

**Title:**

The Fire Resistance  
Performance of Doorsets  
Incorporating Carlisle Brass  
Lever/knob Furniture and pull  
handles

**WF Assessment Report No:**

**532395 Issue 2**

**Prepared for:**

**Carlisle Brass Limited**

Part of Assa Abloy  
Parkhouse Road  
Carlisle  
CA3 0JU  
United Kingdom

**Date:**

25 October 2023

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## Foreword

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This assessment report has been commissioned by Carlisle Brass Limited and relates to the fire resistance of door handles and accessories.

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

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

## Executive Summary

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**Objective** This report considers the fire resistance performance of doorsets, when fitted with Carlisle Brass lever/knob furniture and pull handles, as referenced in this Annex.

**Report Sponsor** **Carlisle Brass Limited**

**Address** Part of Assa Abloy  
Parkhouse Road  
Carlisle  
CA3 0JU  
United Kingdom

**Summary Of 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, and steel-based doorsets which have achieved up to 120 minutes integrity, in accordance with BS EN 1634-1:2014 + A1:2018, as discussed in this report, may be fitted with Carlisle Brass lever/knob handles as detailed in Annex A, without detracting from the overall integrity performance of the doorset.

Additionally 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 120 minutes integrity and insulation performance, and steel-based doorsets which have achieved up to 120 minutes integrity, in accordance with BS EN 1634-1:2014 + A1:2018, as discussed in this report, may be fitted with Carlisle Brass pull handles as detailed in Annex B or the accessories as detailed in annex C, without detracting from the overall integrity performance 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, on the basis of 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** 24 October 2028

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## Introduction

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This report considers the fire resistance performance of doorsets, when fitted with Carlisle Brass 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, the proposed steel-based doorsets are required to provide a fire resistance performance of up to 120 minutes integrity 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 up to 120 minutes integrity and insulation, the proposed steel-based doorsets are required to provide a fire resistance performance of up to 120 minutes integrity 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 120 minutes integrity and insulation, the proposed steel-based doorsets are required to provide a fire resistance performance of up to 120 minutes integrity 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

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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 or up to 120 minutes integrity and insulation, Steel-based doorsets which have previously been shown to be capable of providing 120 minutes integrity, 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 and latched 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, 90 and 120 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

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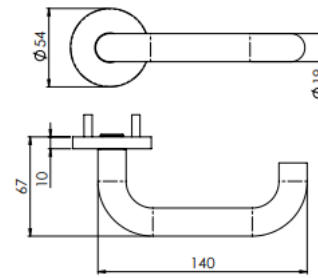
It is proposed that previously fire tested timber based doorsets which have achieved up to 60 or 120 minutes integrity and insulation performance, and Steel-based doorsets which have achieved up to 120 minutes integrity, as discussed later in this report, may be fitted with Carlisle Brass handles, in 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.

## Lever and knob Handles – Annex A

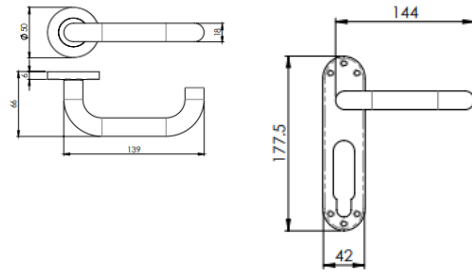
### BS EN 1906 Grade 4

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



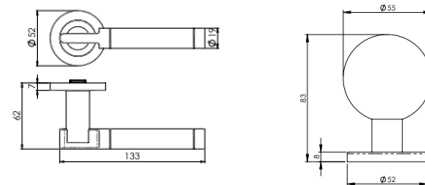
### G316

The range consists of levers on rose, knobs on rose, levers on back plate and backplates supplied without lever handles (but will be used with lever handle). All of the range is manufactured from stainless steel. The levers/knobs on rose are bolt through fixed and the levers on back plate is surface fixed. The range is available in a variety of finishes.



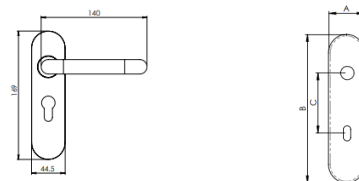
### G304

The range consists of levers on rose and knobs on rose. All the range is manufactured from stainless steel. The levers/knobs on roses are bolt through fixed. The range is available in a variety of finishes.



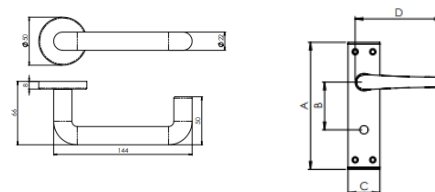
### G201

The range consists of levers on back plates and backplates supplied without lever handles (but will be used with lever handle). All the range is manufactured from stainless steel. The range is all surface mounted. The range is available in a variety of finishes.



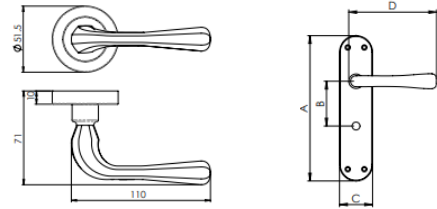
### Aluminium

The range consists of levers on rose, levers on backplates and backplates supplied without lever handles (but will be used with lever handle). All the range is manufactured from aluminium. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



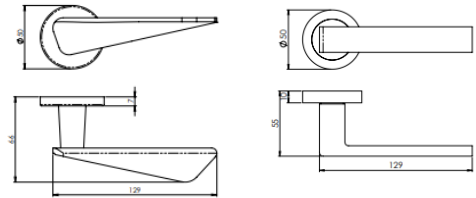
**Manital**

The range consists of levers on rose and levers on backplates. All the range is manufactured from brass. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



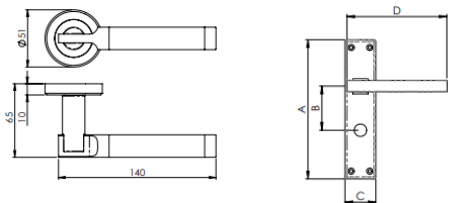
**European**

The range consists of levers on rose. The majority of the range is manufactured from zinc with some other variants manufactured from brass. The levers on roses are bolt through fixed or surface mounted. The range is available in a variety of finishes.



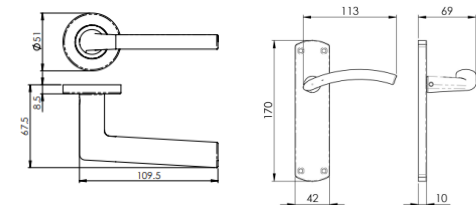
**Serozzetta SZM & ZIN**

The range consists of levers on rose and levers on backplate. All the range is manufactured from brass. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



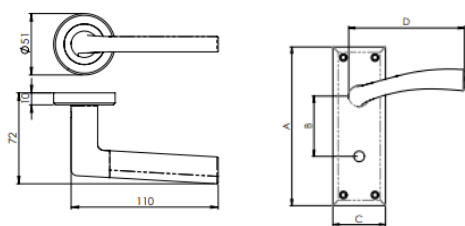
**Serozzetta SZC**

The range consists of levers on rose and levers on backplate. The range is manufactured from either zinc, aluminium or ABS. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



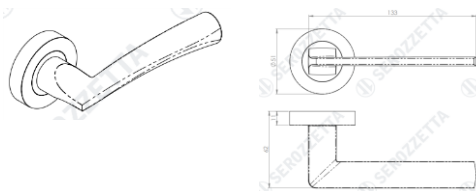
**Serozzetta SZR**

The range consists of levers on rose and levers on backplate. All the range is manufactured from aluminium. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



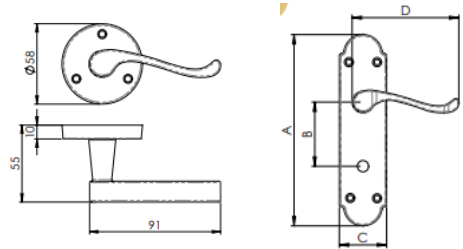
**HouseBuilder Exclusives**

The range consists of levers on rose and levers on backplate. The levers on roses are manufactured with zinc roses and aluminium lever handles, the levers on backplates are manufactured from aluminium and zinc. The levers on roses are bolt through fixed and the remainder of the range is surface fixed. The range is available in a variety of finishes.



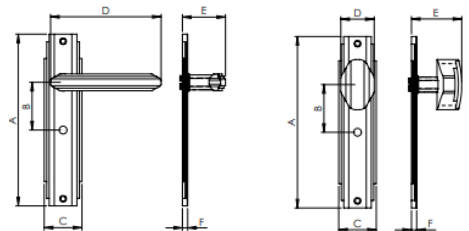
**Traditional**

The range consists of levers on rose and levers on backplate. All the range is manufactured from either brass or zinc. The range is surface fixed. The range is available in a variety of finishes.



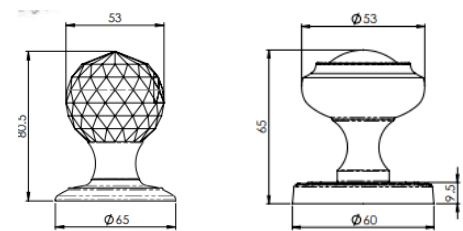
**Art Deco**

The range consists of levers on backplate and knobs on backplate. All the range is manufactured from zinc. All of the range is surface fixed or are bolt through fixed. The range is available in a variety of finishes.



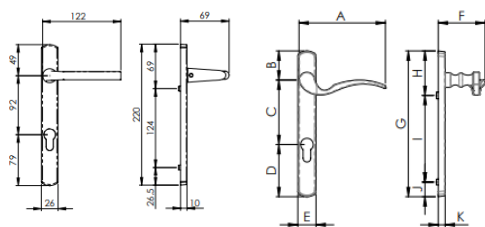
**Mortice Knobs**

The range consists of knobs on rose. The range is manufactured from either zinc, brass or stainless steel rose and a decorative knob. The range is entirely surface fixed or are bolt through fixed. The range is available in a variety of finishes.



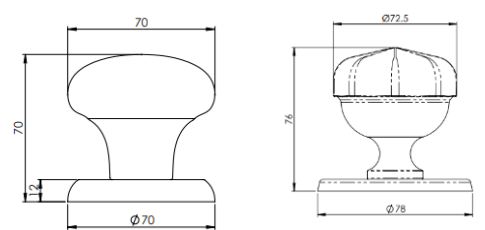
**External**

The range consists of levers on narrow backplates. The range is manufactured from either zinc, aluminium, brass and steel. The range is entirely surface fixed or are bolt through fixed. The range is available in a variety of finishes.



**Centre Door Knobs**

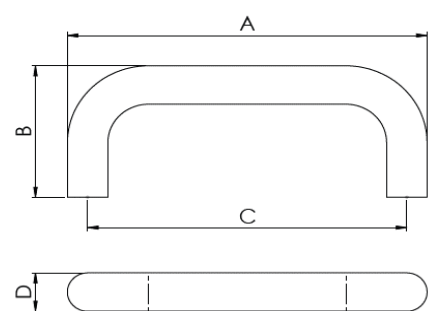
The range consists of knobs on rose. The range is manufactured from a zinc, aluminium and steel rose and a decorative knob. The range is surface fixed or are bolt through fixed. The range is available in a variety of finishes.



**Pull Handles**

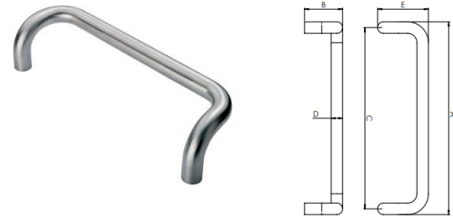
**Direct Pull Handles**

The range consists of pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 169 – 1830 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



**Cranked Pull Handles**

The range consists of cranked pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 244 – 630 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



**“T” Pull Handles**

The range consists of T shaped pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 325 – 1800 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



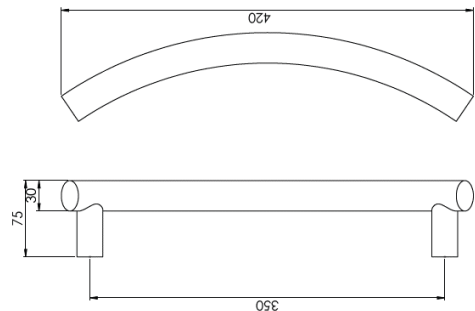
**Mitred Pull Handles**

The range consists of pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 169 – 625 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



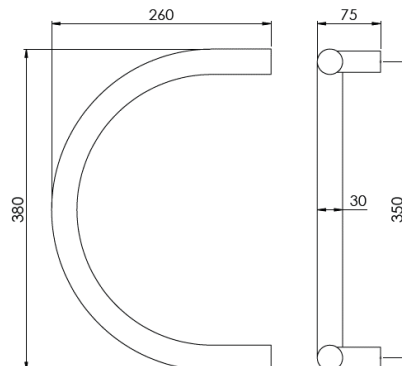
**Semi-Circular Pull Handle**

The range consists of semi-circular pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 244 – 630 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



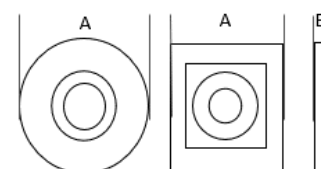
**Curved “T” Pull Handle**

The range consists of semi-circular pull handles manufactured from steel. The diameter of the handle is between 19 – 30 mm. The length of the handle varies from 244 – 630 mm. All of the handles are fixed the same way with a M8 steel bolt. The range is available in a variety of finishes.



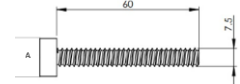
**Face Fix Roses**

The range of face fix roses are intended to be used with pull handles. The roses are either square or circular and are manufactured from steel. The range is available in a variety of finishes.



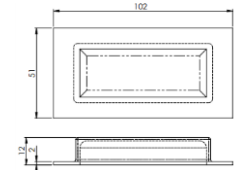
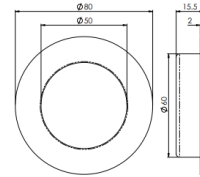
**Bolt Cap Fixings**

The range of bolts are all M8 and steel. The range is available in a variety of finishes.



**Recessed Pull Handles**

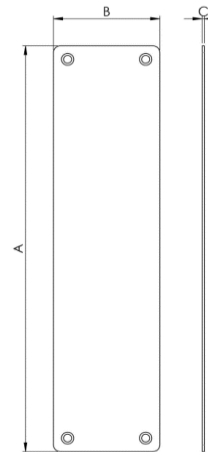
The range consists of recessed pull handles of various shapes manufactured from steel. All of the handles are recessed into the door leaf. The range is available in a variety of finishes.



**Accessories – Annex C**

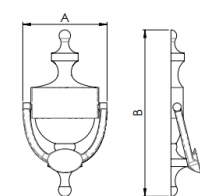
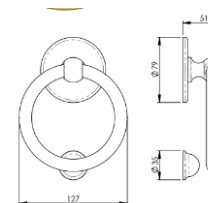
**Push/Pull/Kick Plates**

The range of push/pull/kick plates are manufactured from aluminium, brass or steel. The thickness of each plate varies between 1.2 – 2 mm. The width varies between 75 – 150 mm and the height varies between 300 – 915 mm. All of the plates are surface fixed. The range is available in a variety of finishes.



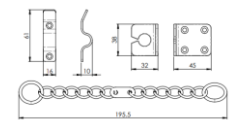
**Door Knockers**

The range consists of door knockers in various shapes all surface fixed to the face of the door leaf. The range is manufactured from either steel or brass. The range is available in a variety of finishes.



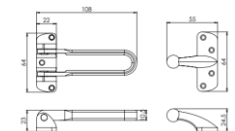
**Door Chain**

The range consists of surface fixed door chains manufactured from brass. The range is available in a variety of finishes.



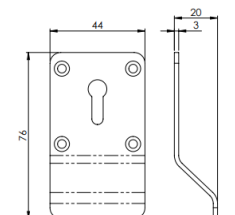
**Door Guard**

The range consists of surface fixed door guards manufactured from either brass or steel. The range is available in a variety of finishes.



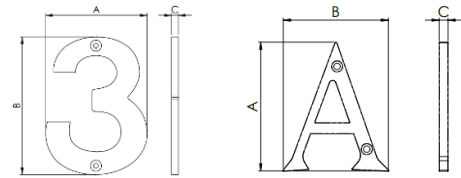
**Cylinder Pulls**

The range consists of surface fixed cylinder pulls guards manufactured from brass or steel. The range is available in a variety of finishes.



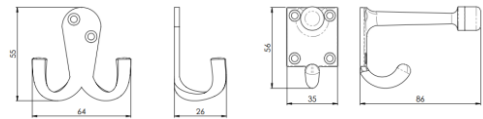
## Numerals

The range consists of surface fixed numerals manufactured from either brass or steel. The range is available in a variety of finishes.



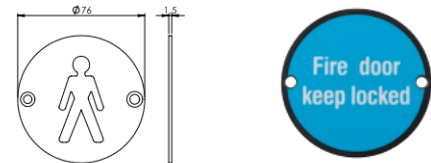
## Hooks

The range consists of surface fixed hooks manufactured from either aluminium or steel. The range is available in a variety of finishes.



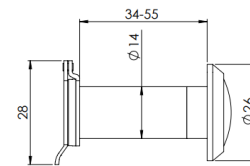
## Signage

The range is manufactured from either aluminium or steel. The range is surface fixed.



## Door Viewers

The range consists of door viewers manufactured from brass or steel. The viewer is fixed through the face of the door leaf. The range is available in a variety of finishes.



## Basic Primary Test Evidence

### WF Report No. 195144

The test referenced WF Test Report No. 195144 and briefly described in the supporting data section of this report, describes a test conducted in accordance with BS EN 1634-1: 2008 which included two single-acting, single-leaf timber doorsets.

The test demonstrated the ability of the doorsets to provide 42 and 36 minutes integrity performances for doorsets A and B respectively.

### WF Report No. 316159

The test referenced WF Test Report No. 316159 and briefly described in the supporting data section of this report, describes a test conducted in accordance with BS EN 1634-1: 2008 which included two. single-acting, single-leaf steel based doorsets.

The test demonstrated the ability of the doorsets to provide 61 and 36 minutes integrity performances for doorsets A and B respectively.

### WF Report No. 345074

The test referenced WF Test Report No. 345074 and 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 doorsets.

The test demonstrated the ability of the doorsets to provide 34 and 46 minutes integrity performances for doorsets A and B respectively.

**WF Report No.  
356836**

The test report referenced WF Report No. 356836 and described briefly in the supporting data section of this report, relates to the fire resistance performance of two single-acting, single-leaf doorsets incorporating various items of hardware in accordance with BS EN 1634-1: 2014.

The test demonstrated the ability of the doorsets to provide 35 and 39 minutes integrity performances for doorsets A and B respectively.

**WF Report No.  
390179**

The test report referenced WF Report No. 390179 and described briefly in the supporting data section of this report, relates to the fire resistance performance of a two single-acting, single-leaf doorsets incorporating various items of hardware in accordance with BS EN 1634-1: 2014.

The test demonstrated the ability of the doorsets to provide 36 and 33 minutes integrity performances for doorsets A and B respectively.

## Assessed Performance

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**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.

### Annex A

#### Lever and knob Handles

This range consists of all the lever handles/door knobs specified above and 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 doorsets 30 minutes

The performance of Doorset A during the test referenced WF 345074 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 WF 345074 was a 2085 x 1000 mm single acting single leaf doorset with a 2040 x 932 x 44 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. 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. The doorset opened towards the heating conditions.

Doorset A was fitted with various items of hardware including a zinc lever handle (SZC010SC) fixed with bolt through fixings in connection with a europrofile sashlock. The handle was fitted at 1000 mm from the fixed floor lever to the centre of the lever handle. The euorprofile sashlock was fitted with a 0.8 mm intercalated graphite kit referenced as FS318 was fitted to all face of the casing and behind the forend and strike plate. There was sustained flaming at 34 minutes at the head of the doorset and subsequently the doorset was blanked off to allow the test to continue. No failures during the test were coincident with the lever handle or the sashlock.

The performance of Doorset A of the test referenced WF 345074 is cited to display the ability of the zinc lever handle (SZC010SC) to contribute towards the required fire resistance of 30 minute timber based doorset.

The other lever handles in the proposed range are less onerous due to the higher melting point; therefore, it is the zinc 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 Zinc 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 B during the test referenced WF 345074 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 B included in test report WF 345074 was a 2085 x 1005 mm single acting single leaf doorset with a 2040 x 932 x 54 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a hardwood frame with a two 15 x 4 mm perimeter intumescent fire seal fitted within the frame rebate. The doorset opened towards the heating conditions.

Doorset B was fitted with various items of hardware including a zinc lever handle (IT83020CP) fixed with bolt through fixings in connection with a euorprofile sashlock. The handle was fitted at 1000 mm from the fixed floor lever to the centre of the lever handle. The euorprofile sashlock was fitted with a 0.8 mm intercalated graphite kit referenced as FS318 was fitted to all face of the casing and behind the forend and strike plate. There was sustained flaming at 46 minutes at the head of the doorset, as well as sustained flaming at the top hinge position at 57 minutes and sustained flaming at the top corner of the leading edge at 59 minutes. The test was discontinued at 60 minutes and subsequently the doorset was blanked off to allow the test to continue. No failures during the test were coincident with the lever handle or the sashlock during the test.

The performance of Doorset B of the test referenced WF 345074 is cited to display the ability of the zinc lever handle (IT83020CP) to contribute towards the required fire resistance of 60 minute timber based doorset.

The other lever handles in the proposed range are less onerous due to the higher melting point; therefore, it is the zinc 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 Zinc 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 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.

**Predominately  
steel based  
doorsets**

The performance of Doorset A during the test referenced WF 316159 is cited to display the ability of the lever handles to contribute towards the required fire resistance performance for 240 minute predominately steel based doorsets.

Doorset A included in test report WF 316159 was a 2090 x 990 single acting single leaf 240 minute steel doorset and included a 2040 x 903 x 45 mm steel based door leaf. The leaf had a paper honeycomb core and was hung within a steel frame on steel hinges. The doorset opened away from heating conditions.

The doorset was fitted with various items of hardware, the lower lockset was fitted with an aluminium lever handle (LRS9001SAA) fixed in a bolt through orientation. The handle was fitted at 1000 mm from the fixed floor lever to the centre of the lever handle. The doorset achieved an integrity rating of 264 minutes disregarding the failure of the cotton pad due to the uninsulated nature of predominately steel based doorsets. The test was discontinued at 264 minutes.

The performance of Doorset A of the test referenced WF 316159 is cited to display the ability of the aluminium lever handle (LRS9001SAA) to contribute towards the required fire resistance of 240 minute steel based doorsets.

The other lever handles in the proposed range are less onerous due to the higher melting point; therefore, it is the Aluminium lever handle, which is considered the most vulnerable, zinc models within the range are not considered because of their more onerous melting point when compared to aluminium. The models that are entirely surface mounted do not require any additional removal of steel within the leaf (with the exception of the fixing holes).

With the exception of the zinc based models, all of the other proposed models incorporate the same base material or the base material with a higher melting point and have the same or less onerous fixing methods. It is reasonable to assume that with the exception of the zinc based models the rest of the proposed hardware will not reduce the fire resistance performance of 240 minute predominately steel based doorsets.

**Issue 2**

The product codes that were previously referenced in the G304 range were incorrect, the new codes are presented below. There is no change to the products in any way and the arguments presented above remain justified.

<b>Original Code</b>	<b>Amended code</b>
35-SS04-JO-HO	35-S4JO-RRHO
35-SS04-CL-HO-01	35-S4LA-RRHO
35-SS04-DI-HO-01	35-S4CL-RRHO
35-SS04-LA-HO-01	35-S4DI-RRHO

It is also proposed that additional products are to be added, the products requested to be added are in the tables below.

<b>Added products to the G201 range</b>			
LOR	CSL1190/201	Nera Lever on Round Rose	Stainless Steel
LOR	CSL1191/201	Spira Lever on Round Rose	Stainless Steel
LOR	CSL1192/201	Treviri Lever on Round Rose	Stainless Steel
LOR	CSL1193/201	Curved Lever on Round Rose	Stainless Steel
LOR	CSL1194/201	Philadelphia on Round Rose	Stainless Steel

Issue 2 added products			
LOR	SZM610	Oasis Lever on round rose	zinc

All of the proposed handles have the same basic construction, fixing method and are manufactured from the same material as the models already appraised. The difference of the proposed handles is the handle shape. The effect of minor changes in handle shape associated with each handle would be expected to be negligible and no reduction in fire performance would be anticipated as a consequence of these variations. As the proposed handles do not influence the performance of the hardware when used in the proposed applications, the proposed additional hardware is positively appraised.

## Annex B

### Pull Handles

The range consists of Steel pull handles.

The proposed are available as either;

- Back-to-Back mounting
- Bolt-Through from one side
- Secret Fix

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 handles can also be fitted with a bolt cap fixing which is a cap on the end of the fixing bolt.

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 or steel 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 30 minutes

The performance of Doorset A during the test referenced WF 345074 is cited to display the ability of the pull handles to contribute towards the required fire resistance performance of 30 minute timber based doorsets.

Doorset A included in test report WF 345074 was a 2085 x 1000 mm single acting single leaf doorset with a 2040 x 932 x 44 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. 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. The doorset opened towards the heating conditions.

Doorset A was fitted with various items of hardware including a 22 mm diameter by 225 mm centre, steel bolt through pull handle (PH500C) to the exposed face. The pull handle was fixed with a M8 through bolt that incorporated no intumescent material. There was sustained flaming at 34 minutes at the head of the doorset and subsequently the doorset was blanked off to allow the test to continue. No failures during the test were coincident with the bolt through pull handle.

As the bolt fully penetrates the door leaf and the door handle was fitted to the exposed face, which acted as a greater heat sync, the addition of a handle on the insulated face of the door leaf would have a negligible effect, as no more additional material is removed from the leaf and the with the door leaf being insulated the additional handle does not add as a greater heat sync.

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 30 minutes integrity and insulation, where no specific test data for the use of bolt through or back to back pull handles, we require the bolt holes to be filled with intumescent mastic or the bolts to be wrapped in a 1 mm graphite tube.

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 30 minute timber based doorset.

### Timber based doorsets 60 minutes

The performance of Doorset B during the test referenced WF 345074 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 included in test report WF 345074 was a 2085 x 1005 mm single acting single leaf doorset with a 2040 x 932 x 54 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a softwood frame with a two 15 x 4 mm perimeter intumescent fire seal fitted within the frame rebate. The doorset opened towards the heating conditions.

Doorset B was fitted with various items of hardware including a 30 mm diameter by 1630 mm centre, steel pull handle fitted back to back (PCT11800) to both faces. The pull handle was fixed with a M8 through bolt that incorporated no intumescent material. There was sustained flaming at 46 minutes which was directly attributed to the concealed closer and was blanked off to allow the test to continue. There was further sustained flaming at 57 minutes at the top hinge position which was blanked off to allow the test to continue. At 60 minutes the test was discontinued at which time there was no failures during the test were coincident with the back to back pull handle.

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.

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, where no specific test data for the use of bolt through or back to back pull handles, we require the bolt holes to be filled with intumescent mastic or the bolts to be wrapped in a 1 mm graphite tube.

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.

### Timber based doorsets 90 or 120 minutes

Where the pull handles are mounted on insulated timber based doors the above testing is considered suitable justification for all the pull handles identified in Annex B as there is no risk of flaming on the unexposed face and the mounting applications are the same throughout.

Additionally as the pull handles are wholly surface mounted and do not require any additional removal of material from the leaf (with the exception of the fixing holes) or interruption of intumescent seals around the leaf perimeter, it is reasonable to assume that all the pull handles identified in Annex B may be incorporated on 90 and 120 minute timber/mineral-based doors.

Where 90 and 120 minutes 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.

On this basis the full range of pull handles are approved for use with timber/mineral-based doors of up to 120 minute integrity and insulation.

### **Predominately steel based doorsets**

The performance of Doorset A during the test referenced WF 316159 is cited to display the ability of the pull handles to contribute towards the required fire resistance for 240 minute predominately steel based doorsets.

Doorset A included in test report WF 316159 was a 2090 x 990 mm single acting single leaf 240 minute uninsulated steel doorset and included a 2040 x 903 x 45 mm steel based door leaf. The leaf was hung within a steel frame on steel hinges. The doorset opened away from the heating conditions.

The doorset was fitted with various items of hardware including a 19 mm diameter by 225 mm centre, steel bolt through pull handle (CSD1225) to the unexposed face. The pull handle was fixed with a M8 through bolt. The doorset achieved an integrity rating of 264 minutes and at no point showed signs of failure around the bolt through pull handle.

The performance of Doorset A of the test referenced WF 316159 is cited to display the ability bolt through pull handle (CSD1225) to contribute towards the required fire resistance of 240 minute rated steel based doorsets.

As the through bolt fully penetrates the door leaf and is the same material as the door leaf, back to back fixings are considered to have a negligible effect upon the doorset because of the non-combustible nature of the leaf. Therefore the back to back fixing method is positively appraised.

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 240 minute predominately steel based doorsets.

### **Accessories for pull handles**

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.

### **Pull handle length**

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.

### **Alternative finishes**

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.

## Recessed Pull Handles

The range of handles is manufactured from aluminium and is available in a variety of shapes. All of the handles are recessed into the door leaf.

### Timber based doorsets 30 minutes

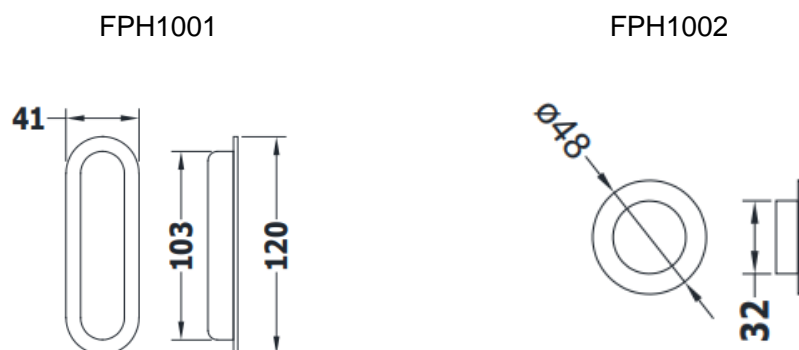
The performance of Doorset A and B during the test referenced WF 390179 is cited to display the ability of the recessed pull handles to contribute towards the required fire resistance performance of 30 minute timber based doorsets.

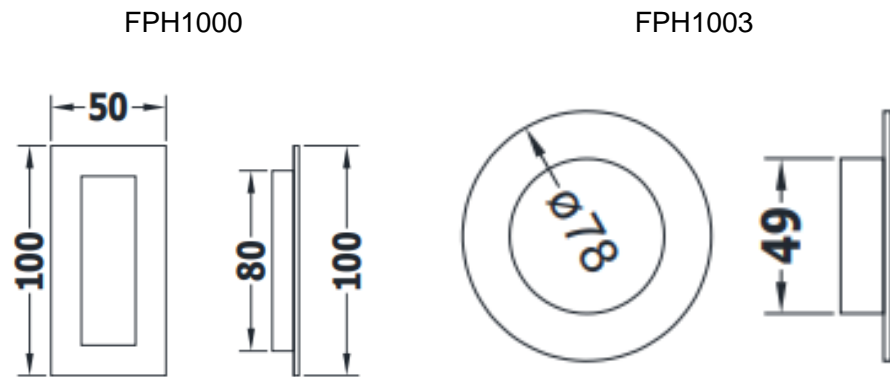
Doorset A included in test report WF 390179 was a 2080 x 997 mm single acting single leaf doorset with a 2040 x 930 x 44 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. The leaf was hung within a softwood frame with a single 15 x 4 mm perimeter intumescent fire seal fitted centrally within the frame rebate. The doorset opened towards the heating conditions.

Doorset A was fitted with various items of hardware including a steel oval radius flush pull handle (FPH1001) to either face and a circular flush pull handle (FPH1002) to either face. Both pull handles were fitted with a 0.8 mm intercalated graphite kit referenced as INT1433. Both recessed pull handles were not fitted so that they would be opposite each other.

Doorset B included in test report WF 390179 was a 2085 x 1000 mm single acting single leaf doorset with a 2040 x 926 x 44 mm graduated density chipboard door with 8 mm hardwood lippings to the vertical edges. 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. The doorset opened towards the heating conditions.

Doorset B was fitted with various items of hardware including a steel rectangular flush pull handle (FPH1000) to either face and a circular flush pull handle (FPH1003) to either face. Both pull handles were fitted with a 0.8 mm intercalated graphite kit referenced as INT1433. Both recessed pull handles were not fitted so that they would be opposite each other.





On reviewing the observations taken from the test it's clear that there were no integrity failures associated with any of the flush pulls on both doorsets for the test duration of 36 minutes.

All of the proposed models have either the same or smaller dimensions than the tested handles. It is therefore reasonable to assume that providing the same level of intumescent protection is applied as identified above, these smaller pulls will not reduce the performance achieved with the tested products provided they are not fitted in back to back application.

#### Alternative doorsets

It is assumed that the proposed hardware will be fitted to timber based doorsets which have previously been tested with alternative recessed pull handles and are capable of providing up to 30 minutes integrity and insulation.

#### Alternative finishes

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.

### Annex C

#### Accessories

This range consists of push/pull/kick plates, door knockers, door chains, door guards, cylinder pulls, numerals, hooks and signage. All products are manufactured from either zinc, aluminium, brass 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.

### **Predominately steel based doorsets**

The use of the proposed hardware on uninsulated steel doors requires further specific consideration as where they are fitted to the non-fire exposed face of an uninsulated doorset it must be proven that it does not present an additional risk to the integrity performance of the doorset whereby the material used must demonstrate that they are not ignited by the high levels of heat transfer through the metal doorset, typically 600-700°C at 120 minutes, increasing to approximately 750-800°C at 240 minutes.

The base proposed hardware is all manufactured from metal, as are the screw fixings, therefore are not subject to potential flaming at the temperatures identified above. Therefore, the range of the proposed hardware is positively appraised.

### **Door Viewer**

The range is manufactured from steel and is through bolted through the face of the door with a 14 or 22 mm diameter hole dependant on the face variation. SWE1010 is the only model that requires a 22 mm diameter hole.

### **Timber based doorsets 30 minutes**

The performance of Doorset B during the test referenced WF 195144 is cited to display the ability of the SWE1010 door viewer to contribute towards the required fire resistance performance for 30 minute timber based doors.

Doorset B included in test report WF 195144 was a 2078 x 1003 mm single acting single leaf doorset with a 2021 x 932 x 44 mm multi layered chipboard door with 8 mm hardwood lippings to the vertical edge. 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. The doorset opened towards the heating conditions.

The doorset was fitted with various items of hardware including a Steel WE1010 door viewer with no intumescent material fitted. SWE1010 is a primarily stainless steel door viewer with a 22 mm diameter cylindrical tube. There was a cotton pad failure at 33 minutes at the latch position which further sustained flamed at 36 minutes. At 41 and 42 minutes there was sustained flaming at the head of the doorset. No other failures were recorded for the test duration or were coincident with the door viewer.

The performance of Doorset B of the test referenced WF 195144 is cited to display the ability SWE1010 to contribute towards the required fire resistance of 30 minute rated timber doorsets.

The SWE1010 incorporates the largest and most onerous model of that which are proposed. The other proposed models require less of the amount of material to be removed through the thickness of the door leaf so that with regards to the effect on expected fire performance other door viewers are considered less onerous and not expected to have a detrimental effect upon the doorset for the required period and are positively appraised provided that the hole in the door face shall follow the shape of the door viewer and be as tight as possible.

### Timber based doorsets 60 minutes

The performance of Doorset B during the test referenced WF 356836 is cited to display the ability of the SWE1010 door viewer to contribute towards the required resistance performance for 60 minute timber based doors.

Doorset B included in test report WF 356836 was a 2080 x 1010 mm single acting single leaf doorset with a 2038 x 932 x 54 mm multi layered chipboard door with 8 mm hardwood lippings to the vertical edge. The leaf was hung within a hardwood frame with two 15 x 4 mm perimeter intumescent fire seals fitted within the frame rebate. The doorset opened towards the heating conditions.

The doorset was fitted with various items of hardware including a steel SWE1010 door viewer with no intumescent material fitted. SWE1010 is a primarily stainless steel door viewer with a 22 mm diameter cylindrical tube. There was a sustained flaming failure at 39 minutes along the leading edge of the doorset. At 62 minutes there was another sustained flaming failure at the top corner of the doorset. No other failures were recorded for the test duration or were coincident with the door viewer.

The performance of Doorset B of the test referenced WF 356836 is cited to display the ability SWE1010 to contribute towards the required fire resistance of 60 minute rated timber doorsets.

The SWE1010 incorporates the largest and most onerous model of that which are proposed. The other proposed models require less of the amount of material to be removed through the thickness of the door leaf so that with regards to the effect on expected fire performance other door viewers are considered less onerous and not expected to have a detrimental effect upon the doorset for the required period and are positively appraised provided that the hole in the door face shall follow the shape of the door viewer and be as tight as possible.

### Predominately steel based doorsets

The performance of Doorset A during the test referenced WF 316159 is cited to display the ability of the SWE1010 door viewer to contribute towards the required fire resistance for 240 minute predominately steel based doorsets.

Doorset A included in test report WF 316159 was a 2090 x 990 mm single acting single leaf 240 minute uninsulated steel doorset and included a 2040 x 903 x 45 mm steel based door leaf. The leaf was hung within a steel frame on steel hinges. The doorset opened away from the heating conditions.

The doorset was fitted with various items of hardware including a steel SWE1010 door viewer. SWE1010 is a primarily stainless steel door viewer with a 22 mm diameter cylindrical tube.

The doorset achieved an integrity rating of 264 minutes and at no point showed signs of failure around the door viewer.

The performance of Doorset B of the test referenced WF 316159 is cited to display the ability SWE1010 to contribute towards the required fire resistance of 240 minute rated steel based doorsets.

The SWE1010 incorporates the largest and most onerous model of that which are proposed. The other proposed models require less of the amount of material to be removed through the thickness of the door leaf so that with regards to the effect on expected fire performance other door viewers are considered less onerous and not expected to have a detrimental effect upon the doorset for the required period and are positively appraised provided that the hole in the door face shall follow the shape of the door viewer and be as tight as possible.

### **Alternative finishes**

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

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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, and steel-based doorsets which have achieved up to 120 minutes integrity, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Carlisle Brass lever/knob handles as detailed in Annex A, without detracting from the overall integrity performance of the doorset.

Additionally 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 120 minutes integrity and insulation performance, and steel-based doorsets which have achieved up to 120 minutes integrity, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Carlisle Brass pull handles as detailed in Annex B, without detracting from the overall integrity performance of the doorset.

As well as 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 120 minutes integrity and insulation performance, and steel-based doorsets which have achieved up to 120 minutes integrity, in accordance with BS EN 1634-1, as discussed in this report, may be fitted with Carlisle Brass Accessories as detailed in Annex C, without detracting from the overall integrity performance of the doorset.

## Validity

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

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

## Summary of Primary Supporting Data

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### WF Report No. 195144

To determine the fire resistance performance of two single-acting, single-leaf timber based doorsets incorporating various building hardware, mounted within a low-density rigid supporting construction, when tested in accordance with BS EN 1634-1: 2008.

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

Both doorsets had overall dimensions of 2078 mm high by 1003 mm wide and incorporated a door leaf of overall dimensions 2032 mm high by 932 mm wide by 44 mm thick. Both door leaves comprised a graduated density chipboard core with hardwood lippings to the vertical edge. The door leaves were hung within a softwood door frame on three stainless steel Parliament hinges referenced 'H2N1446SSS' for Doorset A and three Triple Knuckle Butt hinges referenced 'H3N1102/13/SZP' for Doorset B. The hinges to Doorset A bedded onto a pad of 1 mm thick "Interdens" intumescent material. There was no intumescent material used to protect the hinges fitted to Doorset B.

**Doorset A** was fitted with an Easi-T Heavy Sprung Tubular Latch with lever handles referenced 'TLS5030SC' and 'CSL1220SSS' respectively, a Rim Cylinder Nightlatch referenced 'RCN8260SC', a Rim Cylinder Rollerball referenced 'RCB8260SC', top and bottom flush bolts referenced 'FBT1008SSS', and a Flush Pull Handle referenced 'FPH1004SSS'

The Tubular latch was provided with a 1 mm thick layer of "Interdens" material wrapped around the body of the casing. The Rim Cylinder Nightlatch, the Rim Cylinder Rollerball and the top and bottom flush bolts were each bedded onto a pad of 1 mm thick "Interdens" intumescent material. The Flush Pull Handle was bedded onto acrylic intumescent mastic.

**Doorset B** was fitted with a DIN Latch with lever handles referenced 'DLE0055LSSS' and 'LRF1190SSS' respectively, a surface mounted shoot bolt referenced 'BBT1200SSS', a door viewer referenced 'SWE1010', a door knocker referenced 'SWE1020', a door knob referenced 'SWE1040', and a cabin hook referenced 'CAB1200SSS'.

There was no intumescent material used to protect the hardware fitted to Doorset B.

Each doorset was fitted with a surface mounted overhead door closer, mounted on the exposed face.

All latches, Rim Cylinder Nightlatch, Rim Cylinder Rollerball, top and bottom flush bolts, surface mounted shoot bolt and cabin hook were rendered disengaged for the duration of the test and were installed such that they opened towards the heating conditions of the test.

Prior to the commencement of the test, the door leaves were cycled open and closed 25 times as specified in EN 14600: 2005.

<b>Integrity</b>	<b>Doorset A</b>	<b>Doorset B</b>
Sustained flaming	42 minutes*	36 minutes
Gap gauge	42 minutes*#	36 minutes#
Cotton Pad	42 minutes*	33 minutes
<b>Insulation</b>	42 minutes*	33 minutes

\*The test duration. #Doorset sealed with mastic at sponsor's request. The test was discontinued after a period of 42 minutes.

**Warringtonfire** was not involved in the sampling or selection of the tested specimen or any of the components.

Test date : 20 July 2010

Test Sponsors : Eurospec Architectural Hardware Limited

**WF Report No.  
316159**

To determine the fire resistance performance of two specimens of single-acting doorsets incorporating various items of building hardware when tested in accordance with BS EN 1634-1: 2008

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

**Doorset A** had overall dimensions of 2090 mm high by 990 mm wide and incorporated a door leaf of overall dimensions 2040 mm high by 903 mm wide by 45 mm thick. The door leaf was hung within a Zintec frame on three Eurospec Stainless Steel hinges referenced 'HIN1433/13SZP'. The door leaf comprised 1.2 mm Zintec Steel facings encasing a 'Dufaylite' Honeycomb core, reinforced with 1.6 mm Zintec Steel channels. The doorset was fitted with a latch referenced 'DLS0060LSSS' along with a lever handle referenced 'LRS9001SAA', a second latch referenced 'ESB5030CT/SSS' and lever handles referenced SW11, a door closer to exposed face was referenced 'DCC2024SM' and an inactive door closer to unexposed face, referenced 'DCC2024SM/36'. The unexposed face also incorporated; a pull handle referenced 'CDS1225SSS', a door viewer reference 'SWE1010SSS', a door knocker referenced 'SWE1020SSS' and a centre knob referenced 'SWE1040SSS'.

**Doorset B** had overall dimensions of 2090 mm high by 990 mm wide and incorporated a door leaf of overall dimensions 2000 mm high by 903 mm wide by 45 mm thick. The door leaves were hung within a Zintec steel door frame on three Eurospec Stainless Steel hinges referenced 'SCH14325/13SSS'. The door leaf comprised of a 1.2 mm Zintec steel facing, encasing a 'Dufaylite' Honeycomb core reinforced with 1.6 mm Zintec steel channels. The doorset was fitted with a latch referenced 'DLE7255EPSSS' along with a lever handle referenced 'CSL1190SSS', an active door closer to the exposed side referenced 'DCF2003SV' and an inactive closer to the unexposed fire side referenced 'DCS2026BC/SV', and a magnetic lock manufactured by AEM, referenced '10100'.

The leaves were orientated such that they opened away from the heating conditions of the test and were rendered unlatched for the test duration.

<b>Integrity</b>	<b>Doorset A</b>	<b>Doorset B</b>
Sustained flaming	264 minutes*	36 minutes
Gap gauge	61 minutes	36 minutes
Cotton Pad	264 minutes*	36 minutes
<b>Insulation</b>	5 minutes	6 minutes

\*The test duration, the test was discontinued after a period of 264 minutes.

The hardware and doorsets included in the test were sample selected, or the subject of witnessed manufacture, by representatives of Warrington Certification Limited.

Test date : 09 March 2012

Test Sponsors : Eurospec Architectural Hardware Limited

**WF Report No.  
345074**

To determine the fire resistance performance of two single-acting, single-leaf timber based doorsets incorporating various items of hardware, mounted within a low density rigid supporting construction in accordance with BS EN 1634-1: 2014.

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

**Doorset A** had overall nominal dimensions 2085 mm high by 1000 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 932 mm wide by 44 mm thick. The door leaf was of a 3-layer particle board construction, with 8 mm hardwood lippings to the vertical edges and was hung within a softwood frame on three Eurospec ball bearing butt hinges referenced, HIN1242522P/11 BZP (item 5). The doorset incorporated the following hardware/accessories –

<b>Item Number</b>	<b>Item</b>	<b>Reference</b>
1	Concealed door closer	DCC2025CF/36
2	Rim cylinder nightlatch	RCN8240M
3	3 Star cylinder	CYM71270
4	SS Security escutcheon	AEB1000SSS
6	Euro profile sashlock	ESS5030
7	Serozzetta lever on round rose	SZC010SC
8	Sleeved letter plate	SWE1050
9	Door viewer with glass lens	AA77
10	Bolt through fix pull handle	PH500C

**Doorset B** had overall nominal dimensions 2085 mm high by 1005 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 932 mm wide by 54 mm thick. The door leaf was of a 3-layer particle board construction, with 8 mm hardwood lippings to the vertical edges and was hung within a hardwood frame on three Eurospec ball bearing butt hinges referenced, HIN14322P/11 BZP (item 11). The doorset incorporated the following hardware/accessories –

Item Number	Item	Reference
1	Concealed door closer	DCC02025CF/36
2	Rim cylinder nightlatch	RCN8440
3	3 Star cylinder	CYM71270
4	SS Security escutcheon	AEB1000SSS
12	Din euro profile sashlock	DLS7260EP
13	Elliptical twist lever on square rose	IT83020CP
14	Stainless steel door viewer	SWE1000
15	Back to back pull handles	PCT11800BSS
16	Door knocker	SWE1020SSS
17	Door pull knob	SWE1062

The doorsets were installed so that they opened towards the heating conditions of the test and were un-latched for the purpose of the test.

Integrity	Doorset A	Doorset B
Sustained flaming	34 minutes	46 minutes
Gap gauge	34 minutes	60 minutes*
Cotton Pad	34 minutes	46 minutes
<b>Insulation</b>	34 minutes	46 minutes

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

The concealed door closers for this test were sample selected by a representative of Warrington Certification on 11th August 2014.

Test date : 28 October 2014

Test Sponsors : Carlisle Brass Limited

**WF Report No.  
356836**

To determine the fire resistance performance of two single-acting, single-leaf timber based doorsets incorporating various items of hardware, mounted within a low density rigid supporting construction in accordance with BS EN 1634-1: 2014.

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

**Doorset A** had overall nominal dimensions 2078 mm high by 1000 mm wide incorporating a door leaf with overall dimensions 2040 mm high by 932 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 Eurospec ball bearing butt hinges referenced, HIN1433/14SSS (item 1). The doorset incorporated the following hardware/accessories –

Item Number	Item	Reference
6	Hinge bolts	AHB1000ZP
5	Surface mounted overhead closer	DCF2003
2	Multipoint locking system	ELK13001RE
3	Steelworx narrow plate lever	SWNP/92SSS
4	Star double cylinder satin chrome	CYX71264SC 1
7	Steelworx door viewer 16 mm	SW1000SSS

**Doorset B** had overall nominal dimensions 2080 mm high by 1010 mm wide incorporating a door leaf with overall dimensions 2038 mm high by 932 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 Eurospec ball bearing butt hinges referenced, HIN1433/14SSS (item 8). The doorset incorporated the following hardware/accessories –

Item Number	Item	Reference
13	Hinge bolts	AHB1000ZP
10	Concealed closer	DCC2025CF/36
9	Multipoint locking system	ELK13001RE
11	Steelworx narrow plate lever 92 mm	SWNP40/92SSS
12	Star double cylinder satin chrome	CYM71264SC 3
14	Steelworx door viewer 22 mm	SWE1010SSS

The doorsets were installed so that they opened towards the heating conditions of the test and were un-latched for the purpose of the test.

Integrity	Doorset A	Doorset B
Sustained flaming	35 minutes	39 minutes
Gap gauge	37 minutes <sup>^</sup>	66 minutes*
Cotton Pad	35 minutes	39 minutes
<b>Insulation</b>	35 minutes	39 minutes

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

<sup>^</sup> Doorset blanked off

The concealed closer, hinges and multipoint lock for this test was sample selected by a representative of Warrington Certification on 8/9/2015.

Test date : 22 September 2016

Test Sponsors : Carlisle Brass Limited

**WF Report No.  
390179**

To determine the fire resistance performance of two single-acting, single-leaf doorsets, incorporating various items of hardware in accordance with BS EN 1634-1: 2014

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

**Doorset A** had overall nominal dimensions 2080 mm high by 997 mm wide incorporating a leaf with overall dimensions of 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. The Doorset was unlatched for the test duration.

The doorset incorporated the following hardware:

Item Number	Description		Reference
9	Adjustable 2D hinges (White Powder Coated)		HIN16300 2D euro
7	Radius flush pull handles (fitted to both exposed and unexposed faces)		FPH1001SSS
8	Circular flush pull handles (fitted to both exposed and unexposed faces)		FPH1002BSS
6	Push Pad Emergency Exit Device	Items 6 and 5 paired, with item 5 fitted to unexposed face	XIA5002 / SV AL06B
5	External Locking Push Pad		XIA5003 / SV AL01A
4	Push Bar mechanism	Items 4 and 5 paired, with item 5 fitted to exposed face	XDB5760 AL04D
5	External Locking Push Pad		XIA5003 / SV AL01A
15	Surface mount closer fitted in projecting arm configuration on the exposed side		EASI – EXIT DCS2024/25

**Doorset B** had overall nominal dimensions 2085 mm high by 1000 mm wide incorporating a leaf with overall dimensions of 2040 mm high by 926 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. The Doorset was latched for the test duration.

The doorset incorporated the following hardware:

Item Number	Description		Reference
9	Adjustable 2D hinges (BSS – bright stainless steel)		HIN16300 2D euro
14	Rectangular flush pull handles (fitted to both exposed and unexposed faces)		FPH1000SSS
13	Circular flush pull handles (fitted to both exposed and unexposed faces)		FPH1003BSS
12	Rim cylinder Nightlatch (fitted to exposed face)		RCN8360
10	External Access Device	Items 10 and 11 paired, with item 10 fitted to unexposed face	XIA5003 / SV AL06A
11	Push Pad Emergency Exit Device		XIA5003 / SV AL01A
4	Push Bar mechanism	Items 4 and 10 paired, with item 10 fitted to exposed face	XDB5760 AL04D
10	External Access Device		XIA5003 / SV AL06A
15	Surface mount closer fitted in projecting arm configuration on the exposed side		EASI – EXIT DCS2024/25

<b>Integrity</b>	<b>Doorset A</b>	<b>Doorset B</b>
Sustained flaming	36 minutes*	33 minutes*
Gap gauge	36 minutes*	36 minutes*
Cotton Pad	36 minutes*	33 minutes
<b>Insulation</b>	36 minutes*	33 minutes

\*The test was discontinued after a period of 36 minutes.

**Warringtonfire** was not involved in the sampling or selection of the tested specimen or any of the components.

Test date : 17 October 2017

Test Sponsors : Carlisle Brass Limited

## Declaration by Carlisle Brass Limited

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We the undersigned confirm that we have read and complied with the 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.

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 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 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.

(In accordance with the principles of FTSG Resolution 82)

Signature:

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Name:

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Position:

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Company:

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Date:

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## Signatories

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Responsible Officer (Issue 2)  
A. Green-Morris\* - Product Assessor



Approved (Issue 2)  
R. Anning\* – Principal Product Assessor

\* For and on behalf of Warringtonfire.

Report Issued: 25 October 2023

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	Re-issue Date: 25 October 2023
Revised By: A. Green-Morris	Approved By: R. Anning

Issue No: 2	Re-issue Date: 26 April 2024
Revised By: A. Green-Morris	Approved By: R. Anning
Reason for Revision: Amendment to G304 range, amending product references. Additional products added to G201 range. Additional product added to Serozzetta SZM & ZIN.	

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

## Annex A – Lever/knob Handles

### BS EN 1906 Grade 4

Type (LOR or LOB)	Model	Description	Main Material
LOR	SW4123	Grade 316 Safety Lever on Round Rose	Stainless Steel
LOR	SW4125	Grade 316 Mitred Lever on Round Rose	Stainless Steel
LOR	SW4123X	Grade 304 Safety Lever on Round Rose	Stainless Steel
LOR	SW4150	Grade 316 Ambulant Lever on Round Rose	Stainless Steel

### G316

Type (LOR or LOB)	Model	Description	Main Material
LOR	SW123	Grade 316 Safety Lever on Round Rose	Stainless Steel
KOR	SWKNR1058	Grade 316 Knob on Round Rose (55mm dia)	Stainless Steel
LOB	SWLP123	Grade 316 Safety Lever on Inner Plate (177.5x42x6mm)	Stainless Steel
Plate	SWOB	Latch Plate to suit SWLP123	Stainless Steel
Plate	SWOE	Euro Plate to suit SWLP123	Stainless Steel
Plate	SWOT-I	UK Bathroom Plate & Turn 45 to suit SWLP123	Stainless Steel
Plate	SWOP	Lock Plate to suit SWLP123	Stainless Steel
Plate	SWOE	DIN Euro Plate to suit SWLP123	Stainless Steel
Plate	SWOT-I/78	DIN Bathroom Plate to suit SWLP123	Stainless Steel

### G304

Type (LOR or LOB)	Model	Description	Main Material
LOR	SWL1006	Astoria Lever on Round Rose	Stainless Steel
LOR	SWL1009	Lucerna Lever on Round Rose	Stainless Steel
LOR	SWL1010	Berna Lever on Round Rose	Stainless Steel
LOR	SWL1116	Volantes Lever on Round Rose	Stainless Steel
LOR	SWL1118	carbon Lever on Round Rose	Stainless Steel
LOR	SWL1120	Soho Lever on Round Rose	Stainless Steel
LOR	SWL1121	Breeze Lever on Round Rose	Stainless Steel
LOR	SWL1122	Brema Lever on Round Rose	Stainless Steel
LOR	SWL1127	Peninsula Lever on Round Rose	Stainless Steel
LOR	SWL1131	Tirola Lever on Round Rose	Stainless Steel
LOR	SWL1132	Berlino Lever on Round Rose	Stainless Steel
LOR	SWL1133	Zurigo Lever on Round Rose	Stainless Steel
LOR	SWL1134	Carlton Lever on Round Rose	Stainless Steel
LOR	SWL1135	Luenza Lever on Round Rose	Stainless Steel
LOR	SWL1160	Plaza Lever on Round Rose	Stainless Steel
LOR	SWL1161	Lubecca Lever on Round Rose	Stainless Steel
LOR	SWL1165	Scimitar Lever on Round Rose	Stainless Steel
LOR	SWL1168	Parigi Lever on Round Rose	Stainless Steel

LOR	SWL1169	Crown Lever on Round Rose	Stainless Steel
LOR	SWL1190	Nera Lever on Round Rose	Stainless Steel
LOR	SWL1191	Spira Lever on Round Rose	Stainless Steel
LOR	SWL1192	Treviri Lever on Round Rose	Stainless Steel
LOR	SWL1194	Philadelphia Lever on Round Rose	Stainless Steel
LOR	SWL1196	Dresda Lever on Round Rose	Stainless Steel
LOR	SSL1401	Alvar Lever on Square Rose	Stainless Steel
LOR	SSL1402	Tange Lever on Square Rose	Stainless Steel
LOR	SSL1403	Carla Lever on Square Rose	Stainless Steel
LOR	SSL1404	Plaza Lever on Square Rose	Stainless Steel
LOR	SSL1405	Renzo Lever on Square Rose	Stainless Steel
LOR	SSL1406	Fagus Lever on Square Rose	Stainless Steel
KOR	SSK1062	Square Knob on Square Rose (62mm x 62mm)	Stainless Steel
LOR	CSL1190/6	Nera Lever on Round Rose	Stainless Steel
LOR	CSL1192/6	Treviri Lever on Round Rose	Stainless Steel
LOR	CSL1194/6	Philadelphia Lever on Round Rose	Stainless Steel
LOR	CSL1121/6	Breeze Lever on Round Rose	Stainless Steel
LOR	CSL1127/6	Peninsula Lever on Round Rose	Stainless Steel
LOR	CSL1134	Carlton Lever on Round Rose	Stainless Steel
LOR	CSL1160	Plaza Lever on Round Rose	Stainless Steel
LOR	CSL1190	Nera Lever on Round Rose (19mm)	Stainless Steel
LOR	CSL1220	Nera Lever on Round Rose (22mm)	Stainless Steel
LOR	CSL1191	Spira Lever on Round Rose	Stainless Steel
LOR	CSL1192	Treviri Lever on Round Rose	Stainless Steel
LOR	CSL1193	Curved Lever on Round Rose	Stainless Steel
LOR	CSL1194	Philadelphia Lever on Round Rose	Stainless Steel
KOR	CSK1058	Knob on Round Rose (55mm dia)	Stainless Steel
<b>Issue 2 amended codes</b>			
LOR	35-S4JO-RRHO	SS304 Lever on Round Rose	Stainless Steel
LOR	35-S4LA-RRHO	SS304 Lever on Round Rose	Stainless Steel
LOR	35-S4CL-RRHO	SS304 Lever on Round Rose	Stainless Steel
LOR	35-S4DI-RRHO	SS304 Lever on Round Rose	Stainless Steel

**G201**

Type (LOR or LOB)	Model	Description	Main Material
LOB	CSLP1190	Safety Lever on Inner Plate (169x44.5x9mm)	Stainless Steel
LOB	CSLP1191	Safety Lever on Inner Plate (169x44.5x9mm)	Stainless Steel
Plate	CPRB1170	Latch Plate to suit CSLP Inner Plate	Stainless Steel
Plate	CPRP1170	Lock Plate to suit CSLP Inner Plate	Stainless Steel
Plate	CPRE1170	Euro Plate to suit CSLP Inner Plate	Stainless Steel
Plate	CPRE1170/72	DIN Euro Plate to suit CSLP Inner Plate	Stainless Steel
Plate	CPRT1170	Bathroom Plate with Turn to suit CSLP Inner Plate	Stainless Steel
Plate	CPRT1170/78	DIN Bathroom Plate with Turn to suit CSLP Inner Plate	Stainless Steel
Plate	CPRTL1170	Bathroom Plate with Long Turn to suit CSLP Inner Plate	Stainless Steel
Plate	CPRU1170	Oval Plate to suit CSLP Inner Plate	Stainless Steel

LOB	CSLP1162B	Mitred Lever on Latch Backplate (Face Fix)	Stainless Steel
LOB	CSLP1162P	Mitred Lever on Lock Backplate (Face Fix)	Stainless Steel
LOB	CSLP1162E	Mitred Lever on Euro Backplate (Face Fix)	Stainless Steel
LOB	CSLP1162T	Mitred Lever on Bathroom Backplate (Face Fix)	Stainless Steel
LOB	CSLP1164B	T-Bar Lever on Latch Backplate (Face Fix)	Stainless Steel
LOB	CSLP1164P	T-Bar Lever on Lock Backplate (Face Fix)	Stainless Steel
LOB	CSLP1164E	T-Bar Lever on Euro Backplate (Face Fix)	Stainless Steel
LOB	CSLP1164T	T-Bar Lever on Bathroom Backplate (Face Fix)	Stainless Steel
LOB	CSLP1167B	Arched Lever on Latch Backplate (Face Fix)	Stainless Steel
LOB	CSLP1167P	Arched Lever on Lock Backplate (Face Fix)	Stainless Steel
LOB	CSLP1167E	Arched Lever on Euro Backplate (Face Fix)	Stainless Steel
LOB	CSLP1167T	Arched Lever on Bathroom Backplate (Face Fix)	Stainless Steel
<b>Issue 2 added products</b>			
LOR	CSL1190/201	Nera Lever on Round Rose	Stainless Steel
LOR	CSL1191/201	Spira Lever on Round Rose	Stainless Steel
LOR	CSL1192/201	Treviri Lever on Round Rose	Stainless Steel
LOR	CSL1193/201	Curved Lever on Round Rose	Stainless Steel
LOR	CSL1194/201	Philadelphia on Round Rose	Stainless Steel

### Aluminium

Type (LOR or LOB)	Model	Description	Main Material
LOR	LRS4000	Safety Lever on Round Rose (22mm)	Aluminium
LOR	LRS4001	Safety Lever on Round Rose (19mm)	Aluminium
LOR	LRS9000	Safety Lever on Round Rose (22mm)	Aluminium
LOR	LRS9001	Safety Lever on Round Rose (19mm)	Aluminium
LOB	SAA21	Contract Lever on Lock Backplate (Face Fix)	Aluminium
LOB	SAA21Y	Contract Lever on Euro Backplate (Face Fix)	Aluminium
LOB	SAA21WC	Contract Lever on Bathroom Backplate (Face Fix)	Aluminium
LOB	SAA22	Contract Lever on Latch (Short) Backplate (Face Fix)	Aluminium
LOB	SAA60	Mial Lever on Lock Backplate (Face Fix)	Aluminium
LOB	SAA60WC	Mial Lever on Bathroom Backplate (Face Fix)	Aluminium
LOB	SAA61	Mial Lever on Latch (Short) Backplate (Face Fix)	Aluminium
LOB	LIP9001	Safety Lever on Inner Plate (152x38x8mm)	Aluminium
Plate	PLB9001	Latch Plate to suit LIP9001	Aluminium
Plate	PLP9001	Lock Plate to suit LIP9001	Aluminium
Plate	PLE9001	Euro Plate to suit LIP9002	Aluminium
Plate	PLT9001	bathroom Plate with Turn to suit LIP9003	Aluminium
Plate	PLU9001	Oval Plate to suit LIP9004	Aluminium

### Manital

Type (LOR or LOB)	Model	Description	Main Material
LOR	AQ1	Astro Lever on Round Rose	Brass
LOR	AQ2	Studio H Lever on Round Rose	Brass
LOR	AQ3	Apollo Lever on Round Rose	Brass
LOR	AQ4	Calla Lever on Round Rose	Brass

LOR	SX5	Syntax Lever on round rose	Brass
LOR	GI5	Giava Lever on Round Rose	Brass
LOB	EL31	Lilla Lever on Backplate (Lock)	Brass
LOB	EL31Y	Lilla Lever on Backplate (Euro)	Brass
LOB	EL32	Lilla Lever on backplate (Latch)	Brass
LOB	EL33	Lilla Lever on backplate (Bathroom)	Brass
LOB	EL21	Astro Lever on Backplate (Lock)	Brass
LOB	EL21Y	Astro Lever on Backplate (Euro)	Brass
LOB	EL22	Astro Lever on backplate (Latch)	Brass
LOB	EL23	Astro Lever on backplate (Bathroom)	Brass
LOB	EL11	Ibra Lever on backplate (Lock)	Brass
LOB	EL12	Ibra Lever on backplate (Latch)	Brass
LOB	EL11Y	Ibra Lever on backplate (Euro)	Brass
LOB	EL13	Ibra Lever on backplate (Bathroom)	Brass

### European

Type (LOR or LOB)	Model	Description	Main Material
LOR	FH5	Flash Lever on Square Rose	Zinc
LOR	TC5	Techna Lever on Square Rose	Zinc
LOR	IN5	Intona Lever on Round Rose	Zinc
LOR	MS5	Master Lever on Round Rose	Zinc
LOR	CEB040Q	Kua Lever on Square Rose	Zinc
LOR	CEB050Q	Era Lever on Square Rose	Zinc
LOR	CEB060Q	Zara Lever on Square Rose	Zinc
LOR	CEB010Q	Mono Lever on Square Rose	Zinc
LOR	CEB020Q	Sea Lever on Square Rose	Zinc
LOR	CEB110	Sui Lever on Round Rose	Zinc
LOR	CEB120	Lavi Lever on Round Rose	Zinc
LOR	CEB130	Toro Lever on Round Rose	Zinc
LOR	EUL010	Sasso Lever on Round Rose	Zinc
LOR	EUL020	Velino Lever on Round Rose	Zinc
LOR	EUL030	Trentino Lever on Round Rose	Zinc
LOR	EUL040	Amiata Lever on Round Rose	Zinc
LOR	EUL050	Varese Lever on Round Rose	Brass
LOR	EUL060	Tarazzo Lever on Round Rose	Zinc
LOR	EUL070	Masano Lever on Round Rose	Zinc

### Serozzetta SZM & ZIN

Type (LOR or LOB)	Model	Description	Main Material
LOR	SZM170	L Lever on round rose	zinc
LOR	SZM270	L Lever on round rose	zinc
LOR	SZM014	Valiant Lever on round rose	zinc
LOR	SZM025	Breeze Lever on round rose	zinc
LOR	SZM026	Vogue Lever on round rose	zinc
LOR	SZM100	Luna Lever on round rose	zinc

LOR	SZM110	Azul Lever on round rose	zinc
LOR	SZM130	Style Lever on round rose	zinc
LOR	SZM160	Trend Lever on round rose	zinc
LOR	SZM210	Edge Lever on round rose	zinc
LOR	SZM210SQ	Edge Lever on Square Rose	zinc
LOR	SZM220	Concept Lever on round rose	zinc
LOR	SZM250	Image Lever on round rose	zinc
LOR	SZM310	Scopo Lever on Round Rose	zinc
LOR	SZM320	Cube Lever on Square Rose	zinc
LOR	SZM370	Equi Lever on Square Rose	zinc
LOR	SZM380	Design Lever on round rose	zinc
LOR	SZ500	Safety Lever on round rose	zinc
LOR	ZIN3003	Noxia Lever on round rose	zinc
LOR	ZIN3111	Nelson Lever on round rose	zinc
LOR	ZIN3112	Olivier Lever on round rose	zinc
LOR	ZIN3113	Tempest Lever on round rose	zinc
LOR	ZIN3115	Carolina Lever on round rose	zinc
LOR	ZIN3116	Atalaya Lever on round rose	zinc
LOR	ZIN3121	Philadelphia Lever on round rose	zinc
LOR	ZIN3129	Cumulus Lever on round rose	zinc
LOR	ZIN3130	Verdun Lever on round rose	zinc
LOR	ZIN3131	Shark Lever on round rose	zinc
LOR	ZIN3139	Irwin Lever on round rose	zinc
LOR	ZIN3140	Marissa Lever on round rose	zinc
LOR	ZIN3144	Manon Lever on round rose	zinc
LOB	SZM044	Scope Lever on Backplate (Lock)	zinc
LOB	SZM044Y	Scope Lever on Backplate (Euro)	zinc
LOB	SZM045	Scope Lever on Backplate (Latch)	zinc
LOB	SZM046	Scope Lever on Backplate (Bathroom)	zinc
LOB	SZM241	Stratus Lever on Backplate (Lock)	zinc
LOB	SZM241Y	Stratus Lever on Backplate (Euro)	zinc
LOB	SZM242	Stratus Lever on Backplate (Latch)	zinc
LOB	SZM243	Stratus Lever on Backplate (Bathroom)	zinc
LOB	SZM371	Equi Lever on Backplate (Lock)	zinc
LOB	SZM371Y	Equi Lever on Backplate (Euro)	zinc
LOB	SZM372	Equi Lever on Backplate (Latch)	zinc
LOB	SZM373	Equi Lever on Backplate (Bathroom)	zinc
<b>Issue 2 added products</b>			
LOR	SZM610	Oasis Lever on round rose	zinc

### Serozzetta SZC

Type (LOR or LOB)	Model	Description	Main Material
LOR	SZC010	Uno Lever on Round Rose	Aluminium
LOR	SZC020	Dos Lever on Round Rose	Aluminium
LOR	SZC030	Tres Lever on Round Rose	Aluminium
LOR	SZC040	Cuatro Lever on Round Rose	Aluminium

LOR	SZC050	Cinco Lever on Round Rose	Aluminium
LOR	SZC340	Cuarenta Lever on Round Rose	Zinc
LOB	SZC011	Uno Lever on Backplate (Lock)	Aluminium
LOB	SZC011Y	Uno Lever on Backplate (Euro)	Aluminium
LOB	SZC012	Uno Lever on Backplate (Latch)	Aluminium
LOB	SZC013	Uno Lever on Backplate (Bathroom)	Aluminium
LOB	SZC021	Dos Lever on Backplate (Lock)	Aluminium
LOB	SZC021Y	Dos Lever on Backplate (Euro)	Aluminium
LOB	SZC022	Dos Lever on Backplate (Latch)	Aluminium
LOB	SZC023	Dos Lever on Backplate (Bathroom)	Aluminium
LOB	SZC031	Tres Lever on Backplate (Lock)	Aluminium
LOB	SZC031Y	Tres Lever on Backplate (Euro)	Aluminium
LOB	SZC032	Tres Lever on Backplate (Latch)	Aluminium
LOB	SZC033	Tres Lever on Backplate (Bathroom)	Aluminium
LOB	SZC041	Cuatro Lever on Backplate (Lock)	Aluminium
LOB	SZC041Y	Cuatro Lever on Backplate (Euro)	Aluminium
LOB	SZC042	Cuatro Lever on Backplate (Latch)	Aluminium
LOB	SZC043	Cuatro Lever on Backplate (Bathroom)	Aluminium
LOB	SZC051	Cinco Lever on Backplate (Lock)	Aluminium
LOB	SZC051Y	Cinco Lever on Backplate (Euro)	Aluminium
LOB	SZC052	Cinco Lever on Backplate (Latch)	Aluminium
LOB	SZC053	Cinco Lever on Backplate (Bathroom)	Aluminium

### Serozzetta SZR

Type (LOR or LOB)	Model	Description	Main Material
LOR	SZR010	Deci Lever on Round Rose	Aluminium
LOR	SZR020	Venti Lever on Round Rose	Aluminium
LOR	SZR030	Trenta Lever on Round Rose	Aluminium
LOR	SZR040	QuarantaLever on Round Rose	Aluminium
LOR	SZR050	Cinquanta Lever on Round Rose	Aluminium
LOR	SZR060	Sessanta Lever on Round Rose	Aluminium
LOB	SZR011	Deci Lever on Backplate (Lock)	Aluminium
LOB	SZR011Y	Deci Lever on Backplate (Euro)	Aluminium
LOB	SZR012	Deci Lever on Backplate (Latch)	Aluminium
LOB	SZR013	Deci Lever on Backplate (Bathroom)	Aluminium
LOB	SZR021	Venti Lever on Backplate (Lock)	Aluminium
LOB	SZR021Y	Venti Lever on Backplate (Euro)	Aluminium
LOB	SZR022	Venti Lever on Backplate (Latch)	Aluminium
LOB	SZR023	Venti Lever on Backplate (Bathroom)	Aluminium
LOB	SZR031	Trenta Lever on Backplate (Lock)	Aluminium
LOB	SZR031Y	Trenta Lever on Backplate (Euro)	Aluminium
LOB	SZR032	Trenta Lever on Backplate (Latch)	Aluminium
LOB	SZR033	Trenta Lever on Backplate (Bathroom)	Aluminium
LOB	SZR041	Quaranta Lever on Backplate (Lock)	Aluminium
LOB	SZR041Y	Quaranta Lever on Backplate (Euro)	Aluminium
LOB	SZR042	Quaranta Lever on Backplate (Latch)	Aluminium

LOB	SZR043	Quaranta Lever on Backplate (Bathroom)	Aluminium
LOB	SZR051	Cinquanta Lever on Backplate (Lock)	Aluminium
LOB	SZR051Y	Cinquanta Lever on Backplate (Euro)	Aluminium
LOB	SZR052	Cinquanta Lever on Backplate (Latch)	Aluminium
LOB	SZR053	Cinquanta Lever on Backplate (Bathroom)	Aluminium
LOB	SZR061	Sessanta Lever on Backplate (Lock)	Aluminium
LOB	SZR061Y	Sessanta Lever on Backplate (Euro)	Aluminium
LOB	SZR062	Sessanta Lever on Backplate (Latch)	Aluminium
LOB	SZR063	Sessanta Lever on Backplate (Bathroom)	Aluminium

### HouseBuilder Exclusives

Type (LOR or LOB)	Model	Description	Main Material
LOR	SZA270	SEROZZETTA LEVER ON PUSH ON ROSE	zinc
LOR	SZA280	SEROZZETTA LEVER ON PUSH ON ROSE	zinc
LOR	SZA290	SEROZZETTA LEVER ON PUSH ON ROSE	zinc
LOR	SZA4025	Twist Lever On Concealed Fix Round Rose (SR100)	zinc
LOR	SZA410	Spectrum Lever On Concealed Fix Round Rose	zinc
LOR	SZA420	Tortosa Lever On Concealed Fix Round Rose	zinc
LOR	SZA430	Malaga Lever On Concealed Fix Round Rose	zinc
LOR	SZA440	Vilanova Lever On Concealed Fix Round Rose (SR500)	zinc
LOR	SZA450	Calafel On Concealed Fix Round Rose	zinc
LOR	SZA470	SERADEL LEVER ON ROSE - DUAL FINISH	zinc
LOR	SZA480	Picedo Lever On Concealed Fix Round Rose	zinc
LOR	SZA490	Quiete Lever On Concealed Fix Round Rose	zinc
LOR	SZA510	Dunmore Lever On Concealed Fix Round Rose	zinc
LOR	SZA541	Cervantes Lever On Concealed Fix Round Rose	zinc
LOR	SZA6013SQ	Quattro Lever On Concealed Fix Square Rose	zinc
LOR	SZA6021	Casa Lever On Concealed Fix Round Rose	zinc
LOR	SZA6044	Taurus Lever On Concealed Fix Round Rose	zinc
LOR	SZA6052	Skye Lever On Concealed Fix Round Rose	zinc
LOR	SZA6099	Avanzi Lever On Concealed Fix Round Rose	zinc
LOR	SZA6950SQ	Osteria Lever On Concealed Fix Square Rose	zinc
LOR	SZA7003	Noxia Lever On Concealed Fix Round Rose (SR800)	zinc
LOR	SZA7111	Nelson Lever On Concealed Fix Round Rose	zinc
LOR	SZA7112	Olivier Lever On Concealed Fix Round Rose	zinc
LOR	SZA7121	Philadelphia Lever on Round Rose Concealed Fix	zinc
LOB	SZA271Y	Serozzetta Lever on Backplate (Euro)	zinc
LOB	SZA272	Serozzetta Lever On Backplate (Latch)	zinc
LOB	SZA273	Serozzetta Lever On Backplate (Bathroom)	zinc
LOB	SZA282	Serozzetta Lever On Backplate (Latch)	zinc
LOB	SZA283	Serozzetta Lever On Backplate (Bathroom)	zinc
LOB	SZA301	Serozzetta Lever On Backplate (Lock)	zinc
LOB	SZA301Y	Serozzetta Lever on Backplate (Euro)	zinc
LOB	SZA302	Serozzetta Lever On Backplate (Latch)	zinc
LOB	SZA303	Serozzetta Lever On Backplate (Bathroom)	zinc
LOB	SZA4131	Luke Lever On Backplate (Lock)	zinc

LOB	SZA4132	Luke Lever On Backplate (Latch)	zinc
LOB	SZA4133	Luke Lever On Backplate (Bathroom)	zinc
LOB	SZA4167	Hann Lever On Backplate (Latch)	zinc
LOB	SZA4168WC	Hann Lever On Backplate (Bathroom)	zinc

### Traditional

Type (LOR or LOB)	Model	Description	Main Material
LOR	DL56	Victorian Scroll Lever on Round Rose (Face Fix)	Brass
LOR	DL66	Wing Lever on Round Rose (Face Fix)	Brass
LOR	M32	Victorian Lever on Round Rose (Face Fix)	Brass
LOR	PLW	Porcelain Lever on Round Rose (Face Fix)	Brass
LOR	PLWCP	Porcelain Lever on Round Rose (Face Fix)	Brass
LOR	FG3	Georgian Lever on Round Rose (Face Fix)	Brass
LOB	DL54	Victorian Schroll Lever on Backplate (Lock)	Brass
LOB	DL54WC	Victorian Schroll Lever on Backplate (Bathroom)	Brass
LOB	DL54Y	Victorian Schroll Lever on Backplate (Euro)	Brass
LOB	DL54S	Victorian Schroll Lever on Backplate (Sweedor Latch)	Brass
LOB	DL55	Victorian Schroll Lever on Backplate (Latch Short Plate)	Brass
LOB	DL55WC	Victorian Schroll Lever on Backplate (Privacy Short Plate)	Brass
LOB	DL64	Wing Lever on Backplate (Lock)	Brass
LOB	DL64WC	Wing Lever on Backplate (Bathroom)	Brass
LOB	DL65	Wing Lever on Backplate (Latch)	Brass
LOB	DL30	Victorian Ascot Lever on Backplate (Lock)	Brass
LOB	DL30WC	Victorian Ascot Lever on Backplate (Bathroom)	Brass
LOB	DL31	Victorian Ascot Lever on Backplate (Latch Short Plate)	Brass
LOB	M30	Victorian Lever on Backplate (Lock)	Brass
LOB	M30U	Victorian Lever on Backplate (Oval)	Brass
LOB	M30Y	Victorian Lever on Backplate (Euro)	Brass
LOB	M30WC	Victorian Lever on Backplate (Bathroom)	Brass
LOB	M30S	Victorian Lever on Backplate (Sweedor Latch)	Brass
LOB	M31	Victorian Lever on Backplate (Latch Short Plate)	Brass
LOB	M31WC	Victorian Lever on Backplate (Privacy Short Plate)	Brass
LOB	DL167	Oakley Lever on Backplate (Latch)	Brass
LOB	DL168	Oakley Lever on Backplate (Lock)	Brass
LOB	DL168WC	Oakley Lever on Backplate (Bathroom)	Brass
LOB	DL168Y	Oakley Lever on Backplate (Euro)	Brass
LOB	M67	Victorian Shaped Scroll Lever on Backplate (Latch)	Brass
LOB	M68	Victorian Shaped Scroll Lever on Backplate (Lock)	Brass
LOB	M68WC	Victorian Shaped Scroll Lever on Backplate (Bathroom)	Brass
LOB	M68Y	Victorian Shaped Scroll Lever on Backplate (Euro)	Brass
LOB	DL16	Ashtead Lever on Backplate (Latch Short Plate)	Brass
LOB	DL17	Ashtead Lever on Backplate (Lock)	Brass
LOB	DL17Y	Ashtead Lever on Backplate (Euro)	Brass
LOB	DL18	Ashtead Lever on Backplate (Latch)	Brass
LOB	DL18WC	Ashtead Lever on Backplate (Bathroom)	Brass
LOB	DL270	Chesham Lever on Backplate (Latch)	Brass

LOB	DL271	Chesham Lever on Backplate (Lock)	Brass
LOB	DL271Y	Chesham Lever on Backplate (Euro)	Brass
LOB	DL272	Chesham Lever on Backplate (Bathroom)	Brass
LOB	FG26L	Georgian Shaped Lever on Backplate (Latch)	Brass
LOB	FG27	Georgian Shaped Lever on Backplate (Lock)	Brass
LOB	FG27WC	Georgian Shaped Lever on Backplate (Bathroom)	Brass
LOB	FG1	Georgian Lever on Backplate (Lock)	Brass
LOB	FG1S	Georgian Lever on Backplate (Sweedor Latch)	Brass
LOB	FG1WC	Georgian Lever on Backplate (Bathroom)	Brass
LOB	FG1Y	Georgian Lever on Backplate (Euro)	Brass
LOB	FG2	Georgian Lever on Backplate (Latch Short Plate)	Brass
LOB	FG2WC	Georgian Lever on Backplate (Privacy Short Plate)	Brass
LOB	DL180	Andros Lever on Backplate (Lock)	Brass
LOB	DL180Y	Andros Lever on Backplate (Euro)	Brass
LOB	DL181	Andros Lever on Backplate (Latch)	Brass
LOB	DL182	Andros Lever on Backplate (Bathroom)	Brass
LOB	DL380	Andros Lever on Backplate (Lock Long Plate)	Brass
LOB	DL380Y	Andros Lever on Backplate (Euro Long Plate)	Brass
LOB	DL381	Andros Lever on Backplate (Latch Long Plate)	Brass
LOB	DL382	Andros Lever on Backplate (Bathroom Long Plate)	Brass
LOB	DL190	Madrid Lever on Backplate (Lock)	Brass
LOB	DL191	Madrid Lever on Backplate (Latch)	Brass
LOB	DL192	Madrid Lever on Backplate (Bathroom)	Brass
LOB	DL290	Madrid Lever on Backplate (Lock Long Plate)	Brass
LOB	DL291	Madrid Lever on Backplate (Latch Long Plate)	Brass
LOB	DL292	Madrid Lever on Backplate (Bathroom Long Plate)	Brass
LOB	DL410	Eden Lever on Backplate (Lock)	Brass
LOB	DL411	Eden Lever on Backplate (Latch)	Brass
LOB	DL412	Eden Lever on Backplate (Bathroom)	Brass
LOB	DL340	Wentworth Lever on Backplate (Lock)	Brass
LOB	DL341	Wentworth Lever on Backplate (Latch)	Brass
LOB	DL342	Wentworth Lever on Backplate (Bathroom)	Brass
LOB	DL450	Lytham Lever on Backplate (Lock)	Brass
LOB	DL452	Lytham Lever on Backplate (Bathroom)	Brass

### Art Deco

Type (LOR or LOB)	Model	Description	Main Material
LOB	ADR011	Art Deco Lever on Backplate (Lock)	Zinc
LOB	ADR011Y	Art Deco Lever on Backplate (Euro)	Zinc
LOB	ADR012	Art Deco Lever on Backplate (Latch)	Zinc
LOB	ADR013	Art Deco Lever on Backplate (Bathroom)	Zinc
LOB	ADR021	Art Deco Knob on Backplate (Lock)	Zinc
LOB	ADR021Y	Art Deco Knob on Backplate (Euro)	Zinc
LOB	ADR022	Art Deco Knob on Backplate (Latch)	Zinc
LOB	ADR023	Art Deco Knob on Backplate (Bathroom)	Zinc

### Mortice Knobs

Type (LOR or LOB)	Model	Description	Main Material
KOR	AC020	Facetted Crystal Mortice Knob on Round Rose Concealed Fix	Brass
KOR	DK34	Porcelain Mortice Knob on Round Rose Face Fix	Brass
KOR	DK32WOSC	Wooden Mortice Knob on Round Rose Face Fix	Brass
KOR	DK34ICFB	Porcelain Mortice Knob on Round Rose Face Fix	Brass
KOR	DK35C	Plain Mortice Knob on Round Rose Concealed Fix	Brass
KOR	DK34	Porcelain Mortice Knob on Round Rose Face Fix	Brass
KOR	DK39C	Ringed Mortice Knob on Round Rose Concealed Fix	Brass
KOR	DK36C	Flower Mortice Knob on Round Rose Concealed Fix	Brass
KOR	DK37C	Reeded Mortice Knob on Round Rose Concealed Fix	Brass
KOR	M1001	Queen Anne Mortice Knob on Round Rose Face Fix	Brass
KOR	M35	Victorian Mushroom Mortice Knob on Round Rose Face Fix	Brass
KOR	M35C	Mushroom Mortice Knob on Round Rose Concealed Fix	Brass
KOR	M34	Oval Mortice Knob on Round Rose Face Fix	Brass
KOR	M48	Ball Mortice Knob on Round Rose Face Fix	Brass
KOR	M35US	Mushroom Mortice Knob on Round Rose Face Fix	Brass
KOR	MK001	Oval Mortice Knob on Round Rose Face Fix	Zinc
KOR	FG4	Georgian Mortice Knob on Round Rose Face Fix	Brass
KOR	AC050	Large Mortice Knob on Round Rose Concealed Fix	Brass
KOR	M35RS	Small Mushroom Rim Knob on Round Rose Face Fix	Brass
KOR	M1001R	Queen Anne Rim Knob on Round Rose face Fix	Brass

### External

Type (LOR or LOB)	Model	Description	Main Material
LOB	SZS01NP92	Rosa Lever on Narrow Backplate (Fix c/c 123.5mm)	Brass
LOB	M86NP92	Straight Lever on Narrow Backplate (Fix c/c 124mm)	Brass
LOB	M86NP	Straight Lever on Narrow Backplate (Fix c/c 180mm)	Brass
LOB	SZS03NP92	Verde Lever on Narrow Backplate (Fix c/c 124mm)	Brass
LOB	AQ1NP	Astro Lever on Narrow Backplate (Fix c/c 180mm)	Brass
LOB	AQ1NP92	Astro Lever on Narrow Backplate (Fix c/c 123mm)	Brass
LOB	M140NP	Lever on Narrow Backplate (Fix c/c 180mm)	Brass
LOB	M140NP92	Lever on Narrow Backplate (Fix c/c 122mm)	Brass

## Annex B – Pull Handles

### Direct Pull Handles

Range	Model	Description	Material
Steelworx G316	PAD1150	STEELWORX 19mm Dia. D PULL HANDLE G316 (150mm c/c)	Steel
	PAD1225	STEELWORX 19mm Dia. D PULL HANDLE G316 (225mm c/c)	Steel
	PAD1300	STEELWORX 19mm Dia. D PULL HANDLE G316 (300mm c/c)	Steel
	PAD1450	STEELWORX 19mm Dia. D PULL HANDLE G316 (450mm c/c)	Steel
	PFD1225	STEELWORX 22mm Dia. D PULL HANDLE G316 (225mm c/c)	Steel
	PFD1300	STEELWORX 22mm Dia. D PULL HANDLE G316 (300mm c/c)	Steel
	PBD1300	STEELWORX 25mm Dia. D PULL HANDLE G316 (300mm c/c)	Steel
	PCD11800	STEELWORX 30mm Dia. D PULL HANDLE G316 (1800mm c/c)	Steel
	PCD1450	STEELWORX 30mm Dia. D PULL HANDLE G316 (450mm c/c)	Steel
	PCD1600	STEELWORX 30mm Dia. D PULL HANDLE G316 (600mm c/c)	Steel
Steelworx G201	CSD1150	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (150mm c/c)	Steel
	CSD1225	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (225mm c/c)	Steel
	CSD1300	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (300mm c/c)	Steel
	CSD1425	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (425mm c/c)	Steel
	CSD1450	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (450mm c/c)	Steel
	CSD1600	STEELWORX 19mm Dia. D PULL HANDLE - BOLT THROUGH (600mm c/c)	Steel
Steelworx G304	CFD1150	150 x 22mm PULL HANDLE - BOLT THROUGH	Steel
	CFD1225	225 x 22mm PULL HANDLE - BOLT THROUGH	Steel
	CFD1300	300 x 22mm PULL HANDLE - BOLT THROUGH	Steel
	CFD1450	450 x 22mm PULL HANDLE - BOLT THROUGH	Steel
	CFD1600	600 x 22mm PULL HANDLE - BOLT THROUGH	Steel

### Cranked Pull Handles

Range	Model	Description	Material
Steelworx G316	PAC1225	STEELWORX 19mm Dia. CRANKED PULL HANDLE G316 (225mm c/c)	Steel
	PAC1300	STEELWORX 19mm Dia. CRANKED PULL HANDLE G316 (300mm c/c)	Steel
	PAC1600	STEELWORX 19mm Dia. CRANKED PULL HANDLE G316 (600mm c/c)	Steel
	PBC1300	STEELWORX 25mm Dia. CRANKED PULL HANDLE G316 (300mm c/c)	Steel
	PCC1450	STEELWORX 30mm Dia. CRANKED PULL HANDLE G316 (450mm c/c)	Steel
	PCC1600	STEELWORX 30mm Dia. CRANKED PULL HANDLE G316 (6000mm c/c)	Steel

**'T' Pull Handles**

Range	Model	Description	Material
Steelworx G316	PAT1225	STEELWORX 19mm Dia. STRAIGHT T BAR PULL HANDLE G316 (225mm c/c)	Steel
	PAT1300	STEELWORX 19mm Dia. STRAIGHT T BAR PULL HANDLE G316 (300mm c/c)	Steel
	PFT1225	STEELWORX 22mm Dia. STRAIGHT T BAR PULL HANDLE G316 (225mm c/c)	Steel
	PFT1300	STEELWORX 22mm Dia. STRAIGHT T BAR PULL HANDLE G316 (300mm c/c)	Steel
	PBT1300	STEELWORX 25mm Dia. STRAIGHT T BAR PULL HANDLE G316 (300mm c/c)	Steel
	PCT1450	STEELWORX 30mm Dia. STRAIGHT T BAR PULL HANDLE G316 (450mm c/c) 625mm Overall	Steel
	PCT1600	STEELWORX 30mm Dia. STRAIGHT T BAR PULL HANDLE G316 (600mm c/c) 775mm Overall	Steel
	PCT1900	STEELWORX 30mm Dia. STRAIGHT T BAR PULL HANDLE G316 (900mm c/c) 1070mm Overall	Steel
	PCT11200	STEELWORX 30mm Dia. STRAIGHT T BAR PULL HANDLE G316 (1000mm c/c) 1200mm Overall	Steel
	PCT11800	STEELWORX 30mm Dia. STRAIGHT T BAR PULL HANDLE G316 (1630mm c/c) 1800mm Overall	Steel
G304	SWP1160/300	STEELWORX PLAZA PULL HANDLE G304 (300mm c/c)	Steel
	SWP1160/400	STEELWORX PLAZA PULL HANDLE G304 (400mm c/c)	Steel
	SWP1160/600	STEELWORX PLAZA PULL HANDLE G304 (600mm c/c)	Steel

**Mitred Pull Handles**

Range	Model	Description	Material
Steelworx G316	PAM1300	STEELWORX 19mm Dia. MITRED PULL HANDLE G316 (300mm c/c)	Steel
	PCM1450	STEELWORX 30mm Dia. MITRED PULL HANDLE G316 (450mm c/c)	Steel
	SWP18/300	STEELWORX CARBON FIBRE PULL HANDLE G316 (300mm c/c)	Steel
	SWP18/600	STEELWORX CARBON FIBRE PULL HANDLE G316 (600mm c/c)	Steel
G304	SWP1134/300	STEELWORX CARLTON PULL HANDLE G304 (300mm c/c)	Steel
	SWP1134/450	STEELWORX CARLTON PULL HANDLE G304 (450mm c/c)	Steel
	SWP1134/600	STEELWORX CARLTON PULL HANDLE G304 (600mm c/c)	Steel
	SWP1169/300	Knurled Mitre Pull Handle (300mm c/c)	Steel
	SWP1169/450	Knurled Mitre Pull Handle (450mm c/c)	Steel
	SSM1415	STEELWORX 19mm SQUARE MITRED PULL HANDLE (150mm c/c)	Steel
	SSM1422	STEELWORX 19mm SQUARE MITRED PULL HANDLE (225mm c/c)	Steel
	SSM1430	STEELWORX 19mm SQUARE MITRED PULL HANDLE (300mm c/c)	Steel
	SSM1445	STEELWORX 19mm SQUARE MITRED PULL HANDLE (450mm c/c)	Steel
	SSM1460	STEELWORX 19mm SQUARE MITRED PULL HANDLE (600mm c/c)	Steel

**Semi-Circular Pull Handle**

Range	Model	Description	Material
Steelworx G316	PCG1350-B-B	STEELWORX 30mm Dia. SEMI CIRCULAR T PULL HANDLE G316 (350mm c/c)	Steel

### Curved 'T' Pull Handle

Range	Model	Description	Material
Steelworx G316	PCTS1350	STEELWORX 30mm Dia. CURVED T BAR PULL HANDLE G316 (350mm c/c) 420mm Overall	Steel

### Face Fix Roses

Range	Model	Description	Material
Round Rose	CSR1005	Rose pack to suit CSD pull handles	Steel
Square	SSR1405	Square rose kit to suit SSM pull handles	Steel
Square	SWR1137	Square rose and grub screw pack to suit SWL lever on round rose	Steel

### Bolt Cap Fixings

Range	Model	Description	Material
All SS Pulls	SBF1016	Bolt cap fixing pack to suit 16mm handles, and SWE1040 door knob	Steel
	SBF1019	Bolt cap fixing pack to suit 19mm handles, and SWE1040 door knob	Steel
	SBF1022	Bolt cap fixing pack to suit 22mm handles, and SWE1040 door knob	Steel
	SBF1025	Bolt cap fixing pack to suit 25mm handles, and SWE1040 door knob	Steel
	SBF1030	Bolt cap fixing pack to suit 30mm handles, and SWE1040 door knob	Steel

### Recessed Pull Handles

Range	Model	Description	Material
Recessed	FPH1000	Rectangular Flush Pull	Steel
	FPH1001	Radius Flush Pull	Steel
	FPH1002	Circular Flush Pull	Steel
	FPH1003	Circular Flush Pull	Steel

## Annex C – Accessories

### Plates - Push/Pull/Kick

Range	Model	Description	Material
Stainless Steel	FPP1300	300 x 75mm FINGER PLATE - PLAIN	SS201
	FPP1350	350 x 75mm FINGER PLATE - PLAIN	SS201/SS304
	FPP1500	500 x 75mm FINGER PLATE - PLAIN	SS201/SS304
	FPP1650	650 x 75mm FINGER PLATE - PLAIN	SS201
Aluminium	FPP43500	350 x 75mm FINGER PLATE - PLAIN	Aluminium
	FPP45000	500 x 75mm FINGER PLATE - PLAIN	Aluminium
	FPP46500	650 x 75mm FINGER PLATE - PLAIN	Aluminium
Stainless Steel	FPP1301	300 x 75mm FINGER PLATE - PULL	SS201
	FPP1351	350 x 75mm FINGER PLATE - PULL	SS201
Stainless Steel	FPP1302	300 x 75mm FINGER PLATE - PUSH	SS201
	FPP1352	350 x 75mm FINGER PLATE - PUSH	SS201
Aluminium	FPP43002	300 x 75mm FINGER PLATE - PUSH	Aluminium
	FPP43502	350 x 75mm FINGER PLATE - PUSH	Aluminium
Stainless Steel	KPP1590	KICKPLATE 590 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1615	KICKPLATE 615 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1650	KICKPLATE 650 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1675	KICKPLATE 675 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1690	KICKPLATE 690 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1715	KICKPLATE 715 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1725	KICKPLATE 725 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1750	KICKPLATE 750 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1790	KICKPLATE 790 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1805	KICKPLATE 805 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1815	KICKPLATE 815 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1830	KICKPLATE 830 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1855	KICKPLATE 855 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1880	KICKPLATE 880 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1890	KICKPLATE 890 x 150 x 1.2mm c/w SCREWS	SS201
	KPP1905	KICKPLATE 905 x 150 x 1.2mm c/w SCREWS	SS201
KPP1915	KICKPLATE 915 x 150 x 1.2mm c/w SCREWS	SS201	

### Door Knockers

Range	Model	Description	Material
	M37	VICTORIAN - RING DOOR KNOCKER	Brass
	M38S	VICTORIAN - URN DOOR KNOCKER	Brass
	M43	DOOR KNOCKER ON ROSE	Brass
	SWE1020	SLIMLINE DOOR KNOCKER G316	SS316

### Door Chain

Range	Model	Description	Material
	AA75	Heavy Door Chain	Brass

### Door Guard

Range	Model	Description	Material
	SDG4001	DOOR GUARD	Zinc

### Cylinder Pulls

Range	Model	Description	Material
	M40	CYLINDER LATCH PULL	Brass
	AQ40	ARCHITECTURAL QUALITY CYLINDER PULL	Brass
	ECP1000	CYLINDER PULL - EURO	SS201
	PCP1000	CYLINDER PULL - LOCK	SS201
	RCP1000	RIM CYLINDER PULL	SS201

### Numerals

Range	Model	Description	Material
	N0-8	FACE FIX NUMERAL	Brass
	NUM10100-8	100 x 72 x 5mm NUMERAL - FACE FIX G304	SS304
	NUM10500-8	50 x 36 x 2mm NUMERAL - FACE FIX G304	SS304
	NUM10170-8	178 x 2mm NUMERAL - CONCEALED PIN FIT G316	SS316

### Hooks

Range	Model	Description	Material
	AA63	196mm Cabin Hook - Heavyweight (Silent Pattern)	Brass
	AA64	245mm Cabin Hook - Heavyweight (Silent Pattern)	Brass
	CAB1100	100mm CABIN HOOK SILENT PATTERN G316	SS316
	CAB1150	150mm CABIN HOOK SILENT PATTERN G316	SS316
	CAB1200	200mm CABIN HOOK SILENT PATTERN G316	SS316

### Signage

Range	Model	Description	Material
	SEX1011	76 x 1.5mm MALE SYMBOL - FACE FIX	SS201
	SEX1012	76 x 1.5mm FEMALE SYMBOL - FACE FIX	SS201
	SEX1014	76 x 1.5mm SHOWER SYMBOL - FACE FIX	SS201
	SEX1015	76 x 1.5mm FIRE DOOR SIGN - KEEP LOCKED - FACE FIX	SS201
	SEX1016	76 x 1.5mm FIRE DOOR SIGN - KEEP SHUT - FACE FIX	SS201
	SEX1017	76 x 1.5mm DISABLED SYMBOL - FACE FIX	SS201
	SEX1018	76 x 1.5mm UNISEX SYMBOL - FACE FIX	SS201
	SEX1021	76 x 1.5mm FIRE ESCAPE KEEP CLEAR SIGN - FACE FIX	SS201
	SEX1022	76 x 1.5mm AUTOMATIC FIRE DOOR KEEP CLEAR SIGN - FACE FIX	SS201
	SEX4011	MALE SYMBOL	Aluminium
	SEX4012	FEMALE SYMBOL	Aluminium
	SEX4015	FIRE DOOR KEEP LOCKED SYMBOL	Aluminium
	SEX4016	FIRE DOOR KEEP SHUT SYMBOL	Aluminium
	SEX4017	DISABLED SYMBOL	Aluminium
	SEX4018	UNISEX SYMBOL	Aluminium

### Door Viewers

Range	Model	Description	Material
	SWE1000	DOOR VIEWER 180 DEGREES - GLASS LENS	SS304
	SWE1010	DOOR VIEWER 180 DEGREES - GLASS LENS	SS316