low melting point. The models that are entirely surface mounted do not require any additional removal of timber within the leaf (with the exception of the fixing holes) or interruption of intumescent seals around the leaf perimeter, these already being a consequence of the inclusion of the door lock or latch.

The aluminium and steel lever handles discussed previously is therefore considered suitable test data to support the use of the full range of proposed lever handles listed within the annex for use with timber based doors of 30 minute integrity and insulation.

The hardware is supplied in a range of applied finishes e.g. Satin Stainless Steel and Brushed Stainless Steel. The change of finish from the proposed hardware is not considered to have any negative influence on the performance of the hardware when used in the proposed applications because the fundamental material does not change. The proposed hardware with an alternative finished are positively appraised.

Pull handles

This range consists of all the Pull handles specified above in the various ranges and further details within Annex A.

The range consists of Steel pull handles.

The proposed are available as either.

- Back-to-Back mounting
- Bolt-Through from one side.

All are fixed with a M8 bolt.

The range of pull handles can also be incorporated with square or circular roses which the fixing bolt bypasses when the handle is being secured to the door.

The bolt-through, back-to-back and secret fix variants are retained by M8 bolt-through steel fixings. The handles are entirely surface mounted and do not require any additional removal of timber from the leaf (with the exception of the fixing holes) or interruption of intumescent seals around the leaf perimeter.

Although not requiring any additional material removing, the back-to-back variants may be considered to be a slightly more onerous application as the metal handle on the exposed face is likely to act as heatsink, transferring increased temperatures into the fixing holes and across to the unexposed face.

The possible ignition on the unexposed face of plastic or other flammable elements associated with the handles also has to be considered.

Timber based doorsets 60 minutes

The performance of Doorset B identified in test WF Report No. 167471 is cited to display the ability of the pull handles to contribute towards the required fire resistance performance of 60 minute timber based doorsets.

Doorset B within WF Report No. 167471 was a 2072 x 1003 mm single acting single leaf doorset with a 2037 x 929 x 52 mm flaxboard core, softwood stiles and rails, lipped on the vertical edges, non-combustible board sub-facings and chipboard outer facings hung within a hardwood frame, incorporating a single 25 x 4 mm perimeter intumescent fire seal positioned centrally within the frame rebate. The doorset opened towards the heating conditions of the test. The doorset was fitted with a sash lock lever handles and a steel pull handle referenced 34474 fitted in back to back orientation.

Doorset B satisfied the failure criteria up to 68 minutes, at which point the test was discontinued. No failure was reported or associated with the pull handles.

The performance of the test mentioned above is cited to display the ability of steel pull handles to contribute towards the required fire resistance of 60 minute timber based doorsets when incorporating non-combustible sub faces.

The back to back fixing of the pull handle is considered most onerous of the fixing methods as the other methods require either less material to be removed from the door leaf, or that the handle orientation provides either the same or less of a heat sync when compared to the tested pull handle.

The accessories of the pull handle incorporate a square or circular roses which the fixing bolt bypasses, the rose which is surface mounted and is the same material as the tested would have little to no effect upon the doorset.

The length of the pull handle is not considered critical to the fire resistance performance, providing it does not reach a size that is considered to influence the stability of the distortion or induce additional distortion into the door height on this basis where pull handles are over 1000 mm high, the chosen door shall have specific test/approval for pull handles to the required size.

Empirical data suggests pull handle of a maximum 1000 mm in height is unlikely to have a detrimental impact on the performance of the doorset, as the penetration through the door leaf does not change with respect to the length of the handle, consequently 1000 mm is the maximum length of pull handle approved, unless the chosen door has specific test/approval for pull handles to the required size.

The hardware is supplied in a range of applied finishes e.g. Satin Stainless Steel and Brushed Stainless Steel. The change of finish from the proposed hardware is not considered to have any negative influence on the performance of the hardware when used in the proposed applications because the fundamental material does not change. The proposed hardware with an alternative finished are positively appraised.

It is assumed that the proposed hardware will be fitted to timber based doorsets which have previously been tested with alternative pull handles and are capable of providing up to 60 minutes integrity and insulation incorporating non-combustible sub faces.

All of the proposed models incorporate the same base material and have the same or smaller fixing methods. It is reasonable to assume that the proposed hardware will not reduce the fire resistance performance of a 60 minute timber based doorset incorporating non-combustible sub faces.

Miscellaneous hardware

This range consists of Escutcheons, Cylinder Door Pulls, Signage, Push Plates, Indicator Bolts, Security Bolts, Coat Hooks, Bathroom Indicators, Centre Door Knobs, Door Chains, Numerals, Thumbturns, Door Selectors And Barell Bolts specified above in the various ranges and further details within Annex A. All products are manufactured from either brass, aluminium or steel and are entirely surface fixed to the face of the door leaf.

Timber based doorsets 30 and 60 minute

All of the proposed hardware is surface mounted and the impact upon the doorset would be expected to be negligible and no reduction of fire performance would be expected as it does not intrude upon the door. If the components were to be fitted to the exposed face they would be consumed or fall away within the early stages of the fire test. If the components were to be fitted to the unexposed face of the doorset the insulating properties of the timber doorset would protect the hardware from any direct flaming or excessive heat release which may result in the ignition of the components of the finger guard. Therefore, the range of the proposed hardware is positively appraised.

The hardware is supplied in a range of applied finishes e.g. Satin Stainless Steel and Brushed Stainless Steel. The change of finish from the proposed hardware is not considered to have any negative influence on the performance of the hardware when used in the proposed applications because the fundamental material does not change. The proposed hardware with an alternative finished are positively appraised.

Digital Locks

This range consists of all the Digital Locks specified above in the various ranges and further details within Annex A.

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 locks to be used safely:

It is critical that the lock dimensions are not increased since the increased mortice required for a large case may lead to an earlier burn through of the leaf or increased strike/forend 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.

With regards the intumescent protection, it is critical that this is not reduced from that tested, as the reaction of this material when subjected to the heating conditions of the test is essential in limiting the burn through of the leaf and at the leaf to frame gap at the lock position.

In terms of the lock material, 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.

Timber based doorsets 60 minutes

Substitution of alternative locksets from the proposed ranges may therefore be considered in terms of the critical aspects discussed and where such locksets fall within the scope of the tested locksets, it is considered reasonable to assume that no reduction in the performance of the doorset would be expected because of their substitution.

The performance of Doorset B during the test referenced WF535128 is cited to display the ability of the digital push button locks to contribute towards the required fire resistance performance of 60 minute timber based doorsets.

Doorset B included in test report WF535128 was a 2085 x 1005 mm single acting single leaf doorset with a 2040 x 930 x 54 mm graduated density chipboard core with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a hardwood frame with two 15 x 4 mm perimeter intumescent strips fitted within the frame rebate. The doorsets opened towards the heating conditions of the test. The doorset was fitted with 2 pushbutton locks at different heights, the higher lock with the pushbutton to the exposed face which was engaged for the test duration and the lower pushbutton lock with the pushbutton fitted on the unexposed face. The locks were fitted with 2 mm graphite intumescent fitted around lockcase and behind the forend and strikeplate.

There was a sustained flaming failure at 66 minutes at the top corner of the leading edge and a further sustained flaming failure at 67 minutes at the top corner of the hinged edge. The test was discontinued at 72 minutes.

The performance of the test mentioned above is cited to display the ability of the digital push button locks to contribute towards the required fire resistance of 60 minute timber based doorsets subject to the inclusion of 2 mm graphite intumescent fitted around the lock.

The other push button locks incorporating different handles/knobs in the proposed range have the same melting point and do not require any additional material to be removed and would not be expected to have any additional detrimental effect.

The pushbutton digital locks discussed previously is therefore considered suitable test data to support the use of the full range of proposed lever handles listed within the annex for use with timber based doors of 60 minute integrity and insulation.

The hardware is supplied in a range of applied finishes e.g. Satin Stainless Steel and Brushed Stainless Steel. The change of finish from the proposed hardware is not considered to have any negative influence on the performance of the hardware when used in the proposed applications because the fundamental material does not change. The proposed hardware with an alternative finished are positively appraised.

Conclusions

Should the recommendations given in this report be followed, it can be concluded that previously fire tested, timber based doorsets which have achieved up to 60 minutes integrity and insulation performance, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Frisco's door handles and miscellaneous items as detailed in Annex A, without detracting from the overall integrity performance of the doorset.

Should the recommendations given in this report be followed, it can be concluded that previously fire tested, timber based doorsets which incorporate non-combustible substrates and have achieved 60 minutes integrity and insulation performance, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Frisco's pull handles as detailed in Annex A, without detracting from the overall integrity performance of the doorset.

Should the recommendations given in this report be followed, it can be concluded that previously fire tested, timber based doorsets which have achieved 60 minutes integrity and insulation performance, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Frisco's digital locks as detailed in Annex A, without detracting from the overall integrity performance of the doorset.

This report 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 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.

Review

It has been confirmed by Frisco (UK) Sales Ltd that there have been no changes to the specification, materials or manufacturing location of the products considered in the original appraisal referenced WF Assessment Report No. 169279 issue 10.

The original assessment has been written using appropriate test evidence generated at accredited test laboratories. The supporting test evidence has been deemed appropriate to support the manufacturers stated design.

The defined scope presented in the original assessment report relates to the behaviour of the proposed design under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the door handles and/or accessories in use.

This revalidation 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 in lieu of fire tests. 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 in lieu of fire tests 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.

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 Assessment Report No. 169279, the contents should remain valid for a further 5 years.

This review is based on information used to formulate the original assessment. No other information or data has been provided by Frisco (UK) Sales Ltd 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.

Validity

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. 503393

The test report referenced WF No. 503393 describes the fire resistance performance of two single-acting, single-leaf doorsets, incorporating various items of hardware in accordance with BS EN 1634-1: 2014+A1:2018.

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

Doorset A had overall nominal dimensions of 2087 mm high by 1012 mm wide, incorporating a single door leaf with overall dimensions of 2040 mm high by 932 mm wide by 54 mm thick. The door leaf was formed from a graduated density chipboard core. This door was hung in a hardwood frame and incorporated the hardware in the below table.

Item Number	Description	Reference	Manufacturer
4	Hinge	14858	Frisco
5	Tubular Latch	70271 63mm NP tubular latch	Frisco
6	Lever Handleset	39914 3000 series lever on latch plate	Frisco
9	Surface Mounted Door closer	28932 93 series Size 3-4 Door closer power adjustable	Frisco
11	Symbol	34486 Fire Door keep shut symbol	Frisco

Doorset B had overall nominal dimensions of 2087 mm high by 1012 mm wide, incorporating a single door leaf with overall dimensions of 2040 mm high by 932 mm wide by 54 mm thick. The door leaf was formed from a graduated density chipboard core. This door was hung in a hardwood frame and incorporated the hardware in the below table.

Item Number	Description	Reference	Manufacturer
4	Hinge	14934	Frisco
7	Tubular Latch	70273 76 mm NP Tubular latch	Frisco
8	Lever Handleset	34436 Tube T bar handle on rose	Frisco
10	Surface Mounted Door closer	28730 3 Series Size 3 Door Closer	Frisco
11	Symbol	34486 Fire Door keep shut symbol	Frisco

Both Doors were orientated such that they opened towards the heating conditions.

The doorset achieved the following results:

Test Results:	Doorset A	Doorset B	
Integrity			
	Sustained flaming	63 minutes	66 minutes
	Gap gauge	63 minutes	66 minutes
	Cotton Pad	63 minutes	66 minutes

* The test duration. The test was discontinued after a period of 68 minutes.

Warrington Fire Research Centre was not involved in any selection or sampling procedures of the specimen or any of the components.

Test date : 31st August 2021

Test Sponsor : Frisco UK Ltd

**WF Report No.
535128**

The test report referenced WF No. 535128 describes the fire resistance performance of two single-acting, single-leaf doorsets, incorporating various items of hardware in accordance with BS EN 1634-1: 2014+A1:2018.

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

Doorset A - Briefly had overall nominal dimensions 2080 mm high by 1000 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 930 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 hung within a softwood frame on three Frisco steel butt hinges referenced Eclipse 14102 bedded on 1 mm Mono ammonium phosphate intumescent Interdens sheet. The doorset incorporated an overhead door closer fitted to the exposed face.

Doorset B - Briefly had overall nominal dimensions 2085 mm high by 1005 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 930 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 hung within a hardwood frame on three Frisco steel butt hinges referenced Eclipse 14934 bedded on 1 mm Mono ammonium phosphate intumescent Interdens sheet. The doorset was also fitted with digital locks which were engaged for the test duration.

Doorset A was orientated so that it opened away from the heating conditions and Doorset B was orientated so that it opened towards the heating conditions of the test.

The doorset achieved the following results:

Test Results:		Doorset A	Doorset B
Integrity	Sustained flaming	35 minutes	68 minutes*
	Gap gauge	40 minutes**	68 minutes*
	Cotton Pad	35 minutes	68 minutes*

* The test duration. The test was discontinued after a period of 68 minutes.

** Doorset Blanked off after 40 minutes.

Representatives of Warrington Certification Limited sampled the building hardware incorporated within the test.

Test date : 27th September 2007

Test Sponsor : Frisco UK Ltd (J/186)

**WF Report No.
504600**

The test report referenced WF No. 504600 describes the fire resistance performance of two single-acting, single-leaf doorsets, incorporating various items of hardware in accordance with BS EN 1634-1: 2014+A1:2018.

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

Doorset A (FD30) has overall nominal dimensions of 961 mm wide by 2052 mm high, incorporating a single door leaf with overall dimensions of 840 mm wide by 1978 mm high by 45 mm thick. The leaf comprised of a VIDA core made of pine blockboard with 4 mm Jiangsu facings and 8 mm solid sapele lippings.

The door leaf was hung in a Jeld-Wen (DFR1051) frame on 3No. Frisco SS ball bearing hinges (Ref. 14852) with 0.8 mm graphite hinge pads (Ref. 14005). Self-closing was achieved by a Frisco aluminium lever on a latch plate (Ref 33914), a Frisco tubular latch (Ref. 70271) and a Frisco intumescent tubular latch kit was used (Ref. 99283). The frame reveal included 1No. Lorient (LP2004) 20 mm wide x 4 mm thick sodium silicate intumescent strip.

Doorset B (FD60) has overall nominal dimensions of 931 mm wide by 2028 mm high, incorporating a single door leaf with overall dimensions of 830 mm wide by 1978 mm high by 55 mm thick. The leaf comprised of a VIDA core made of pine blockboard with 9 mm Jiangsu facings and 8 mm solid sapele lippings.

The door leaf was hung in Jeld-Wen (DFR0306) frame on 3No. Frisco mild steel ball bearing hinges (Ref. 14934) with 0.8 mm graphite hinge pads (Ref. 14903). Self-closing was achieved by a series size 3 door closer (Ref. 28730). The leaf was fitted with a Frisco SS tube T bar handle on rose (Ref. 34436) with and NP Tubular Latch (Ref. 70273) and a Frisco intumescent tubular latch kit was used (Ref. 99283). The frame reveal included 1N0 Lorient (LP1504) 15 mm wide x 4 mm thick PVC encased sodium silicate intumescent seal and 1 No. Lorient (LP1504SS) 15 mm wide x 4 mm thick PVC encased sodium silicate and

polypropylene brush pile.

The leaves of both doorsets were hung so that they opened towards the heating conditions of the test.

The doorset achieved the following results:

Test Results:		Doorset A	Doorset B
Integrity	Sustained flaming	44 minutes	56 minutes*
	Gap gauge	45 minutes**	60 minutes*
	Cotton Pad	42 minutes	54 minutes*

* The test duration. The test was discontinued after a period of 60 minutes.

** Doorset Blanked off after 45 minutes.

Warrington Fire Research Centre was not involved in any selection or sampling procedures of the specimen or any of the components.

Test date : 8th June 2021

Test Sponsor : Frisco UK Ltd

**WF Report No.
167471**

The test report referenced WF No. 167471 describes the fire resistance performance of two single-acting, single-leaf doorsets, incorporating various items of hardware in accordance with BS EN 1634-1: 2000.

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

Doorset A, consisted of a 30 minute Noberne door leaf, the door leaf comprised a flaxboard core, softwood stiles and rails, hardwood lippings to the vertical edges, medium density fibreboard facings and was hung within a softwood door frame on three stainless steel hinges, referenced 'Eclipse 14851' so that it opened towards the heating conditions of the test. The Doorset incorporated brass pull handles, referenced '21137' a tubular latch, referenced '70271' and a stainless steel lever handle set, referenced '50020'. The Doorset was latched for the duration of the test.

Doorset B, consisted of a 60 minute Noberne door leaf, the door leaf comprised a flaxboard core, softwood stiles and rails, hardwood lippings to the vertical edges, non-combustible board sub-facings and chipboard outer facings and was hung within a hardwood door frame on three stainless steel hinges, referenced 'Eclipse 14877' so that it opened towards the heating conditions of the test. The Doorset incorporated a stainless steel pull handle set, referenced 'Back to back PSS472 Eclipse pull handle' a sashlock latch and lockset, referenced '70095 with the cylinder referenced 70164' and a brass handleset, referenced '2050/52BM Q.8 R/SB lever on rose (Frascio- Italy) with escutcheons'. The Doorset was latched for the duration of the test.

The doorset achieved the following results:

Test Results:		Doorset A	Doorset B
Integrity	Sustained flaming	35 minutes	68 minutes*
	Gap gauge	40 minutes**	68 minutes*
	Cotton Pad	35 minutes	68 minutes*

* The test duration. The test was discontinued after a period of 68 minutes.

** Doorset Blanked off after 40 minutes.

Warrington Fire Research Centre was not involved in any selection or sampling procedures of the specimen or any of the components.

Test date : 27th September 2007

Test Sponsor : Frisco UK Ltd (J/044)

Test report review

The original test reports used in support of this assessment have been reviewed and it has been concluded that the test data remains acceptable, and the final result would be unchanged on the following basis:

- A comparison of the test procedures and performance criteria with the current standard has identified that any variations would have no detrimental impact on the performance of the doorset and hardware under test.
- The client has confirmed that there has been no change to the design or material specification of the hardware tested originally.
- The reports are available in their entirety, the products are adequately referenced and linked to the products being considered for assessment, and the ownership of the test data has been confirmed as the assessment report holder.

Declaration by Frisco (UK) Sales Limited

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:

.....
Name:

.....
Position:

.....
Date:

.....
For and on behalf of:

Limitations

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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Signatories



Responsible Officer

A. Green-Morris* - Product Assessor



Approved

R. Anning* - Principal Product Assessor

* For and on behalf of Warringtonfire

Report Issued: 08 February 2008

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: 08 February 2008
Written By: C. Johnson	Approved By: A Kearns
Issue No: 2	Re-issue Date: 13 June 2008
Written By: C. Johnson	Approved By: A Kearns
Reason for Revision: Additions to the Eclipse hinge range.	
Issue No: 3	Re-issue Date: 20 August 2013
Revised By: D Forshaw	Approved By: A Kearns
Reason for Revision: Addition of 14101, 14102 & 14103 MS hinges and inclusion of steel doorset scope of use for hinges.	
Issue No: 4	Re-issue Date: 12 August 2014
Revised By: D Forshaw	Approved By: A Kearns
Reason for Revision: Addition of further hinge models 14922/23/24/26/27/28, 14929/30/31/32, PK929/30/31/32. Lever handles Safety 34760, Mitred 34761 and amendment of hinge code from 14958 to 14925.	
Issue No: 5	Re-issue Date: 08 December 2015
Revised By: D Forshaw	Approved By: A Kearns
Reason for Revision: Addition of further tubular latch models from 70279 to 70282.	
Issue No: 6	Re-issue Date: 08 April 2016
Written By: D Forshaw	Approved By: A Kearns
Reason for Revision: Addition of tubular latch models 70268 and 70269 plus hinges 14754. 14753, 14782, 14973, 14974 & 14975.	
Issue No: 7	Re-issue Date: 29 January 2018
Revised By: R. Anning	Approved By: M. Tolan
Reason for Revision: 14107, 14108 and 14109 hinges added	
Issue No: 8	Re-issue Date: 20 March 2018
Revised By: R. Anning	Approved By: M. Tolan
Reason for Revision: Validation date extended	

Issue No: 9	Re-issue Date: 13 April 2018
Revised By: R. Anning	Approved By: M. Tolan
Reason for Revision: Revalidation and reformatting. Locks, closers, hinges and panic hardware omitted	

Issue No: 10	Re-issue Date: 07 May 2024
Revised By: A. Green-Morris	Approved By: R. Anning
Reason for Revision: 5-year review and revalidation.	

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

Annex A

Aerotek Range

Lever handles

Safety (19mm)	34406, 34407, 34901	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Safety (22mm)	34524, 34525	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Arched	34408, 34409, 34902	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Mitred	34404, 34405, 34904	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Straight	34437, 34438	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
T Bar	34435, 34436, 34903	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Square	34765, 34766, 34767	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
Disabled	34695, 34696	Stainless Steel Lever on Stainless Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB

Safety Lever On Plate

Safety Lever (19mm)	34680, 34681, 34682, 34683	Stainless Steel Lever on Stainless Steel Back Plate	Finishes: SSS, PSS, BLK, SBP, MAB
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Concealed Fix Escutcheons

Standard Key Way Escutcheon	34411, 34401	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Oval Cut Out Escutcheon	34410, 34402	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Euro Profile Escutcheon	34412, 34403	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Blank Escutcheon	34575, 34576	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Square Escutcheon	34577, 34578	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Thumbturns

Thumbturn & Indicating Release	34420, 34423	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
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Thumbturn & Release Non Indicating	34509, 34523	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Disabled Thumbturn & Indicating Release	34415, 34416	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Square Thumbturn & Indicating Release	34579, 34582	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Cylinder Door Pulls

Circular Cylinder Door Pull	34426, 34427	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Standard Keyway Cylinder Door Pull	34480, 34483	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Euro Profile Cylinder Door Pull	34482, 34485	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Oval Cut Out Cylinder Door Pull	34481, 34484	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Pull Handles

Hollow Section D Shaped Bolt Through Pull Handles	34635	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	to	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34656	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34671	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Roses to Suit Solid Section Pull Handles	34697	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	to 34702	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Tubular Section Mitred Pull Handles	34672	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	to	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34677	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Tubular Section Guardsman Bolt Through Pull Handles	34657	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	to	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34670	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Signage

Fire Door Keep Shut Symbol	34486	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Fire Door Keep Locked Symbol	34487	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Automatic Fire Door Keep Clear Symbol	34685	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Fire Door Keep Clear	34477	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Pull Symbol	34689	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Push Symbol	34690	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Male Symbol	34450	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Female Symbol	34451	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Disabled Symbol	34455	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Shower Symbol	34688	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Baby Change Symbol	34687	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Unisex Symbol	34686	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
WC Symbol	34691	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Finger Plates	34495	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34428	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34496	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34429	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Indicating Bolt	34569	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34570	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Sprung Security Bolt	34572	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Coat Hooks	34448	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34424	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34414	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34413	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34449	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	34425	Stainless Steel	Finishes: SSS, PSS, BLK, SBP, MAB

Black Antique

Lever Handles

Fleur-de-Lys Suite	47280	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47300		
	47310		
Wessex Suite	47240	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47260		
	47270		
Georgian Suite	47230	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47235		
	47236		
Saxon Suite	47430	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47440		
	47450		
Tudor Suite	47460	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47470		
	47480		
Warwick Suite	47500	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47510		
	47520		
Winchester Suite	47530	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47531		
	47532		
Canterbury Suite	47540	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47541		
	47542		
Mortice Knobs	47315	Mild Steel Lever on Mild Steel Rose	Finishes: SSS, PSS, BLK, SBP, MAB
	47316		
	47317		

Misc. items

Bathroom Indicator	47405	Mild Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Centre door Knob	47320		
Cylinder Pull	47100		
Scroll Style Bolt	47370 47372		

Straight Bolt	47366 47368	Mild Steel	Finishes: SSS, PSS, BLK, SBP, MAB
Necked Bolt	47374 47375		
Curly Tail Straight Bolt	47376 47377		
Curly Tail Necked Bolt	47378 47379		
Door Chain	47390		
Escutcheons	47330		
	47340 47342		
Finger Plate	47485		
Numerals	47200		
	to 47209		
Pull Handles	47184	Mild Steel	Finishes: SSS, PSS, BLK, SBP, MAB
	47186		
	47190		
	47180		
	47182		
	47188		

Designer Range

Lever Handles on Rose

Monza	62110, 62111, 62116	Aluminium Lever / Aluminium Rose	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
Monte	62130, 62131, 62132	Aluminium Lever / Aluminium Rose	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
Auriga	62117, 62118, 62119	Aluminium Lever / Aluminium Rose	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
Corvette	62150, 62156	Aluminium Lever / Aluminium Rose	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
Ares	62114, 62115	Aluminium Lever / Aluminium Rose	Finishes: PCP/SCP, BLK, MAB
Lena	62140, 62141, 62142	Aluminium Lever / Aluminium Rose	Finishes: PCP, SCP, SNP, BLK, SBP, MAB

Concealed Fix Escutcheons

Standard Key Way Escutcheon	62161, 62461	Aluminium	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
Euro Profile Escutcheon	62163, 62463	Aluminium	Finishes: PCP, SCP, SNP, BLK, SBP, MAB

Thumbturns

Thumbturn & Release	62499, 62491	Aluminium	Finishes: PCP, SCP, SNP, BLK, SBP, MAB
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Eurotek Range

Lever Handles

1000 Series	50054	Aluminium Lever / Aluminium Backplate	SAA, PAA
	50055	Aluminium Lever / Aluminium Backplate	SAA, PAA
	50056	Aluminium Lever / Aluminium Backplate	SAA, PAA
2000 Series	39913	Aluminium Lever / Aluminium Backplate	SAA, PAA
	to	Aluminium Lever / Aluminium Backplate	SAA, PAA
	39917	Aluminium Lever / Aluminium Backplate	SAA, PAA
Black End Cap Suite	32008	Aluminium Lever / Aluminium Backplate	SAA, PAA
	32009	Aluminium Lever / Aluminium Backplate	SAA, PAA
	32010	Aluminium Lever / Aluminium Backplate	SAA, PAA
2000 Series	39918	Aluminium on Steel Rose	SAA, PAA
19mm Eurotek Handle	39905	Aluminium on Steel Rose	SAA, PAA
19mm Excell Handle	32401	Aluminium Lever on Rose	SAA, PAA
Excell Suite	32451	Aluminium Lever / Aluminium Backplate	SAA, PAA
	to	Aluminium Lever / Aluminium Backplate	SAA, PAA
	32456	Aluminium Lever / Aluminium Backplate	SAA, PAA
Excell Contract Suite	32404	Aluminium Lever / Aluminium Backplate	SAA, PAA
	32405	Aluminium Lever / Aluminium Backplate	SAA, PAA
	32406	Aluminium Lever / Aluminium Backplate	SAA, PAA

Pull Handles

Solid Section D Shaped Bolt Through Pull Handles	32433	Aluminium	SAA, PAA
	32437	Aluminium	SAA, PAA
	32429	Aluminium	SAA, PAA
	32430	Aluminium	SAA, PAA
	32431	Aluminium	SAA, PAA
	39925	Aluminium	SAA, PAA
	39926	Aluminium	SAA, PAA
Solid Section D Shaped	32441	Aluminium on Rose	SAA, PAA

Concealed Fix Pull Handles	32442	Aluminium on Rose	SAA, PAA
	32443	Aluminium on Rose	SAA, PAA
Oval Grip Pull Handles	32407	Aluminium	SAA, PAA
	32408	Aluminium	SAA, PAA
Bow Handle	32414	Aluminium	SAA, PAA

Cylinder Pulls Thumbturns & Escutcheons

Circular Cylinder Door Pulls	32409	Aluminium	SAA, PAA
Cylinder Door Pulls	32444	Aluminium	SAA, PAA
	32445	Aluminium	SAA, PAA
	32446	Aluminium	SAA, PAA
Eurotek Escutcheon	39906	Aluminium on Steel Rose	SAA, PAA
	39907	Aluminium on Steel Rose	SAA, PAA
	39908	Aluminium on Steel Rose	SAA, PAA
Excell Escutcheon	32418	Aluminium on Rose	SAA, PAA
	32419	Aluminium on Rose	SAA, PAA
	32420	Aluminium on Rose	SAA, PAA
Eurotek Thumbturn & Release	39909	Aluminium on Steel Rose	SAA, PAA
Excell Thumbturn & Release	32425	Aluminium on Rose	SAA, PAA
	32458	Aluminium on Rose	SAA, PAA

Finger Plates & Signage

Finger Plates	32423	Aluminium	SAA, PAA
	32450	Aluminium	SAA, PAA
Signage	32034	Aluminium	SAA, PAA
	to	Aluminium	SAA, PAA
	32039	Aluminium	SAA, PAA

**Accessories
group 1**

Misc.

Security Door Chains	17970	Brass	Finishes: PB, PCP, SCP, SNP, BLK
Door Selector	28934	Stainless Steel	SSS

Surface Mounted Barrel Bolts

38x25mm Straight Barrel Bolt	11115	Brass	Finishes: PB, PCP, SCP, SNP, BLK
50x25mm Straight Barrel Bolt	11120	Brass	Finishes: PB, PCP, SCP, SNP, BLK
63x25mm Straight Barrel Bolt	11125	Brass	Finishes: PB, PCP, SCP, SNP, BLK
76x25mm Straight Barrel Bolt	11130	Brass	Finishes: PB, PCP, SCP, SNP, BLK
102x25mm Straight Barrel Bolt	11140	Brass	Finishes: PB, PCP, SCP, SNP, BLK
152x25mm Straight Barrel Bolt	11160	Brass	Finishes: PB, PCP, SCP, SNP, BLK
102x38mm Straight Barrel Bolt	11174	Brass	Finishes: PB, PCP, SCP, SNP, BLK
152x38mm Straight Barrel Bolt	11176	Brass	Finishes: PB, PCP, SCP, SNP, BLK
203x38mm Straight Barrel Bolt	11178	Brass	Finishes: PB, PCP, SCP, SNP, BLK
252x38mm Straight Barrel Bolt	11180	Brass	Finishes: PB, PCP, SCP, SNP, BLK
305x38mm Straight Barrel Bolt	11182	Brass	Finishes: PB, PCP, SCP, SNP, BLK
50x25mm Necked Barrel Bolt	11220	Brass	Finishes: PB, PCP, SCP, SNP, BLK
63x25mm Necked Barrel Bolt	11225	Brass	Finishes: PB, PCP, SCP, SNP, BLK
76x25mm Necked Barrel Bolt	11230	Brass	Finishes: PB, PCP, SCP, SNP, BLK
102x25mm Necked Barrel Bolt	11240	Brass	Finishes: PB, PCP, SCP, SNP, BLK
152x25mm Necked Barrel Bolt	11260	Brass	Finishes: PB, PCP, SCP, SNP, BLK
102x38mm Necked Barrel Bolt	11184	Brass	Finishes: PB, PCP, SCP, SNP, BLK
152x38mm Necked Barrel Bolt	11186	Brass	Finishes: PB, PCP, SCP, SNP, BLK
203x38mm Necked Barrel Bolt	11188	Brass	Finishes: PB, PCP, SCP, SNP, BLK

**Accessories
 group 2**

Surface Mounted Barrel Bolts			
50mm Straight Barrel Bolt	13520	Aluminium	Finishes: SAA, PAA
63mm Straight Barrel Bolt	13525	Aluminium	Finishes: SAA, PAA
76mm Straight Barrel Bolt	13530	Aluminium	Finishes: SAA, PAA
102mm Straight Barrel Bolt	13540	Aluminium	Finishes: SAA, PAA
152mm Straight Barrel Bolt	13560	Aluminium	Finishes: SAA, PAA
76mm Necked Barrel Bolt	13570	Aluminium	Finishes: SAA, PAA
102mm Necked Barrel Bolt	13580	Aluminium	Finishes: SAA, PAA
152mm Necked Barrel Bolt	13590	Aluminium	Finishes: SAA, PAA

Digital Locks

Digital Locks	70249	Zinc	Finishes: PB, PCP, SCP, SNP, BLK
	70253	Zinc	Finishes: PB, PCP, SCP, SNP, BLK
	70260	Zinc	Finishes: PB, PCP, SCP, SNP, BLK
	70263	Zinc	Finishes: PB, PCP, SCP, SNP, BLK