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**Title:**

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Field of Application for:  
Falcon Stredor® 54 and Strebord®  
54 Fire Resisting Doorsets.  
60 Minutes Fire Resistance

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**Issue Date:**

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18<sup>th</sup> May 2020

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**Valid Until:**

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18<sup>th</sup> May 2025

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**Report No:**

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WF427764

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**WF Reference:**

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**Prepared for:**

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## 11 Hardware

### 11.1 General

The following section details the permitted scope and constraints for fitting hardware to this door design. The following items of hardware must also bear the CE Mark:

1. Single axis hinges: Test Standard EN 1935
2. Controlled door closing devices: Test Standard EN 1154
3. Electrically powered hold-open devices: Test Standard EN 1155
4. Emergency exit hardware: Test Standard EN 179
5. Panic exit hardware: Test Standard EN 1125.

### 11.2 Tested Hardware

The following hardware has been successfully incorporated in the tests on the Stredor® 54 and Strebord® 54 doorset designs:

Element	Product	Reference
<b>Hinges</b>	Zoo bearing butt hinge	-
	Royde & Tucker Butt Hinge	H207
	Arrone Butt Hinges	8182
	Zoo Hardware Butt Hinges	CF849
	Royde & Tucker Lift-Off Hinges	H101
	Carlisle Brass	HIN1433/13
<b>Closer</b>	Concealed Closers	
	Geze concealed closer <sup>1</sup>	Boxer 2-4
	Astra Door Controls - Jamb Mounted	4003
	Face Fixed Overhead Closer	
	Arrone overhead closer	AR1500
	Rutland overhead closer	TS11204
<b>3 POINT - Locks<sup>2</sup></b>	Dorma overhead closer	TS92
	ERA Multipoint latch	Surefire Classic
	Glutz Multipoint latch	Mint 1893/18931
	Winkhaus Multipoint latch	AV2
	ERA Cylinder	Fortress 3*
	Glutz Cylinder 35/35	GC0009 3*
<b>Furniture</b>	Yale Cylinder 35/35	Platinum 3*
	UAP eye viewer	SWALF14BRASSUP
	Glutz brass eye viewer	GY3504
	Zoo lever handles	ZPS 030SS
	Zoo escutcheon	ZPS 001SS
	Glutz Zurich lever handles	5088/5620 rose
	Glutz escutcheon	5380C.3
	Hafele handleset	HL03
	Escutcheon	Serozzetta EP SS
	Easi-Exit Escutcheon	DLS7260ESC
	Zoo Hardware Lever Handle	Stanza ZPZ090SC

#### Notes:

<sup>1</sup> See section 11.3.3.1 for full requirements of the Geze Boxer concealed closer

<sup>2</sup> See section 11.3.1 for details of required installation method for multipoint locksets

<sup>3</sup> Glutz Mint latch was tested with centre latch only engaged.

## 11.3 Additional & Alternative Hardware

### 11.3.1 Latches & Locks

The tested ERA Surefire Classic, Glutz Mint 1893 or Winkhaus AV2 multipoint latch may be utilised with either of the Strebord® 54 and Stredor® 54 door designs.

The installed latch must be protected with the tested intumescent protection detailed below. It is preferable the latch be kept locked at all 3 locking points when not in active use.

Element		Specification (mm)
Lock Cylinder		A lock cylinder must always be installed
Intumescent protection	Fitted to both sides of centre latch body, fully encasing whole lock body of top and bottom lock bodies	<ol style="list-style-type: none"> <li>1. 1mm thick raw graphite - Sealed Tight Solutions Ltd</li> <li>2. 1mm thick Therm-A-Strip – Intumescent Seals Ltd</li> <li>3. 1mm thick MAP – Lorient Polyproducts Ltd</li> <li>4. 1mm Interdens – Dufaylite Developments Ltd.</li> </ol>
	Under all Forends	<ol style="list-style-type: none"> <li>1. 1mm thick raw graphite - Sealed Tight Solutions Ltd</li> <li>2. 1mm thick Therm-A-Strip – Intumescent Seals Ltd</li> <li>3. 2mm thick MAP – Lorient Polyproducts Ltd</li> <li>4. 2mm Interdens – Dufaylite Developments Ltd.</li> </ol>
	Under all and Keeps	<ol style="list-style-type: none"> <li>1. 2mm thick raw graphite - Sealed Tight Solutions Ltd</li> <li>2. 2mm thick Therm-A-Strip – Intumescent Seals Ltd</li> <li>3. 2mm thick MAP – Lorient Polyproducts Ltd</li> <li>4. 2mm Interdens – Dufaylite Developments Ltd.</li> </ol>
Materials		All parts essential to the latch must remain as tested
Location		Centre latch nib to be installed between 950mm and 1050mm from the threshold

For fire resistance performance, alternative cylinders, handles and security furniture to that tested with the latches and listed in section 11.2 may be utilised provided they are of no larger dimensions and comprised of the same, tested materials. The PAS24:2016 test standard allows for alternative items provided they have a combined TS007 rating of 3 stars or above.

### 11.3.2 Hinges

Stredor® 54 and Strebord® 54 leaves must be hung on a minimum of 3 hinges. Hinges with the following specification are acceptable.

Alternative hinges not listed in section 11.2 must be Certifire approved for 60 minutes in ITT doorsets with solid timber door leaves.

Element	Specification
Blade height	90 – 120mm
Blade width (excluding knuckle)	30 – 35mm
Blade thickness	2.5 - 4mm
Fixings	Minimum of 4No. 30mm long No. 8 or No. 10 steel wood screws per blade
Materials	Steel or stainless steel
Hinge positions (to top of blade)	Top: 100 – 180mm from the head of the leaf Middle: Equispaced between top and bottom hinges Bottom: 150 – 250mm from the foot of the leaf
Intumescent protection	see section 9

### 11.3.3 Automatic Closing

Alternative overhead face fixed closers not listed in section 11.2 must be Certifire approved for 60 minutes in ITT doorsets with solid timber door leaves.

#### 11.3.3.1 Geze Boxer Concealed Closer

The Geze Boxer concealed closer was tested in report WF401039 and is permitted for installation subject to the following requirements;

1. May only be fitted into the Strebord® 54 doorset design using intumescent specification A2 in section 4.5.4.1. No increase in frame head thickness or leaf lippings is required
2. The closer must be fitted with the following intumescent protection:
  - Closer arm partially interrupts both seals in the frame head, leaving 8mm of each continuous
  - 1mm thick Lorient MAP or Interdens must be installed lining all sides of the closer body rebate in the leaf head and on top of the closer body.
3. The concealed closer must be installed as per the manufacturer's instructions.

#### 11.3.3.2 Astra Door Controls 4003 concealed, jamb mounted closer

Based on the results of WF413865, the 4003 concealed, jamb mounted closer is permitted for installation subject to the following requirements:

1. May be fitted to either Stredor® 54 or Strebord® 54 door designs
2. The closer must be mounted between 600 – 1000mm above the threshold
3. The closer must be fitted with the following intumescent protection:
  - 1mm thick Intumescent Seals Ltd Therm-A-Strip must be installed Encasing closer body and under the forends in both leaf and door frame
  - The closer reaction plate (forend) in the door frame will partially interrupt both intumescent seals leaving 4mm of each seal running continuous past the plate.

#### 11.3.4 Pull Handles

These may be surface-fixed to the door leaf provided that they are steel or stainless steel and the length is limited to 1200mm between the fixing points. No additional intumescent protection is required provided that the hole for the bolt through the leaf is tight.

#### 11.3.5 Push Plates/Kick Plates

Steel or stainless steel face-fixed hardware such as push plates and kick plates may be fitted to the doorsets. These items of hardware are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

#### 11.3.6 Panic Hardware

Panic hardware may be fitted, provided that its installation does not require the removal of any timber from the leaf, stop or frame reveal and it in no way interferes with the self-closing action of the door leaf.

#### 11.3.7 Door Security Viewers

The UAP and Glutz door security viewers were successfully tested in reports CFR1902142 and WF401039. Alternative door security viewers with steel or stainless steel bodies of a diameter less than or equal to 15mm may be used provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1mm). Lenses must be glass and the item must be bedded into a tested intumescent mastic.

#### 11.3.8 Air transfer grilles

Air transfer grilles must be Certifire approved for 60 minutes in ITT doorsets with solid timber door leaves. Restriction relating to size, location and intumescent protection around the air transfer grille must be complied with.

The area occupied by the air transfer grille must not exceed 0.2m<sup>2</sup> and must be deducted from the area of glazing, if both elements are fitted.

#### 11.3.9 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Lorient IS1212, IS1511, IS7025, IS7060, Sealmaster Delta or Sealed Tight Solutions Ltd. ST1009) may be fitted to this doorset design without compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self-closing function of the leaves.

The Sealmaster 'Delta' smoke seal was successfully tested in report CFR1902142. This seal must be fitted to upstand of the stop in the frame. The seal must be installed as per the manufactures instructions.

### 11.3.10 Threshold drop Seals

A Lorient 8001Si and Sealmaster DRP drop seals were successfully tested in reports WF401039 and CFR1902142 and are acceptable in all door designs. The drop seal must be fitted with 1mm thick Interdens to all sides of the rebate under the drop seal. The following types of automatic threshold drop seals may be recessed into the bottom of leaves without compromising the performance.

Product	Manufacturer
IS8010si, IS8010Si	Lorient Polyproducts Ltd.
RP8Si	Raven Products Ltd.
Schall-Ex Duo L-15	Athmer HG
NOR810, NOR810S, NOR810dB+	Norsound Ltd.
FAS45	Fire & Acoustic Seals Ltd.
DRP2712	Sealmaster (Dixon International Group Ltd)
STS 422, STS 422GT	Sealed Tight Solutions Ltd

All drop seals must be fitted in line with the manufacturing's instructions and intumescent protections for 60 minutes in the appropriate door blank.

### 11.3.11 Letter Boxes/Plates

Letter boxes/plates must be Certifire approved for 60 minutes in ITT doorsets with solid timber door leaves. Restriction relating to size, location and intumescent protection around the Letter box/plate must be complied with.

The area of the letter plate (and air transfer grille if present) plus any glazing must not exceed the total permitted area for glazing in the leaf.

## 12 Installation

### 12.1 Door Gaps

For fire resistance performance, door gaps and alignment tolerances must fall within the following range.

Location	Dimensions
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering <sup>1</sup>

#### Note:

<sup>1</sup> Tolerances are for fire resistance performance. Refer to section 14 for smoke control tolerances.

### 12.2 Onsite Leaf Size Adjustment

Door leaves may be altered as follows.

Element	Reduction
Lipping	The lipping thickness can be reduced by 1mm to assist with onsite fitting of leaf.