High Wycombe Office:
Chiltern House, Stocking Lane,
High Wycombe,
HP14 4ND,
United Kingdom
T: +44 (0)1494 569750
W: www.warringtonfire.com

Title

Field of Application for:

The Halspan® Prima 60 Range of Doorsets.

Part 1: Timber Based Door Frames

For 60 minutes Fire Resistance

Report No.:

FEA/F96103 Part 1 Revision Q

Issue Date:

30th May 2024

Valid Until:

30th May 2029

Job Reference:

WF544568

Prepared for:

Halspan Limited
Regent House,
Regent Centre,
West Lothian,
EH49 7HU
United Kingdom

Written permission must be obtained from Halspan Limited in order to manufacture doorsets within the scope of this assessment.

This field of application report FEA/F96103 Part 1 Revision Q is one part of the suite of (Prima 60) assessments, other parts of the suite address other doorset designs.

Registered Office:
Warringtonfire Testing and Certification Limited, 3rd Floor, Davidson Building, 5 Southampton Street, London, WC2E 7HA, United Kingdom Co. Reg. No. 11371436

10 Hardware

10.1 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 UKCA or CE Mark in addition to the requirements outlined in the following sections. The UKCA or CE mark must indicate that the hardware is suitable for fire doors in the classification code and declaration of performance issued by the hardware manufacturer:

- Latches & locks: Test Standard EN 12209
- Single axis hinges: Test Standard EN 1935
- Controlled door closing devices: Test Standard EN 1154
- Electrically powered hold-open devices: Test Standard EN 1155
- Door co-ordinators: Test Standard EN 1158
- Emergency exit hardware: Test Standard EN 179
- Panic exit hardware: Test Standard EN 1125.

The following sections consider what tested and assessed alternative items of essential and non-essential hardware that may be used on the doorset range.

Items of hardware have been considered and approved via the following means:

- The component has been successfully tested to BS 476: Part 22: 1987 or BS EN 1634-1 in a suitably similar type of doorset e.g. timber leaf in timber frame.
- As a result of an assessment of the appropriateness of the item of hardware, based on test evidence not commissioned by Halspan Limited.
- As a result of the Certifire approval of the item of hardware – Valid at the date of manufacture.

Each section will consider the named item of hardware and detail if there are any limitations associated with:

- Leaf size
- Configuration
- Intumescent seals
- Intumescent protection
- Frame configuration requirements

No item of hardware should be within 200mm of another item of hardware unless there is test evidence to demonstrate they can be in closer proximity.

Hardware items should generally be fitted in accordance with the manufacturer's instructions. **However, the parameters and requirements of this assessment always take precedence, including specified protection such as hardware gaskets.** Referenced Certifire approved hardware may be incorporated subject to the design, material and dimensional limitations identified within this assessment report and identified on the relevant Certifire certificate.

Where maximum leaf dimensions are given in the specifications for items of hardware the guidance in section 4.5.5 must be followed.

10.2 Intumescent to Hardware

The intumescent materials used to protect hardware that have been tested and assessed for this doorset design are detailed below. Note that any one of the product/manufacturer options listed in the table may be used in the specific application noted. However, only 1No manufacturer should be considered for any single item of hardware. For specific items of hardware the intumescent requirements are detailed within the relevant subsection.

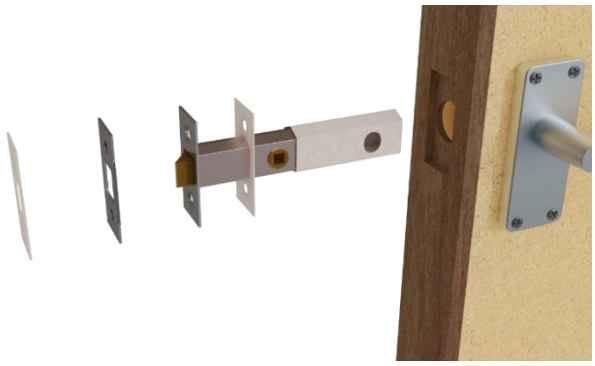
The door gap perimeter intumescent seal specifications are documented in conjunction with the leaf envelope size limitations in section 4.

Hardware Intumescent Specification		
Item	**Location**	**Product/Manufacturer (mm)**
Butt Hinges	Fitted under each hinge blade.	1 (t) Halspan Limited SLS-PAD-103 graphite (WF512409) 1 (t) Interdens® (WF198681) 2 (t) Interdens® (WF508668) 1 (t) Lorient Polyproducts Ltd, MAP (RF07141) 1 (t) Sealed Tight Solutions Ltd, Graphite, (ST100 x 25) (PF15163)
Single Point Lock/latches and Roller catches	Under forend, keep and encasing lock or latch body for all doorsets	1 (t) Halspan Limited SLS-PAD-109 (CFR1909241) 1 (t) Interdens® (WF379041) 1 (t) Lorient Polyproducts Ltd, MAP (FRR-2008/5506) 2 (t) Lorient Polyproducts Ltd, MAP (FRR-2110/1497 A/B) 1 (t) Sealed Tight Solutions Ltd, Graphite (PF15163)
Flush bolts	Encasing the entire body of the flush bolt including the back surface of the face plate	2 (t) Halspan Limited SLS-PAD112 (WF526042) 2 (t) FlexiFire Z1F0160G graphite (CFR1909241 B) 2 (t) Therm-A-Strip - Intumescent seals Ltd (RF13167) 2 (t) Interdens® (F14095) 2 (t) Lorient MAP (FRR-2110/1498) 1 (t) Lorient MAP (FRR-2102/4628A) 1 (t) Interdens® (F16037) 1 (t) Sealed Tight Solutions Ltd, Graphite (PF15035)

Hardware Intumescent Specification		
Item	**Location**	**Product/Manufacturer (mm)**
Rebated threshold drop seals (when required – see section 10.16.2)	Encasing the concealed faces of the drop seal	1 (t) Halspan, Graphite (RF13167) 1 (t) Eurolever MAP XX8002DDS (FRR-2010/2942) 2 (t) Lorient MAP (FRR-2110/1497) 1 (t) Lorient MAP (WB112-1B & 2B)

Note: Halspan intumescent protection is supplied with Halspan hardware, e.g. Halspan sashlock LCK-BSS-104 comes with SLS-PAD-109. The combined product is then referenced BOM-LCK-111.

Example of hinge protection detail



Example of lock & latch protection detail

Example Flush bolt installation and intumescent protection

Gaskets must be fitted where required by supporting evidence, for example, test evidence or Certifire certificates. If gaskets are not required by the supporting evidence but are within this Field of Application, the requirements of this Field of Application take precedence.

Where it is stated that intumescent is not required for a particular element of hardware, it is permitted to use up to 2mm thick MAP, Interdens or graphite-based gasket tested for the particular application as appropriate for the hardware. It is the opinion of Warringtonfire that the additional protection will not detract from the fire resistance performance under test conditions.

10.3 Essential Hardware

The following table details the essential hardware for the various doorset configurations that are referenced in this assessment. Other items of hardware which are detailed within this report may be fitted in addition to the essential items as required for the selected configuration.

Configuration	Hardware
LSASD	• Latch • Handle • Hinges • Self-closing device (closer)
ULSASD	• Hinges • Self-closing device (closer)
DASD	• Top pivot & bottom strap • Self-closing device (closer)
LSASD+OP	• Latch • Handle • Hinges • Self-closing device (closer)
ULSASD+OP	• Hinges • Self-closing device (closer)
LSADD	• Latch • Handle • Hinges • Self-closing device (closer) • Flush bolt or face fixed bolt • Door Selector if rebated meeting edge or meeting edge astragal present
ULSADD	• Hinges • Self-closing device (closer) • Flush bolt • Door Selector if rebated meeting edge or meeting edge astragal present
DADD	• Top pivot & bottom strap • Self-closing device (closer)
LSADD+OP	• Latch • Handle • Hinges • Self-closing device (closer) • Flush bolt or face fixed bolt • Door Selector if rebated meeting edge or meeting edge astragal present
ULSADD+OP	• Hinges • Self-closing device (closer) • Door Selector if rebated meeting edge or meeting edge astragal present

Note:

1. The above table includes a self-closing device, but for some permanently locked fire doors a closer is not required, providing it is fitted with the appropriate signage. If this is the case the doorset must be considered a latched doorset arrangement for the purpose of leaf size envelopes defined within section 4.5.

2. It is permitted to omit the door closer and fit bolts to the inactive leaf of unlatched double doorsets. The active leaf must be fitted with a door closer and both leaves must carry the appropriate signage.

10.4 Latches & Locks

The following sections detail the permitted locks and latches which have been tested or assessed within the Halspan Prima 60 doorset design.

Doorsets fitted with only a lock without a latching function are permitted. The fitting of a lock only is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using unlatched doorset configurations as detailed within section 4.5.

Up to 2No. single point engagement locks or latches may be applied within the vertical edge of the door leaf in any individual doorset providing 200mm of uninterrupted perimeter intumescent is maintained between the two hardware items. When fitted the lock or latch bodies shall be installed at a height as detailed within the relevant section below. Refer to specific notes contained within each section for further considerations on lock or latch type.

Locks fitted within rebated meeting edges shall not be applied when it is required to remove timber from the upstand of the rebate to facilitate their application.

10.4.1 Single Point Engagement

The table below details a selection of the tested latches and locks that are approved.

Element	Manufacturer & Product Reference
Locks & latches	• Zoo Hardware ZDL0060RSS (WF504390)
	• Dorma – Dorma 181 mortise lock (WF189639 A)
	• Dorma – SVP5252 mortise lock with 80mm long standard cylinder (WF189639 B)
	• Dorma – SVP2277 next generation mortise lock (WF350451 A/B)
	• Hoppe – AR913-S-80 SSS (WF193473/A A)
	• Arrone (Hoppe) AR910 (WF380315B B)
	• Hoppe (UK) Ltd AR 912-S-60-SSS (WF331430 B)
	• Halspan – LCK-BSS-100 (WF384748B B)
	• Halspan – LCK-BSS-200 (WF386186 B)
	• Halspan – BOM-LCK-104 (WF380349 AR1 B)
	• Durable collection Ltd. S-5572 (WB112-1B&2B B)
	• DORMAKABA Mortise 170Plus/WZ 55 (TB 197-1B&2B A)
	• Halspan – LCK-BSS-101 (CFR1809241 A/B)
	• Hafele 911/02/145 mortise sash lock (FRR-2110/1497 A/B)
	• Securefast plc SEU777/2R (WF415117 B)
	• E*S Easi-T latch (RF07141 B)
	• Dormakaba SVP 6000 80mm backset (WF523824/R A/B)
	• Abloy OY– EL520/100 & Abloy OY EA 329 (WF364240)
	• Abloy – EL560 Solenoid Lock 100mm backset & Abloy EL 322 keep (WF508198)
	• Abloy – EL 560 Solenoid Lock 60mm Backset & Abloy – EA 322 keep (WF508668)
	• Abloy EL560 - 65mm backset & Abloy EA322 (WF520063)
	• Abloy EL560 - 100mm backset & EA 322 keep (CFR2211141)

Alternatively, Certifire approved components certified for use within 60-minute fire resistance applications on 54mm thick timber door and timber frames with the following specification are also deemed acceptable for both single and double leaf doorsets.

Element	Specification
Maximum forend and strike plate dimensions (excluding tongue)	235mm high x 26mm wide x 4mm thick
Maximum body dimensions	168.5mm high x 133mm wide x 18mm thick
Intumescent protection	see section 10.2
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass with a melting point ≥ 800^0 C

Notes:

1. In all instances the location of the handle must be between 800 – 1500mm from the finished floor level.
2. Locks with the above specification may be fitted centrally within the thickness of the leaf or off set by a maximum of 13mm from the centreline of the door thickness to the centreline of the forend. This is based on successful testing undertaken in FRR-2010/2942 which included an offset lock and a rebated meeting edge.
3. Both mechanical and electronically powered locks which meet the specification given above are permitted.

10.4.2 Latches & Locks – Multi Point Engagement

The table below details the tested and assessed multi point latches that are approved.

Test Evidence (Tested configuration)	Item	Hardware Intumescent Protection	Minimum Perimeter Intumescent (Specified in Section 4.5)
WF198681 (LSASD)	Dorma M-SVP 5000	1mm Interdens to all concealed faces of lock bodies, under forend and under strike.	2No. 15mm wide x 4mm thick seals fitted centrally within the frame reveal 10mm apart. Intumescent seal specification shall meet the criteria given in the text below this table and correspond to the intumescent permitted in section 4.5.
WF512409 (LSASD) CFR2105131 (LSASD)	Winkhaus AV2 M105301	Winkhaus AV2 intumescent pack Ref 5084041	
CFR2105131 (LSASD)	Winkhaus AV3 M113345		
CFR2006181 (LSASD) & CFR2209201 (LSASD)	Halspan Autolock Crimebeater 3 point lock	2mm thick Halspan SLS-PAD-122 all faces of the lock body, actuator box and hook boxes and to rear of strike, actuating plate and keeps	
WF504819 (LSADD) & WF504821 (LSADD)	Glutz 18931 Mint SB	1mm Interdens® around central lockcase, top and bottom lock cases and forend plate	
RF04074 (LSASD)	GU Ferco Multipoint lock / latch	2mm Interdens® around central lockcase, top and bottom lock cases and forend plate	

Based on the test evidence the above tested and assessed multi-point locks are permitted for use with the doorset design subject to the following parameters:

Frame option: 1

Configurations: LSASD

- When a multi-point latch is fitted, the leaf perimeter edge intumescent must be located into the frame reveal along the closing edge.
- Where fitted the approved multi-point locks shall be fitted centrally to the thickness of the door leaf.
- The top and bottom locks do not need to be engaged for fire performance, except where the multi-point lock has an auto throw function the top and bottom locks must be engaged.
- The centre, top and bottom keep plates must be the same as those tested, as supplied by the manufacturer.
- In all instances the location of the spindle must be between 800–1200mm from the threshold. The multi point latch may be fitted along the entire length of the door edge, if required and as tested in report reference WF198681.
- The frame must be fitted with a stop of minimum 15mm.
- Intumescent protection to the multi-point lock used must be as tested and identified within the table above.
- The frame intumescent must be one of the following tested intumescent seals when using one of the identified multi-point locks:
    - Halspan SLS
    - ISL Therm-A-Seal
    - Lorient LP1504
    - Pyroplex

10.4.3 Cylinders

The table below details a selection of the tested cylinders that are approved.

Element	Manufacturer & Product Reference
Cylinder	• Winkhaus XR604/6 (WF512409)
	• Dorma – Dorma profilcylinder PC 51 / 30-30 (WF198681)
	• Arrone (Hoppe) AR3130-CC-NP (WF380315-B)
	• ISEO EN 1303-2005 (WF331430)
	• Abloy OY – CY332T (WF364240)
	• UAP – Kinetica Double 3 Kitemarked Euro Cylinder (CFR2006181)
	• Vier V5 – 35/10/35 (CFR1909241)
	• Glutz – GC9991.AT (WF504819)
	• Glutz – GC9991.B (WF507671)
	• Abloy – CY326 (WF508668)
	• Abloy Breaksecure 3DS 59080026 (WF507664)
	• Durable Collection Ltd – DCP M-70 (WB112-1B&2B)
	• Dorma – Double profile cylinder DEC 150-DN 40/40 (TB 197-1B&2B)
	• Eurolever SC11.71 (FRR-2010/2942)
	• Hafele 916.96.076 (FRR-2110/1497)
	• EUROART CYD280 (FRR-2008/5506)
	• Union Assa Abloy J-U6PED4555SN Union 6 pin Euro Profile (WF415117)

	• Assa Abloy CY331T (WF437975/LR)
	• Kinetica 3* cylinder & turn (WF523824/R)
	• Halspan Kinetica 3* cylinder & turn (CFR2209201)

Alternatively, components with the following specification are also deemed acceptable.

- Where required for use with either single or multi point latches, the cylinder must be constructed of either brass or steel with a melting point in excess of 800^0C.
- The cylinder must be compatible with the lock/latch.
- Cylinder dimensions may be up to 33mm high x 17mm wide at the maximum dimension and may be of euro profile or oval.
- Single and double cylinders, along with cylinder & turn are permitted.
- Door preparation for single cylinders shall penetrate no greater than 2/3rds of the door thickness.
- Intumescent protection and tightness of fitting:
    - As the lock body is protected with an intumescent material, maximum clearance between leaf and cylinder is 3mm to each edge.
    - 1mm thick MAP or non-pressure forming graphite intumescent around the cylinder is optionally permitted.

10.4.3.1 Cylinder guard & Lock Protection Plate

The testing detailed within section 3 included the following cylinder guard and lock protection plate which are therefore optionally permitted with cylinders and locks within the Prima 60 doorset design:

Test Evidence (Tested configuration)	Item	Intumescent Protection
CFR2105131 (LSASD)	Winkhaus Armorshield, two-part cylinder anti-tamper shield 64 x 22 x 22	Winkhaus AV2/AV3 intumescent pack, 5084041, fitted to the perimeter of the cylinder shield
WF512409 (LSASD)	Winkhaus ArmorPlate GBOX 02 Gearbox plate Reference 5077418	Winkhaus AV2/AV3 intumescent pack, 5084041, fitted to the lock body as tested

The above cylinder guard and lock protection plate may only be utilised with the Winkhaus AV2 or AV3 multipoint lock as detailed within section 10.4.2. The above detailed intumescent protection shall be fitted as tested.

10.4.4 Electronic locking

Based on the testing undertaken on the Prima 60 doorset design as detailed within section 3.

10.4.4.1 Surface Head Mounted Maglocks

The following maglocks have been successfully tested within the Halspan Prima 60 doorset design when the mag lock body was fitted to the door frame head with the armature or associated bracket fitted to the face of the leaf:

Test Evidence	Item
WF404075	Halspan / RGL ML1200 Standard magnetic lock with a ZL bracket and using BLK 1200 contact armature/bracket and AH 1200 armature housing.
WF523824/R	Dormakaba EM 5300 GL AH with and without Dormakaba 19860290 Z & L BRACKET FOR EM 5300

In addition to the tested and permitted maglocks detailed above the following alternative Halspan / RGL maglock bodies are permitted for use:

- ML600: Slimline mini magnet
- ML600-M: Monitored version of the ML600

- ML600-D: Double Slimline mini magnet
- ML600-D-M: Monitored version of the ML 600-D
- ML600-D-MDS: As ML600-D but with monitored door status

- ML1200-M: Monitored version of the ML1200
- ML1200-MDS: As ML1200 but with monitored door status

- ML1200-D-M: Double standard magnetic lock, monitored
- ML1200-D-MDS: As ML1200-D-M but with monitored door status

The following mounting brackets and accessories are assessed as permitted in conjunction with the ML series of maglocks:

- AH600 and AH1200: Armature housing
- BK600ZL and BK1200ZL: Z&L bracket
- BK600L and BK1200L: L bracket
- BK600-D-ZL and BK1200-D-ZL: Double Z&L bracket
- BK600-D-L and BK1200-D-L: Double L bracket
- AB600ZL-DC: Architectural Z&L bracket
- AB600CL and AB1200CL: Architectural L Bracket
- BK600-F-L/AB and BK1200-F-L/AB: Architectural F/ZL bracket
- BK600-D-FL/AB and BK1200-D-FL/AB: Double Architectural F/ZL bracket
- ADJ-600L and ADJ-1200L: Adjustable L Bracket
- MAG-STRAP and ARM-STRAP: Safety Wire Holding strap

The above ML series of maglocks, armatures or brackets have been included within this assessment as none of the items are recessed into the edge or face of the door or frame and therefore it would not be expected that their fitting would increase the risk of burn through if subjected to fire resistance testing. The dimensions of some of the alternative maglock bodies are increased from the tested product. However, as they are of identical materials to the tested product, no reduction in performance would be expected as a consequence of substitution of the tested product.

Based on the test evidence, the above listed tested and assessed alternative face fixed magnetic locks are suitable for use within the following parameters:

Frame option: 1, 2, 3, 4, 5 & 7

Configurations: LSASD, ULSASD, LSADD and ULSADD

- The maglock body must be fitted directly to the frame head or utilising one of the permitted mounting brackets.
- When using the ML series of maglocks the armature(s) can be fixed to the face of the door via separate armature housing AH600 or AH1200 so that no fixings penetrate the full door thickness. The armature housing must be fixed to the door leaf using 4mm x 22mm woodscrews and the armature plate fixed to the housing by a single 8mm coachbolt which is fixed to the armature housing. Alternatively, based on the testing detailed within WF523824/R it is considered possible to throughbolt the armature to the face of the leaf, providing there is no more than 1mm clearance between the hole and bolt.
- When using the Dormakaba EM 5300 GL AH maglock the armature must be through bolted as tested in WF523824/R.
- No recessing of frame or leaf is permitted except the inclusion of a single hole to facilitate cabling which is no greater than Ø10mm.
- When fitted the maglock shall not interrupt any fire stopping detail applied to the doorset, nor require the removal of material (except screws) from the frame section.

The fitting of face fixed magnetic locks is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using the appropriate doorset configuration based on the other latch/lock hardware fitted to the doorset.

10.4.4.2 Morticed Head Mounted Locks

The following head mounted locks have been successfully tested within the Halspan Prima 60 doorset design:

Test Evidence (Tested configuration)	Item	Intumescent Protection
CFR2007291 (DADD)	ICS Security SL 500	2mm (t) Interdens®, intumescent pads with self-adhesive applied to all concealed faces of the lock components
WF509421 (DADD)	Abloy 351M80	Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate
WF509420 (DADD)	Abloy 351U80	Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate
WF434693/LR Issue 2 (LSASD)	Abloy 352M80	Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate
RF09010 (LSASD	Adams Rite, Armlock® 1354	1mm thick Halspan, Graphite applied to all concealed faces of the lock components

Based on the test evidence the above morticed head mounted locks are permitted within the following parameters:

Frame option: 1 & 3

Configurations: LSASD, ULSASD, DASD, LSADD, ULSADD and DADD

Further considerations as follows shall be met:

- When fitted the edge of neither the lock body nor keep shall be closer than 73mm to the closing edge of any leaf.
- The frame intumescent shall consist of a specification which has a minimum of 2No. 15mm x 4mm intumescent seals applied to the frame head and 1No. 15mm x 4mm intumescent seal applied to the leaf head.
- The frame thickness when fitting the Abloy series of locks detailed above shall be no less than 44mm excluding stop dimensions.
- Intumescent protection applied to the lock selected shall be as tested and identified within the table above.

The fitting of morticed head mounted locks is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using the appropriate doorset configuration based on the other latch/lock hardware fitted to the doorset.

10.4.4.3 Morticed Jamb Mounted Locks

The following jamb mounted lock has been successfully tested within the Halspan Prima 60 doorset design:

Test Evidence (Tested configuration)	Item	Intumescent Protection
WF434693/LR Issue 2 (LSASD)	Assa Abloy 351U80-SET44E9146	Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate

In addition to the tested and permitted morticed jamb mounted lock detailed above the following alternatives are permitted for use:

- Abloy 351M80
- Abloy 352M80

When fitted the above assessed locks shall include the same intumescent protection as tested with the Abloy 351U80 in WF434693/LR Issue 2. (Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate).

The assessment of the alternative locks is on the basis that the 351U80 has been tested and that 351M80 and 352M80 are of identical dimensions to the tested 351U80, with only a variation to functionality. The maximum keep dimension permitted is 150mm high x 44mm wide x 4mm thick without strike tongue as tested in WF434693/LR Issue 2.

Based on the test evidence the above morticed jamb mounted locks are permitted within the following parameters:

Frame option: 1 & 3

Configurations: LSASD and ULSASD

Further considerations as follows shall be met:

- In all instances the location of the centre line of the lockset must be between 700 – 1300mm from the finished floor level with the lock body fitted within the frame.
- The frame intumescent shall consist of a specification which has a minimum of 2No. 15mm x 4mm intumescent seals applied centrally within the frame jambs.
- The frame thickness when fitting the Abloy series of locks detailed above shall be no less than 44mm excluding stop dimensions.
- Intumescent protection applied to the lock selected shall be as tested and identified within the table above.

The fitting of morticed jamb mounted locks is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using the appropriate doorset configuration based on the other latch/lock hardware fitted to the doorset.

10.4.4.4 Electronic Strikes

The following electronic strikes have been successfully tested in conjunction with a single point lockset.

Test Evidence	Item	Intumescent Protection
WF189639	Dormakaba Fire 447 electronic strike	2mm (t) Interdens®, intumescent pads with self-adhesive applied to all concealed faces of the strike components
WF415117	Gianni Industries Inc – GK361M-ST-1224 (Fail Secure)	1mm (t) Interdens®, intumescent pads with self-adhesive applied to all concealed faces of the strike components
WF415117	Gianni Industries Inc – GK450M-ST-1224 (Fail Safe)	1mm (t) Interdens®, intumescent pads with self-adhesive applied to all concealed faces of the strike components

Based on the test evidence only the above electronic strikes are permitted within the following parameters:

Frame option: 1

Configurations: The fitting of electronic strikes is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using ULSASD configurations as detailed within section 4.5.

Further considerations as follows shall be met:

- The frame intumescent shall consist of a specification which has a minimum of 2No. 15mm x 4mm intumescent seals applied centrally within the frame jambs 10mm apart.
- The frame width shall be no less than 38mm excluding stop dimensions.
- The frame must be fitted with a planted or rebated stop of minimum 19mm high x 40mm deep.
- Intumescent protections applied to the electronic strike selected shall be as tested and identified within the table above.
- Fitted to suit a single point lock (see section 10.4.1), with the lock protected as detailed within section 10.2.

10.4.5 Access control systems

10.4.5.1 Electro-mechanical locks

The electro-mechanical access control systems detailed in the following sections have been successfully tested and assessed with the Prima 60 door blanks and are therefore suitable for use within the scope stated herein.

Test Evidence (Tested configuration)	Lock Body (Dimensions)	Handleset (Dimensions)	Intumescent Protection
WF379042 (ULSASD)	Dorma Kaba – Quantum hotel lock (Body - 148mm long x 100mm wide x 22 deep Forend – 204mm long x 26mm wide)	Dorma Kaba – Quantum hotel lock (Lever handle with back plate of 255mm x 89mm wide x 21mm projection to one face with Lever handle on rose of Ø75mm x 15mm thick and Card reader of 74mm diameter x 12.5 deep fitted including 75mm diameter x 2mm thick rubber gasket to the opposing face)	1mm Interdens to all concealed faces of lock body, under forend and under strike.
WF367907 (LSASD)	ANSI DB mortice lock (Body - 152mm long x 100mm wide Forend – 203mm long x 28mm wide) & Morticed LCA 6343 positioned such that the centre of the RFID card reader is 125mm above the spindle for the handle (Body rebate - 108mm long x 104mm wide)	VingCard Essence RFID assembly	1mm Interdens to all concealed faces of all morticed items, under forend and under strike.
		VingCard Classic RFID assembly	
		VingCard Signature RFID assembly	

20220808-005920 (LSASD)	NSP Europe Ltd – Epic Lockset (Body - 154mm long x 106mm wide x 23 deep Forend – 204mm long x 28.5mm wide)	NSP Europe Ltd – Epic Lockset std lever on rose, RFID reader & thumb turn cylinder	2mm monoammonium phosphate intumescent around lockcase, battery pack & circuit board, forend plate and keep. Keep dust pocket lined with 1mm monoammonium phosphate intumescent
WF520064 (LSASD)	Abloy Aperio L100 BL560 – 65mm RFID locking system. (Body - 166mm long x 98mm wide x 15.4 deep Forend – 225mm long x 24mm wide)	Abloy Aperio L100 long plate handleset with escutcheon, including RFID card readers. (282mm high x 48mm wide to one face of the leaf and 348mm x 52mm to the opposing face)	1mm MAP to all concealed faces of lock body, under forend and under strike.
WF437975/LR (LSASD)	Abloy OY Mortice lock/latch AL560_200170 (Body – 168.5mm long x 98mm wide x 16.5mm deep Forend – 235mm long x 24mm wide) Strike plate Assa Abloy EA329	Assa Abloy Reader HF Abloy Oy 953032 handleset	1mm MAP to all concealed faces of lock body, under forend and under strike.
WF327018 (LSASD)	Codelocks Ltd – CL 5010, tubular mortice latch	Codelocks Ltd – CL 5010	Codelocks Ltd – Code Locks Fire Kit consisting of: 3No. 8mm diameter graphite based intumescent tubes positioned in fixing bore holes Data cable bore hole lined with 1mm thick Interdens® Spindle bore hole lined with 2No.
	Codelocks Ltd – CL 2255, tubular mortice latch	Codelocks Ltd – CL 2255	
WF397957 (LSASD)	Codelocks Ltd – CL 4510, tubular mortice latch	Codelocks Ltd – CL 4510	

	Codelocks Ltd – CL 5510, tubular mortice latch	Codelocks Ltd – CL 5510	layers of 1mm thick Interdens® 1mm thick Interdens® applied under the forend and keep.

Based on the test evidence the above tested and assessed electro-mechanical locksets are permitted for use with the doorset design subject to the following parameters:

Configurations:

All of the above listed locks: LSASD, ULSASD

In addition, the above listed code locks using a tubular mortice latch: LSADD & ULSADD

- The frame intumescent shall consist of a specification which has a minimum of 2No. 15mm x 4mm intumescent seals applied centrally within the frame jambs 10mm apart, or at the meeting edge where applicable.
- The frame must be fitted with a stop of minimum 15mm.
- Positioning requirements shall be within the parameters as detailed below based on the type of lock which is utilised:
    - Locks with forends equal to or less than 65mm height may be fitted between 800mm – 1530mm from the floor level to the spindle.
    - Locks with forends greater than 65mm height may be fitted between 800mm – 1200mm from the floor level to the spindle.

10.4.5.2 Contact Sensors

The contact sensor detailed in the following section has been successfully tested and assessed with the Prima 60 doorset design and are therefore suitable for use within the scope stated herein.

Manufacturer & Product Reference (Test evidence)	Dimensions	Intumescent Protection
• Abloy 1076D (WF508668 & WF508198)	Sensor to Leaf: Ø26mm x 40mm Sensor to Frame: Ø26mm x 29mm	1mm (t) Halspan Graphite applied to all mortices

The above detailed contact sensors may be fitted subject to the following requirements:

- The sensor must be fitted centrally to the thickness of the leaf.
- The sensor must be fitted to the head of the doorset 100mm in from the closing edge of the leaf.
- The above detailed intumescent protection must be fitted.
- The intumescent specification for the doorset design must include at least 2No. 15mm wide x 4mm thick seals within the frame reveal.

10.5 Handles & Escutcheons

The table below details a selection of the tested handles and escutcheons that are approved.

Element	Manufacturer & Product Reference
Handles	• Dormakaba c-Lever pro (26xy-K6) (WF523824/R A/B)
	• Dorma - PLUS 8100FS/6500/6612 levers (WF189639 A)
	• Hoppe – FS-K138/202K Paris (WF189639 B)
	• Hoppe – Palladio Quickfit handle Lever (WF512409)
	• Dorma – PLUS 8906/6500/6612 levers, (WF350451 A/B)
	• Winkhaus Palladio quick fit lever (CFR2105131 B)
	• Arrone (Hoppe) Paris E138/42H/42HS (WF380315B B)
	• HOPPE - AR3901/10-UN-SSS (WF193473/A)
	• Hoppe AR3901/29-SSS (WF193473/A)
	• UAP – DH243-DUO-SSS-NANOCOAST (CFR2006181 A/B)
	• Halspan – LCK-MSC-200 (CFR1909241 A/B)
	• Halspan – LCK-MSC-274 (CFR2209201)
	• Glutz – GF.NES.4.GFB lever on GF.NES.5.GB (WF504821 AB)
	• HEWI – 162XAH12.530 (WF508198 A/B)
	• Hewi – 162XAH12.530 (WF508668 A)
	• Abloy 319242/PZ+BL (WF507664 A/B)
	• Durable Collection Ltd HL42 SSS (WB 112-1B&2B B)
	• Eurolever SS140X (FRR-2010/2942 A/B)

	• Hafele LDH 2170 (FRR-2110/1497 A/B)
	• Altro -SAA Lynx Pattern Latch set (CFR1509291 A)
	• EUROART LRS201/SSS (FRR-2008/5506 A)
	• Locke & Co. Ltd 2000 series Lever on backplate (WF391351 B)
	• Assa Abloy 319242/PZ+BL (CFR2211141 B)
	• Stanza Architectural Hardware – ZCA030SA (CFR1707241)
Escutcheons	• Dorma – PZ (WF350451 A/B)
	• Dorma – Dorma Plus Cylinder rose (WF198681 B)
	• Zoo Architectural Hardware – ZCS001SS – (CFR1909241 A)
	• Glutz – GF.NES.8.GFB Square escutcheon (WF504819 AB)
	• Smith and Locke SKU-6917SKU / Euro Escutcheon (WF415117 B)
	• HEWI – 306.23X (WF508198 A)
	• Hewi – 306.23 (WF508668 A/B)
	• Eurolever square escutcheon SS5011 (FRR-2010/2942 A/B)

Alternative handles are permitted providing they meet the specification given below:

- Steel, stainless steel, brass, aluminium or bronze are permitted.
- Surface fixings or through fixings are permitted. If through fixed there must be no more than 2mm clearance between the hole and the fixing.
- The hole through the leaf to facilitate the spindle must be no greater than 25mm diameter.

The design may be either handle on rose or handle on back plate up to the following maximum sizes:

- Handle on rose with a rose diameter up to 56mm.
- Handle on back plate with a back plate size up to 260mm high x 200mm wide.
- Handle handle length 250mm.

The handle must be compatible with the lock/latch, such that the closing action of the doorset is not impeded.

Alternative escutcheons are permitted providing they meet the specification given below:

- Steel, stainless steel, brass, aluminium or bronze are permitted.
- Surface fixings or through fixings are permitted. If through fixed there must be no more than 2mm clearance between the hole and the fixing.
- The escutcheon may be up to Ø56mm overall and up to 10mm thick.

10.6 Hinges and Pivots

10.6.1 Butt Hinges

The table below details a selection of the tested butt hinges that are approved.

Element	Manufacturer & Product Reference
Butt Hinge	• Halspan Limited – HIN-BSS-108 (WF520064) **BOM-HIN-202** when paired with SLS-PAD-103 intumescent
	• Halspan Limited – HIN-BSS-104 (CFR2109021) **BOM-HIN-201** when paired with SLS-PAD-103 intumescent
	• Halspan Limited – HIN-BSS-103 (CFR2103161) **BOM-HIN-200** when paired with SLS-PAD-103 intumescent
	• Royde and Tucker Ltd – Hi-Load 102 (WF390174)
	• Royde and Tucker Ltd – Hi load 125 (WF379042)
	• Royde and Tucker Ltd – Hi-Load G4530-FS-BSS (CFR1811211)
	• Royde and Tucker Ltd – H101 (PF14102)
	• Royde and Tucker Ltd – H105 Gi load lift off type hinges (RF07141)
	• Dorma – 3090F 2BB (TB197-1B&2B)
	• Dorma – 3094F (WF350451)
	• Hoppe (UK) Ltd – AR 8380 SSS (WF331430)
	• Glutz – GH2351.R.3K (WF504819)
	• Allgood – SS8066R Grade 14 (WF508668)
	• Zoo Hardware Ltd – ZHS243R (CFR2002051)
	• EUROART – HINBB433/304/SSS (FRR-2008/5506)
	• Cooke Brothers Ltd – Phoenix concealed bearing butt hinge 7730 (CFR1708031)

Alternatively, Certifire approved components certified for use within 60-minute fire resistance applications on 54mm thick timber door and timber frames with the following specification are also deemed acceptable for both single and double leaf doorsets.

Element	Specification
Blade height:	90 - 120mm
Blade width (excluding knuckle):	29 - 35mm (Fitted within the leaf frame) (See note 1)
Blade thickness	2.5 - 4mm
Fixings:	Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade
Materials:	Steel or stainless steel or brass with a melting point of greater than 800 degrees Celsius.

Intumescent protection shall be as defined in section 10.2 in all instances.

Note:

1. Projection hinges with blade widths greater than the widths detailed above are permitted providing that no more than 35mm of each blade is rebated within the leaf edge or frame.

In all instances, the hinges must have the following specification.

Leaves less than 2400mm (h) must be hung on a minimum of 3 hinges. Leaves greater or equal 2400mm (h) must be hung on a minimum of 4 hinges.

Leaves less than 1200mm (h) can be hung on a minimum of 2 hinges located 150mm from the top and bottom of the door leaf (top hinge location is measured from the top of the hinge blade to the top of the door leaf and bottom hinge location is measured from the bottom of the hinge to the bottom of the door leaf).

Element		Specification	
Hinge positions:	If 3 hinges are required:	Top	100 –180mm from the head to top of hinge
		2nd	Minimum 200mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	100-180mm from the head to top of hinge
		2nd & 3rd	Equispaced between top and bottom or 2nd hinge 200mm from top hinge and 3rd hinge equally spaced between 2nd and bottom hinge
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 10.2	

Additional hinges may be added providing the requirement of 200mm between adjacent items of hardware is maintained.

10.6.2 Concealed Hinges

Concealed hinges are permitted with Frame 2 and Frame 1 as detailed in the following sections.

10.6.3 Concealed Hinges – Frame 1

The concealed hinges detailed in the following section have been successfully tested with Prima 60 in conjunction with a hardwood frame:

Test Evidence (Tested configuration)	Hinge (Dimensions)	Intumescent Protection	Minimum Perimeter Intumescent (Specified in Section 4.5)	Minimum Number of Hinges
WF323822 (ULSASD)	Bartels Systembeschlage GmbH Pivota® DX 300 3-D (Hinge 270mm (h) x 30mm (w) x 35 (d) to frame & 270mm (h) x 28mm (w) x 35 (d) to leaf)	2mm (t) Lorient Polyproducts Limited, Interdens® applied to all concealed faces of each hinge blade.	2No. 15mm wide x 4mm thick seals fitted centrally within the frame reveal 10mm apart. Intumescent seal specification shall meet the criteria given in the text below this table and correspond to the intumescent permitted in section 4.5.	2
	Bartels Systembeschlage GmbH Pivota® DX 101 3-D (Hinge 180mm (h) x 30mm (w) x 30 (d) to both frame & leaf)			2
WF348445/R Issue 2 (ULSASD)	Simonswerk GmbH Concealed hinge system TECTUS TE 527 3D (Hinge 155mm (h) x 26mm (w) x 30 (d) to frame & 155mm (h) x 26mm (w) x 32 (d) to leaf)	1mm (t) Lorient Polyproducts Limited, ITH-TECTUS-TE525-10 (kit), MAP		2
WB112-1B & 2B (LSASD)	Simonswerk Tectus TE 340 3D (Hinge 160mm (h) x 28mm (w) x 31 (d) to frame & 33.5 (d) to leaf)	1mm (t) Lorient Polyproducts Limited, Interdens® applied to all concealed faces of each hinge blade.		3

CFR1711241 (ULSASD)	Royde and Tucker HC605 (Hinge 119mm (h) x 22mm (w) x 6 (d) to frame & 184mm (h) x 33mm (w) x 32 (d) to leaf)	1mm & 2mm (t) Interdens®, Type 15 (1mm) applied around face of the body within leaf. Type 36 (2mm) applied to all flat surfaces parallel to the reveal. See photo in section 10.6.3.1.		2
CFR1909241 (LSADD)	Halspan CEAM Art Stars 1131 Concealed Hinges (Hinge 160mm (h) x 32mm (w) x 29 (d) to both frame & leaf)	1mm (t) Halspan ES1131, graphite applied to all concealed faces of each hinge blade.		4
RF04074 (LSASD)	Cairney Hardware SOSS (hinge footprint 117mm long x 25mm wide to both frame and leaf)	2mm (t) Interdens®, applied to all concealed faces of each hinge blade.	Intumescent specification to be as detailed within section 4.5 specification – A/11, B/11, F/11 & G/11	3

In addition to the tested and permitted concealed hinges detailed above the following alternative concealed hinges are permitted for use:

Alternative Bartels Systembeschlage GmbH Pivota® concealed hinges:

- DX 100 3-D (Hinge 180mm (h) x 27mm (w) x 30 (d) to frame & 180mm (h) x 24mm (w) x 30 (d) to leaf)
- DX 101 3-D with RC2 option (Hinge 180mm (h) x 30mm (w) x 30 (d) to frame & 180mm (h) x 30mm (w) x 30 (d) to leaf)
- DX 102 3-D (Hinge 180mm (h) x 30mm (w) x 30 (d) to frame & 180mm (h) x 24mm (w) x 30 (d) to leaf)
- DX 200 3-D (Hinge 235mm (h) x 30mm (w) x 35 (d) to frame & 235mm (h) x 28mm (w) x 35 (d) to leaf)
- DX 200 3-D with RC2 option (Hinge 235mm (h) x 30mm (w) x 35 (d) to frame & 235mm (h) x 28mm (w) x 35 (d) to leaf)

- DX 300 3-D with RC2 option (Hinge 270mm (h) x 30mm (w) x 35 (d) to frame & 270mm (h) x 28mm (w) x 35 (d) to leaf)

When fitted the above assessed concealed hinges shall include the same intumescent protection as tested with the Bartels Systembeschlage GmbH Pivota® DX 300 3-D in WF323822. (2mm (t) Lorient Polyproducts Limited, Interdens® applied to all concealed faces of each hinge blade).

The position of the hinges within the leaf thickness shall be as tested, at 4mm from the opening face of the leaf.

The assessment of the alternative Bartels Systembeschlage GmbH Pivota® concealed hinges is on the basis that the DX 300 3-D and DX 101 3-D have been tested and that the assessed concealed hinges are of dimensions between the tested sized, with only a variation to functionality.

Alternative Simonswerk Tectus concealed hinges:

- Tectus 526 3D (Hinge 155mm (h) x 26mm (w) x 33 (d) to frame & 155mm (h) x 26mm (w) x 36 (d) to leaf)

When fitted the above assessed concealed hinges shall include the same intumescent protection as tested with the TECTUS TE 527 3D in WF348445/R Issue 2 (1mm (t) Lorient Polyproducts Limited, MAP or Interdens ® applied to all concealed faces of each hinge blade).

The assessment of the alternative concealed hinges is on the basis that the TECTUS TE 527 3D has been tested in test WF348445/R Issue 2 and that the assessed concealed hinge is of the same dimensions as tested and the materials are now of die cast stainless steel rather than zinc-plated mild steel. This variation is not expected to reduce the fire resistance performance and therefore is permitted.

Based on the test evidence the above tested and assessed concealed hinges are permitted for use with the doorset design subject to the following parameters:

Frame option: 1

Configurations: LSASD, ULSASD, LSADD, ULSADD

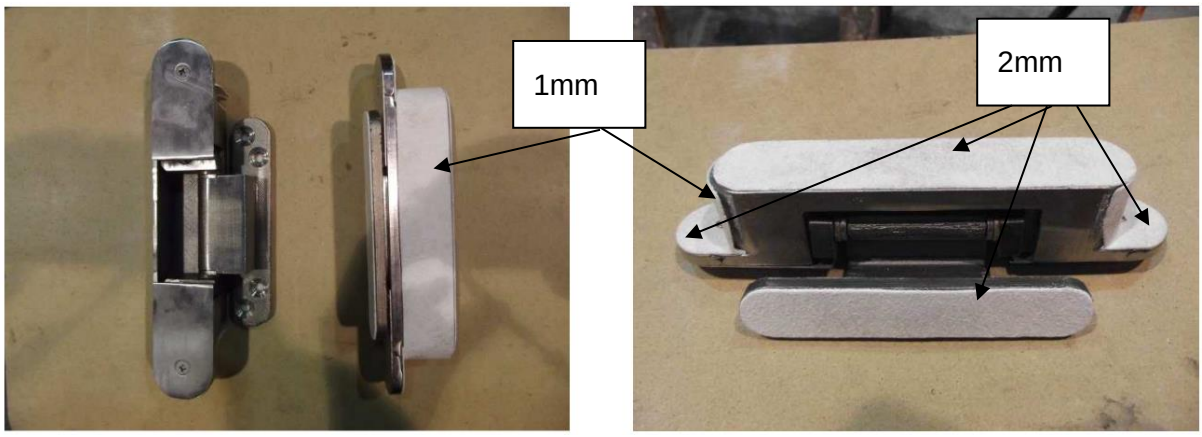
- Leaves less than 2206mm (h) must be hung on the minimum number of hinges as given in the table above.
- Leaves of 2206mm (h) or greater must be hung on either 3 hinges or the minimum number of hinges as given in the table above, whichever number is greater for the selected hinge.
- Regard should be paid to the maximum door mass permitted and it is permitted to increase the number of hinges above the assessed minimum quantity where required up to a maximum of 4.
- Intumescent protection to the concealed hinges used must be as tested and identified within the table above.
- Intumescent protection to the concealed hinges used must be as tested and identified within the table above. When the selected concealed hinge is Cairney Hardware SOSS, the leaf perimeter edge intumescent may be either of the options specified.
- When a concealed hinge is fitted with Frame 1 and being used with 2No 15mm x 4mm perimeter intumescent seals, the frame intumescent must be one of the following tested intumescent seals when using one of the identified concealed hinges:
    - Halspan SLS
    - ISL Therm-A-Seal
    - Lorient LP1504
    - Pyroplex

Hinge positions shall meet the following specification:

Element		Specification	
Hinge positions:	If 2 hinges are required:	Top:	100 –150mm from the head to top of the hinge
		Bottom:	120 – 323mm from the foot of leaf to the bottom of the hinge
	If 3 hinges are required:	Top	100 –150mm from the head to top of the hinge
		2nd	Centrally fitted between top and bottom hinges
		Bottom	100 - 150mm from the foot of leaf to bottom of the hinge
	If 4 hinges are required:	Top	100 -120mm from the head to top of the hinge
		2nd	2nd hinge 200 - 250mm from the top hinge
		3rd	3rd hinge equally spaced between 2nd and bottom hinges
		Bottom	100 - 120mm from the foot of leaf to bottom of the hinge

10.6.3.1 Royde and Tucker HC605 intumescent protection

The following photographs show the intumescent protection used with the HC605 in test CFR1711241:



10.6.4 Concealed Hinges – Frame 2

The concealed hinges detailed in the following section have been successfully tested with Prima 60 in conjunction with a Beech frame:

Test Evidence (Tested configuration)	Hinge (Dimensions)	Intumescent Protection	Perimeter Intumescent (Specified in Section 4.5)
FRR-2110/1497 (LSASD – Beech frame)	Simonswerk TECTUS TE 340 3D (Hinge 160mm (h) x 28mm (w) x 31 (d) to frame & 33.5 (d) to leaf)	2mm (t) Hafele, MAP, 924.17.197, applied to all concealed faces of each hinge blade.	Intumescent specification to be as detailed within section 4.5 specification – A/28 & F/29
FRR-2110/1498 (LSADD – Beech frame)			

In addition to the tested and permitted concealed hinges detailed above the following alternative concealed hinges are permitted for use with Frame 2:

Alternative Simonswerk Tectus concealed hinges:

- Tectus 526 3D (Hinge 155mm (h) x 26mm (w) x 33 (d) to frame & 155mm (h) x 26mm (w) x 36 (d) to leaf)
- Tectus 527 3D (Hinge 155mm (h) x 26mm (w) x 33 (d) to frame & 155mm (h) x 26mm (w) x 36 (d) to leaf)

When fitted the above assessed concealed hinges shall include the same intumescent protection as tested with the TECTUS TE340 3D in FRR-2110/1497 (2mm (t) Hafele, MAP, applied to all concealed faces of each hinge blade).

The assessment of the alternative concealed hinges is on the basis that the TECTUS TE 340 3D has been tested in test in test FRR-2110/1497 and that the assessed concealed hinges are of reduced dimensions, with materials of die cast stainless or zinc-plated mild steel. These variations are not expected to reduce the fire resistance performance and therefore these alternatives are permitted.

Based on the test evidence the above tested and assessed concealed hinges are permitted for use with the doorset design subject to the following parameters:

Frame option: 2

Configurations: LSASD, LSADD

- When a concealed hinge is fitted with Frame 2, the leaf perimeter edge intumescent must be as detailed within section 4.5 specification – A/28 & F/29.
- A minimum of 4 hinges is required.
- The frame must be fitted with a stop of minimum 15mm.
- Intumescent protection to the concealed hinges used must be as tested and identified within the table above.

Hinge positions shall meet the following specification:

Specification	
Top	100-150mm from the head to top of hinge
2nd	200mm from top hinge
3rd	Equispaced between between 2nd and bottom hinge
Bottom	100 - 150mm from the foot of leaf to bottom of hinge

10.6.5 Pivot sets

Pivots are permitted with floor springs and concealed transom closers where this is permitted within sections 10.7.4 and 10.7.5.

The following pivot set is only permitted with the Geze Boxer P 2-4 concealed overhead closer, where permitted in the table in section 10.7.3.

Test Reference	Manufacturer & Product Reference	Intumescent Protection
CFR2007291	Bottom Pivot – Geze TS137A Bottom Strap – Geze Door rail model C TS36/184 Top pivot hinge – Geze boxer adjustable pivot hinge model C	Bottom Strap – BASF Wolman Interdens® 1(t) lines all surfaces of the rebate Top Pivot – 1(t) Geze Intumescent pack graphite to all faces of the top pivot hinge

Other than specified above, pivots are not permitted unless specifically detailed with particular items of hardware.

10.7 Doorset Self Closing

Doorset automatic self-closing can be provided by:

- Overhead face fixed closers
- Concealed jamb mounted closers
- Concealed overhead closers
- Floor springs with top pivots and bottom straps
- Concealed transom mounted closers

Automatic doorset self-closing devices such as offset pivots used with floor springs are not considered acceptable for use with the Prima 60 doorset range.

10.7.1 Overhead Face Fixed Closer

The table below details a selection of tested overhead face-fixed closers that are approved.

Element	Manufacturer & Product Reference
Overhead face-fixed closers	• Halspan Limited – Halspan 6000 Eco Closer (CLR-AGN-100) (CFR 2211141)
	• Halspan 6100 Cam action closer (WF520064 A/B P60)
	• Halspan – 9000 Series Power closer (WF523941/R)
	• Halspan – 9100 series Cam Action Door Closer (CFR2103161)
	• Dorma door controls TS83 (RF07141)
	• Dorma TS73V/RA (TB 197 - 1B&2B)
	• Dorma – TS-Profil (WF189639)
	• Dorma Kaba – TS92G EMF with G-EMF guide rail and G-EMF angle bracket (WF379042)
	• Dorma – Dorma TS 93 B EN 5-7 with GN slide Channel (WF198681)
	• Dorma Ltd – TS72 (CFR1711241)
	• Dorma UK Limited TS68 (CFR1708031)

	• Dormakaba TS71 (BMTFEP16037)
	• Briton 121 CE (WF323822)
	• Hoppe (UK) Ltd AR3500MSE (WF331430)
	• Geze – TS2000V (BMT14102)
	• Geze TS2000 (BMTFEP16037)
	• Rutland TS3204 (BMTFEPF14012B)
	• Assa Abloy DC250 door closer DC194 guide rail DC194 mounting plate (WF437975/LR)

Alternatively, components with the following specification are also deemed acceptable.

- Certifire approved overhead face-fixed closers for 60-minute fire resistance applications on 54mm thick timber door and timber frames.

Note:

It must be ensured that the closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.

10.7.2 Frame Jamb Mounted Closer

These items are suitable in the following applications only:

Frame option: 1

Configurations: LSASD, ULSASD, LSADD, ULSADD

The table below details the tested concealed jamb mounted closers that are approved.

Element	Manufacturer & Product Reference
Jamb mounted concealed closer	• Perko Powermatic R100 (WF508198) • Forend: 140mm (h) x 28mm (w) Body: 178mm (d)
	• Perko Powermatic R108 (WF401347) • 151mm (h) x 32mm (w) x 178mm (d)

The Perko-Powermatic R100 and R108 are permitted for use with the main part of the closer body recessed within the centre of the leaf thickness and subject to meeting the following requirements:

- Recessing for closers shall result in a tight fit, allowing for any intumescent protection.
- The fixings supplied by the closer manufacturer must be used.
- The closer units shall not be fitted higher than 1100mm above the bottom edge of the leaf.
- Intumescent Protection:
  - The above detailed jamb mounted concealed closers shall be fitted with intumescent protection which comprises 2mm Interdens® to all concealed faces.
- The mortice cut out must be no closer than 10mm to any glazing aperture or feature groove (WF330214 Issue 2).

Note:

It must be ensured that the jamb mounted concealed closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.

10.7.3 Concealed Overhead Self Closing Device

The tables below detail the tested and assessed concealed overhead closers permitted within the Halspan Prima 60 doorset design, with the body of the concealed closer morticed into the top of the door leaf and the track morticed into the frame head.

Concealed overhead closers are not permitted within flush overpanels.

In all instances the maximum leaf dimensions for all doorsets which include concealed overhead closer must not be greater than:

- Height: 2400mm.
- Width: 1060mm

Latched & Unlatched Single Acting Configurations					
Permitted Frame Option(s)		**Frame 1 Only**			
Manufacturer & Product Reference (Test Reference)	**Intumescent Protection**	**Closer Body Dimensions**	**Closer Slide Arm Dimensions**	**Perimeter Intumescent Specification (see section 4.5)**	**Minimum Head Stop Height (mm)**
Dormakaba ITS96 EN2-4 with G96N Arm and Slide channel (WF523824/R)	1mm Interdens® around body 2mm Interdens® around slide channel	Forend 338mm (l) x 3mm (h) x 32mm (w) Body 242mm (l) x 42mm (h) x 32mm (w)	440mm (l) x 20mm (h) x 31mm (w)	Any permitted single acting seal configuration providing: They include 2No. 15mm (w) x 4mm (t) seals applied 10mm apart centrally within the frame reveal & 1No. 15mm (w) x 4mm (t) seal applied centrally within the leaf head. Only the seal configurations manufactured by the following manufacturers are permitted: • Halspan	20
Dormakaba ITS 96 FL EN3-6 with G96 N20 arm and slide channel (WF379041 B)		Body 476mm (l) x 51mm (t) x 39.5mm (w)	440mm (l) x 12mm (h) x 20mm (w)		

Dormakaba ITS96 EN3-6 with G96EMF arm and slide channel (WF379042 B)		Body 256mm (l) x 51mm (t) x 39.5mm (w)	527mm (l) x 30 mm (w) x 31mm (d)	• Pyroplex • Lorient • ISL Where the intumescent specification defined within section 4.5 only includes 2No. 15mm (w) x 4mm (t) seals applied 10mm apart centrally within the frame reveal, these specifications may be utilised providing the leaf head also includes an additional 1No. 15mm (w) x 4mm (t) seal of the same type applied centrally within the leaf head.	
Dormakaba ITS 96 size EN2-4 with G96N20 armset (WF350451 A)		Body front plate 338mm (l) x 32mm (w)	440mm (l) x 12mm (h) x 20mm (w)		
Halspan Limited 6200 Eco Concealed closer CCR-CCL-024 **BOM-CCL-024** (Including SLS-PAD-130 intumescent) (CFR2209201)	Halspan SLS-PAD-130 Ammonium phosphate 2mm (t) encasing closer and track bodies	Forend: 3mm (h) x 285mm (w) x 32mm (d) Body 54mm (h) x 215mm (w) x 32mm (d)	20mm (h) x 460mm (l) x 30mm (d)		15
Halspan 9200 Concealed closer CLR-CCL-102 (CFR2105131 and CFR2209201) **BOM-CCL-025** (Including SLS-PAD-131 intumescent)	2mm (t) Halspan SLS-PAD-131, ammonium phosphate encases closer body and track casing and to both sides of friend and to remainder of aperture beside forend with 89mm x 33mm	Body 260mm (l) x 37 (w) x 59mm (h) Forend 330mm x 37mm x 3mm	460mm (l) x 30 (w) x 20 (h)		15

Boss Door Controls Ltd Concealed overhead door closer Boss ITS6.224 EN2-4 (CFR1909241 Revision 1)	Boss FD60 intumescent pack for ITS6224, 1mm x 98mm x 40mm to top of forend and 1mm (t) to all concealed faces of closer body. 2mm (t) to all rear faces of closer track	Forend: 298mm (l) x 32mm (w) Body: 210mm (l) x 51mm (h) x 32mm (w)	460mm (l) x 19mm (h) x 29mm (d)		15
Rutland ITS 11204 concealed closer (BTC 16702F)	1mm Therm-A-Flex on top of face plate at head of leaf 2mm Therm-A-Flex all vertical sides of rail	Body 53mm (h) x 299mm (w) x 31mm (d)	Rail: 460mm (l) x 30mm (w)		25

Latched Single Acting Configurations – Enhanced Intumescent Specification					
Permitted Frame Option(s)		**Frame 1 or 2 Only**			
Manufacturer & Product Reference (Test Reference)	**Intumescent Protection**	**Closer Body Dimensions**	**Closer Slide Arm Dimensions**	**Perimeter Intumescent Specification (see section 4.5)**	**Minimum Head Stop Height (mm)**
Geze-Boxer (FRR-2110/1497) (FRR-2110/1498)	Hafele/Lorient protection kit 2mm (t) MAP around closer body in leaf and around guide rail in frame	Forend 270mm (l) x 3mm (h) x 32mm (d) Body 42mm (h) x 240mm (l) x 32mm (w)	Rail: 440mm (l) x 12mm (h) x 20mm (w)	Any permitted latched single acting seal configuration providing: They include 2No. 15mm (w) x 6mm (t) seals applied 15mm apart centrally within the frame reveal & 1No. 15mm (w) x 4mm (t) seal applied centrally within the leaf head. Only the seal configurations manufactured by the following manufacturers are permitted: • Lorient	15

Double Acting Configurations				
Permitted Frame Option(s)		**Frame 1 Only – Additionally the frame head must be increased to 120mm (d) x 45mm (h)**		
Manufacturer & Product Reference (Test Reference)	**Intumescent Protection**	**Closer Body Dimensions**	**Closer Slide Arm Dimensions**	**Perimeter Intumescent Specification (see section 4.5)**
Geze Boxer 2-4 (CFR2007291 Revision 2) When Double acting this concealed overhead closer must be fitted with the tested pivot set, see section 10.6.5.	Geze Boxer intumescent pack 1mm (t) graphite to all faces of closer and track	Forend 4mm (h) x 340mm (l) x 33mm (w) Body 42mm (h) x 240mm (l) x 32mm (w)  	Track: 440mm (l) x 31mm (h) x 20mm (w)	Any permitted double acting seal configuration providing: They include 2No. 15mm (w) x 4mm (t) seals applied centrally within the frame reveal. Only the seal configurations manufactured by the following manufacturers are permitted: • Lorient Where the intumescent specification defined within section 4.5 only includes 2No. 15mm (w) x 4mm (t) seals applied 10mm apart centrally within the frame reveal, these specifications may be utilised providing the leaf head also includes an additional 1No. 15mm (w) x 4mm (t) seal of the same type applied centrally within the leaf head and the distance between the two seals within the frame reveal is increased to 20mm in the frame head.

Some of the above assessed concealed closers have been successfully tested using a 54mm timber based doorset design. The assessment is on the basis that other concealed closers of similar sizes have been successfully tested with the Prima 60 doorset design with comparable intumescent specifications.

Based on the test evidence, the above tested and assessed concealed closers are permitted for use with the doorset design subject to the following parameters:

- The details identified in the table above for the following items must be followed for the selected concealed overhead closer, and is based on the tested arrangements:
  - Frame option(s).
  - Permitted configuration(s).
  - The frame must be fitted with a head stop of the minimum size, where required.
  - Intumescent protection to the concealed closer.
  - Leaf perimeter intumescent details.
- It must be ensured that the concealed overhead closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.
- The dimensions of the concealed overhead door closer must not exceed the dimensions given within the tables above.

10.7.4 Floor Spring Self Closing Device

Based on the test evidence the following floor springs in conjunction with their tested pivot set are permitted for use with the doorset design subject to the following parameters:

- The details identified in the tables below for the following items must be followed for the selected floor springs, and is based on the tested arrangements:
  - Frame option(s)
  - Permitted configuration(s)
  - Leaf perimeter intumescent details.
  - Intumescent protection to the pivot set.
- It must be ensured that the floor spring closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.
- The dimensions of the floor spring door closer must not exceed the dimensions given within the tables below where identified.
- Transom overpanels or fan lights are not permitted.

Permitted Frame Option (Test evidence)	Permitted Configuration	Perimeter Intumescent Specification (see section 4.5)
1 (RF02018 Rev A) (WF379041)	DASD DADD	B/18 & G/18 plus additional 10mm x 4mm x 130mm long Pyroplex fitted alongside each edge of the top pivot (2No. per top pivot) in frame reveal B/19, G/19
1, 2 (FRR-2102/4628A)	DASD DADD	B/30 & G/30 except that additionally 2No. 15mm x 4mm LP1504 must be fitted centrally and 8mm apart to the bottom edge of the leaf.
1, 3 (WF509421)	DASD DADD	B/15 & G/15 except that additionally 1No. 25mm x 4mm LP2504 must be fitted centrally to the bottom edge of the leaf.
1, 2 (FRR-2009/2351)	DASD DADD	B/26 & G/26

The floor spring self closing devices with their associated pivots detailed in the following sections have been successfully tested with the Prima 60 door blank.

Test Evidence	Items	Hardware Intumescent Protection
WF509421	Halspan Limited 9300 floor spring – power size 4 9300 pivot set	Halspan 9300 pivot set intumescent kit 2mm graphite under top pivot forend, mortice for top strap, and mortice for bottom strap
	Halspan Limited 6300 floor spring – power size 3 6300 pivot set	Halspan 6300 pivot set intumescent kit 2mm graphite under top pivot forend, mortice for top strap, and mortice for bottom strap
RF02018 Rev A	Dorma BTS80F floor spring Dorma top strap, bottom strap and top pivot • Floor Spring: 341mm long x 60mm high x 78mm wide • Top strap: 335mm long x 80mm wide • Bottom strap: 235mm long x 25mm wide • Top pivot: 130mm long x 35mm wide	2mm Dorma Graphite protection kit around top strap, pivot and bottom strap
WF379041	Dorma BTS75R Dorma top centre 8066, and top and bottom straps (of 235mm long) Floor Spring: • Foreplate: 285mm long x 105mm wide x 1.5mm deep • Body: 275mm long x 82mm wide x 50mm deep	2.5mm Dorma Interdens® gasket set to all faces of mortices in leaf and frame for top centre and top and bottom straps.

Based on the test evidence the above the tested floor spring closers are permitted for use with the doorset design.

Alternatively, components with the following specification are deemed acceptable.

- Certifire approved floor spring self-closers with their specific associated pivot systems for 60-minute fire resistance applications on 54mm thick timber door and timber frames, providing the Certifire certificate is followed entirely.

10.7.5 Concealed Transom closer

Based on the testing listed within this section, these items are suitable in the following applications only:

Frame option: 1, 3

Configurations: DASD, DADD - Transom overpanels or fan lights are not permitted.

The door leaf must be lipped on all edges with hardwood as detailed in section 5.3.1.

When fitting concealed transom closers with their associated pivots the below specifications for the frame and perimeter intumescent must be met.

Permitted Frame Option (Test evidence)	Minimum frame cross section dimensions	Perimeter Intumescent Specification (see section 4.5)
1 (WF504390)	The head of the frame shall be no less than 125mm (d) x 68mm (h)	B/10 & G/10 except that additionally 2No. 15mm x 4mm Pyroplex 8700 must be fitted centrally and 10mm apart to the bottom edge of the leaf.
1, 3 (WF509420)		B/1 & G/1 except that additionally 1No. 25mm x 4mm LP2504 must be fitted centrally to the bottom edge of the leaf.

The concealed transom closer detailed in the following sections has been successfully tested with the Prima 60 door blank and is therefore suitable for use within the scope stated herein.

Test Evidence	Items	Hardware Intumescent Protection
WF504390 WF509420	Dormakaba - Transom closer: • RTS80EMB power size 4 Foreplate: 360mm long x 108mm wide x 3mm deep Body: 314mm long x 70mm wide x 58mm deep • RTS87 EN1-4 • RTS87EMB power size 4 Foreplate: 320mm long x 108mm wide x 3mm deep Body: 265mm long x 72mm wide x 51mm deep Fitted with Dormakaba: Top strap 8530 Bottom pivot 7475AX / 7475 Bottom Strap 7421	Dormakaba RTS87/RTS80 intumescent kit comprising: 2mm graphite to body and under plate of Transom Closer 2mm graphite to top pivot 2mm graphite to top strap 1mm Interdens® to mortice bottom strap and 2mm x 175mm x 21mm Interdens® to visible face of bottom strap Floor pivot - None

10.8 Bolts

10.8.1 Flush Bolts

The table below details a selection of the tested flush bolts that are approved.

Product Reference (Test evidence)	Size (mm)
Newstar FB200 (F14095)	203x38x19
Halspan – LCK-MSC-205 (CFR1909241)	203x38x19
Carlisle Brass (sunk slide) AA79CP (RF13167)	101x17x3
Hafele 911.62.335 (FRR-2110/1498)	151x19x34
Simplex SDB 108 dust proof socket SDS 101 (FRR-2102/4628A)	200x19
Zoo Flush bolt (F16037)	200x20

The testing included a Woodex frame (F16037) and Hardwood and Beech frames.

In addition to the tested and permitted flush bolts detailed above, flushbolts which meet the following requirements are permitted.

- Flush bolts must be steel.
- The following maximum dimensions are not exceeded:
    - 203mm long x 20mm deep x 38mm wide.

On the basis of the testing, the tested and alternative flush bolts are suitable in the following applications only:

Frame options: All frame types

Configurations: LSADD (Optionally ULSADD & DADD)

In all cases the following scope must be complied with:

- Flush bolts must be fitted centrally within the thickness of the secondary leaf at the meeting edge.
- Flush bolts may be fitted to only the top of the leaf or alternatively to both the top and bottom of the leaf.
- The components are fitted relative to the meeting edge intumescent strips in one of the following ways:
    - Opposing the leaf edge fitted with intumescent strips such that no interruption occurs in either leaf (primary or secondary).

- Where there are intumescent strips fitted to both the primary and secondary leaf meeting edges a minimum of 2No. intumescent strips shall be in the leaf opposing the flush bolt.

- Intumescent Protection: All edges of the mortice of the keep and body must be protected with intumescent gaskets as specified in section 10.2.
- Flush bolts fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The above flush bolts are not permitted in conjunction with equal rebated meeting edges or rebated flush overpanels.
- The mortice to facilitate the flush bolt must be as tight to the mechanism as is compatible with its operation and the inclusion of intumescent protection.

10.8.2 ANSI Z005 Automatic Flush Bolt

The table below details the tested automatic flush bolt that is approved.

Manufacturer & Product Reference	Overall Size of Product (mm)	Intumescent
ANSI – Z005 Auto (WF508198 B)	Lock case 190x50x30 Top and bottom plate 218 x 27 x 2 Meeting edge plate 215x25x3	2(t) Interdens® around the lockcase, Top & bottom end plate and forend plate

On the basis of the testing, the ANSI Z005 is suitable for use within the following scope:

Frame options: 1

Configurations: LSADD (Optionally ULSADD & DADD)

In all cases the following scope must be complied with:

- The ANSI Z005 must be fitted centrally within the thickness of the secondary leaf at the meeting edge.
- The ANSI Z005 may be fitted to only the top of the leaf or alternatively to both the top and bottom of the leaf.
- The ANSI Z005 must be fitted relative to the meeting edge intumescent strips in the following way:
    - Intumescent strips must be fitted to both the primary and secondary leaf meeting edges and a minimum of 2No. intumescent strips shall be in the leaf opposing the ANSI Z005.
- The Intumescent protection must be as tested and identified within the table above.
- ANSI Z005 bolts fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The above ANSI Z005 is not permitted in conjunction with equal rebated meeting edges or flush overpanels.

- The mortice to facilitate the flush bolt must be as tight to the mechanism as is compatible with its operation and the inclusion of intumescent protection.

10.8.3 Surface Mounted Face Fixed Bolts

The table below details a selection of the tested surface mounted face fixed bolts that are approved.

Frame options: All frame types

Configurations: All configurations

Manufacturer & Product Reference (Test evidence)
• Halspan Limited – BLT-BZA-100 (CFR2211141)
• Royde & Tucker - Barza bolt B151-300-220 (CFR1809241)
• Royde and Tucker – Barza B151-200-220 (CFR 2004171)
• Carpenters Supply Co surfaced mounted 143C (RF 07141)

In addition to the above summarised tested surface mounted face fixed bolts, alternative surface mounted face fixed bolts constructed from steel, stainless steel, aluminium or bronze may be fitted, providing the dimensions are no greater than:

- 350mm long x 38mm wide (footprint).

Surface mounted face fixed bolts may be applied to the horizontal or vertical edges of the doorset providing the components are fitted at least 40mm from the corners of the leaf.

Intumescent protection is not required where both the bolt and keep are face fixed.

Where a keep is required to be recessed into the frame (as tested in CFR1808311), the keep shall be protected with 1mm (t) graphite based intumescent.

10.8.4 Flush Bolts with rebated meeting edges

The table below details the tested flush bolt that is approved with rebated meeting edges.

Frame options: 1, 2

Configurations: LSADD (Optionally ULSADD)

Successful test FRR-2010/2942 included flush bolts fitted within an equally rebated meeting edge. The flush bolts were fitted to the top and bottom of the leaf.

The table below details the tested flush bolt that is approved.

Manufacturer & Product Reference (Test evidence)
• Eurolever SS1932 with SS1934 dust proof socket (FRR-2010/2942)

In addition to the tested and permitted flush bolt detailed above, flushbolts which meet the following requirements are permitted.

- Flush bolts must be steel.
- The following maximum dimensions are not exceeded:
    - 225mm long x 20mm deep x 22mm wide.

On the basis of the testing, the tested and alternative flush bolts are suitable in the following applications only:

In all cases the following scope must be complied with:

- Flush bolts fitted within rebated meeting edges shall not be applied when it is required to remove timber from the upstand of the rebate to facilitate their application.
- Flush bolts may be offset by a maximum of 11mm from the centreline of the door thickness to the centreline of the forend. This is based on successful testing undertaken in FRR-2010/2942 which included an offset flushbolt and a rebated meeting edge.
- Flush bolts may be fitted to only the top of the leaf or alternatively to both the top and bottom of the leaf.
- Intumescent Protection: All edges of the mortice of the keep and body must be protected with intumescent gaskets as specified in section 10.2.
- Flush bolts fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The above flush bolts are not permitted in conjunction with flush overpanels.
- The mortice to facilitate the flush bolt must be as tight to the mechanism as is compatible with its operation and the inclusion of intumescent protection.
- Perimeter intumescent seals:
    - Intumescent Specification Reference F/19, G/19 and F/25 (see section 4.5)

10.8.5 Royde & Tucker Anza surface mounted bolt

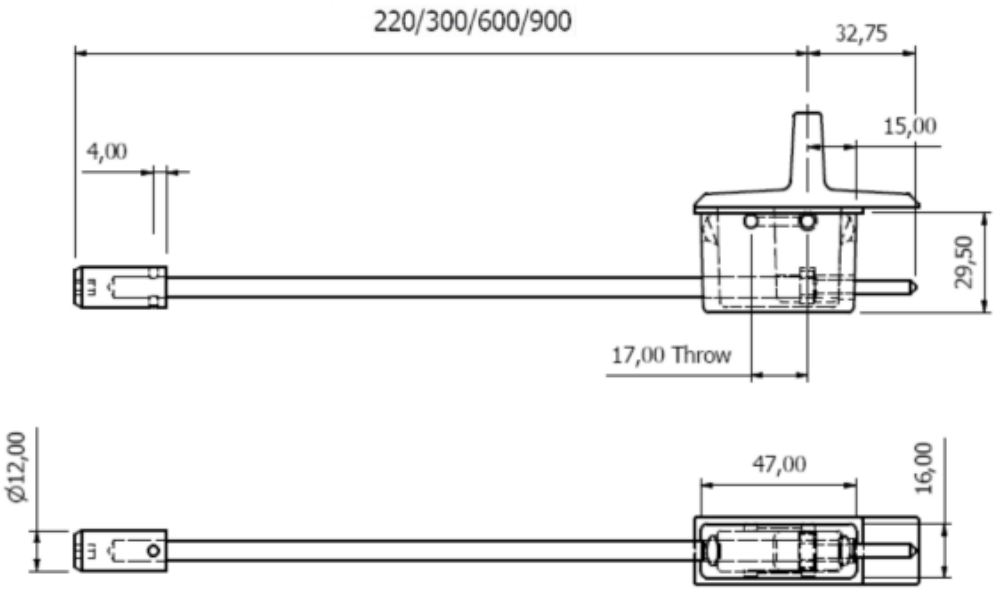
ANZ-220-FD has been successfully tested in WF504819 with the bolt activator in the face of the leaf, and is suitable for use within the following scope:

- Frame: 1, 3 & 4 only
- Door configuration: LSADD, ULSADD
- Intumescent protection:

  (a) 1mm thick interdens – Fitted to all sides of the mortice in the leaf face, under the guide plate in the leaf head and under the bolt keep in the frame head. This is supplied with the bolts from Royde & Tucker.

  (b) Minimum of 2No seals of minimum size 15mm x 4mm, fitted 10mm apart centrally in the frame reveal.

- The rebate in the leaf face for the operating handle must not be closer than 190mm to the top or bottom of the leaf or closer than 40mm to the meeting edge of the leaf.
- The bolt fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The longer length product variants ANZ-300-FD, ANZ-600-FD and ANZ-900-FD are also permitted as the bolt activator will be located further away from the top and bottom of the door leaf.



10.8.6 Royde & Tucker Anza flush mounted bolt

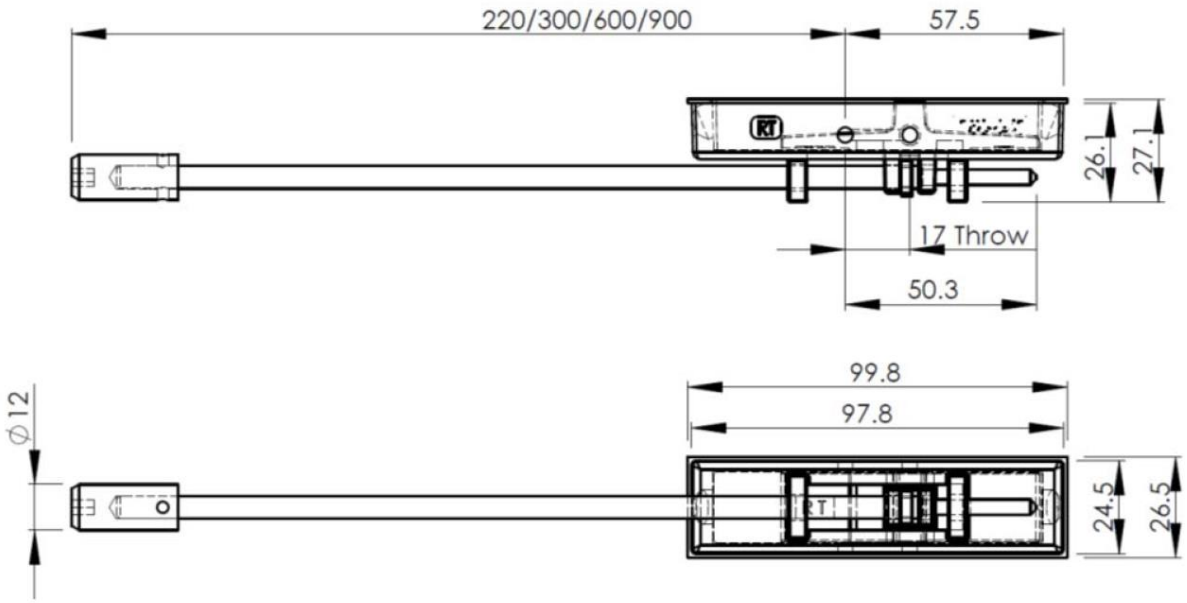
ANZ/R-300-FFD has been successfully tested in WF504819 with the bolt activator in the meeting edge, and is suitable for use within the following scope:

- Frame: 1, 3 & 4 only
- Door configuration: LSADD, ULSADD
- Intumescent protection:

  (a) 1mm thick interdens – Fitted to all sides of the mortice in the leaf edge, under the guide plate in the leaf head and under the bolt keep in the frame head. This is supplied with the bolts from Royde & Tucker

  (b) Minimum of 2No seals of minimum size 15mm x 4mm, fitted 10mm apart centrally in the frame reveal.

- The rebate for the operating handle recessed into the leaf edge must not be closer than 170mm to the top or bottom of the leaf and must be positioned centrally in the leaf edge.
- The bolt fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The longer length product variants ANZ/R-600-FFD and ANZ/R-900-FFD are also permitted as the bolt activator will be located further away from the top and bottom of the door leaf.
- The shorter length product variant ANZ/R-220-FFD is also permitted on the basis that the fire resistance performance has been demonstrated on the longer product variant as well as the fact that the doorset design has been proven with flush bolts which interrupt the leaf edge further than required within the ANZ/R-220-FFD.



10.9 Cable Loops & Cableways

Where cable ways are required within the doorset design no recessing of frame or leaf is permitted except the item of hardware and the inclusion of a single hole to facilitate cabling which is no greater than Ø10mm. The hole must be abutting the element of hardware which it is required to facilitate and is only permitted when the frame to which the leaf is hung is adjacent to the supporting structure.

10.9.1 Cable Loops

The table below details the tested and assessed cable loops that are approved.

Test Evidence (Tested configuration)	Item & dimensions (mm)	Hardware Intumescent Protection	Minimum Perimeter Intumescent (Specified in Section 4.5)
CFR2004171 (LSADD) WF523824/R (LSASD)	Dormakaba KU260 Forend 290 long x 24 wide	SLS-PAD-113 1mm mono-ammonium phosphate to all concealed faces of cable loop body and to base of inside	2No. 15mm wide x 4mm thick seals fitted centrally within the frame reveal 10mm apart. Intumescent seal specification shall meet the criteria given in the text below this table and correspond to the intumescent permitted in section 4.5.
WF415117 (LSASD)	Gianni Industries Inc DL-500 Forend of body 292.5 x 25	1mm Interdens® to all concealed faces of cable loop body	
	Gianni Industries Inc DL-417ST Forend of body 290 x 24	1mm Interdens® to all concealed faces of cable loop body	
CFR2211141 (LSADD) WF508668 (LSASD)	Assa Abloy EA280 Body 324 x 24	SLS-PAD-113 1mm mono-ammonium phosphate based intumescent to all concealed faces of cable loop body or 2mm MAP to all concealed faces of cable loop body	
WF364240 (LSASD)	Abloy OY EA281 Body 543 x 24 wide x 22 deep	Bedded on 2mm of Interdens®	

Based on the test evidence, which was all conducted with Prima 60 in conjunction with Hardwood frames, the above tested and assessed cable loops are permitted for use with the doorset design subject to the following parameters:

Frame option: 1

Configurations: LSASD, ULSASD, LSADD, ULSADD

- When a cable loop is fitted, the leaf perimeter edge intumescent must be located into the frame reveal along the hanging edge.
- In all instances the location of the bottom of the cable loop body forend must be between 400–1100mm from the floor level.
- Intumescent protection to the cable loop used must be as tested and identified within the table above.
- The cable loop body may be rebated into the leaf edge or alternatively the frame reveal, in both instances the positioning shall remain central to the thickness of the leaf.
- When the cable loop body is rebated into the frame reveal, the frame intumescent must be one of the following tested intumescent seals when using one of the identified cable loops:
    - Halspan SLS
    - Pyroplex
    - STS

10.9.2 Cableways

Cableways through the leaf have been tested and are therefore permitted in the 4 methods detailed in the following sections in conjunction with the cable loops in section 10.9.1.

Cableways are only permitted at the perimeter of a glazed aperture in a leaf when fitted as detailed in Method 4 (Section 10.9.2.4). Except when reaching a glazed aperture at a perpendicular angle to the glazed aperture, cableways must be a minimum of 80mm from any apertures within the leaf e.g. glazing, air transfer grilles or letter plates etc.

Grooves cannot be located within 100mm of any cableway.

10.9.2.1 Cableway Method 1

This item has been successfully tested in test reference WF523824/R with associated hardware. Cableway method 1 is therefore suitable for use within the following scope:

Configurations: LSASD, ULSASD, LSADD, ULSADD

Maximum Leaf Size: 2440mm (h)

- A hole drilled centrally through the leaf of maximum 10mm diameter.
- The cable for the electronic closing/latching mechanisms must be no more than 3.5mm smaller in diameter than the hole through the leaf unless wrapped in 1mm graphite intumescent.
- The cable must be PVC encased.
- The hole must be located no higher than 1100mm from the threshold.

10.9.2.2 Cableway Method 2

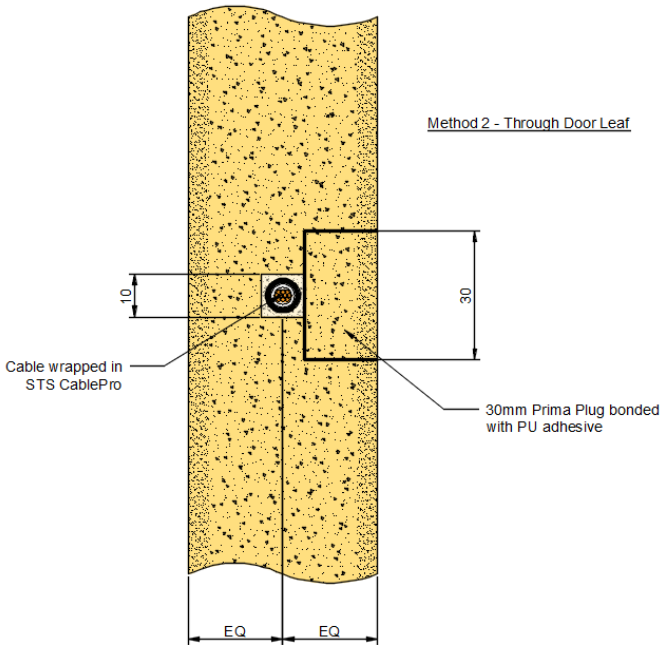
Method 2 comprises a 10mm high x 10mm wide horizontal channel through the full width of the leaf, central to the leaf thickness and is concealed with an infill of the leaf core material.

This method has been successfully tested in test reference CFR2211141 (Right Hand doorset) with associated hardware. Cableway method 2 is therefore suitable for use within the following scope:

Configurations: LSASD, ULSASD, LSADD, ULSADD

Maximum Leaf Size: 2440mm (h)

- The hole must be located no higher than 1100mm from the threshold.
- Groove the face of the door core with a 10mm wide channel to a depth of 5mm below the centre of the door core, 32mm deep into the core.
- Groove the same face with a second groove 30mm wide x 22mm deep, located centrally over the first groove.
- Fit a plug into the second groove 30mm wide by 22mm deep using Prima core. The plug should run the full length of the cableway and be bonded into place using PVA or PU adhesive.
- The door core can then be lipped and calibrated in the usual manner.
- Mortice out the for the lock and drill a 10mm hole through the lipping on the opposite edge.
- The cable must be protected with 1mm STS CablePro graphite intumescent wrap.



Cableway Method 2 detail – channel through centre of leaf thickness

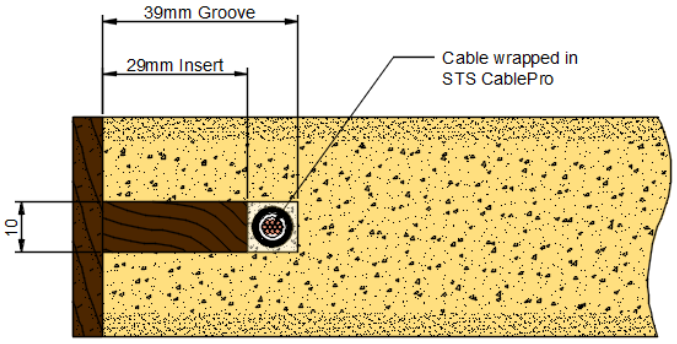
10.9.2.3 Cableway Method 3

Method 3 comprises a 10mm high x 10mm wide channel central to the leaf edge, running down from the hanging edge to the bottom edge of leaf, along the bottom edge to the closing edge/meeting edge, and up along the closing edge/ meeting edge to the latch/lock location, and concealed with Sapele under the lippings.

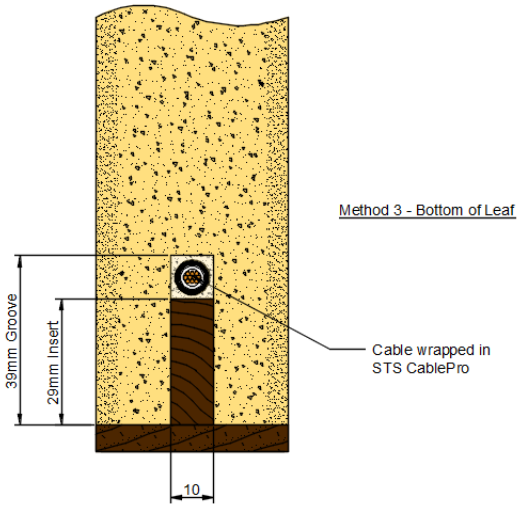
This method has been successfully tested in test reference CFR2211141 (Right Hand doorset) with associated hardware. Cableway method 3 is therefore suitable for use within the following scope:

Configurations: LSASD, ULSASD, LSADD, ULSADD

- Groove the edge of the door core with a 10mm wide channel located centrally, to a depth of 39mm (prior to the fitting of lippings). This groove should run from the lock/keep location in the closing/meeting edge, down the edge, along the bottom of the door then back up the hanging edge to the cable loop location.
- Install the cable, protected with 1mm STS CablePro graphite intumescent wrap, into the groove.
- Infill the groove with 29mm x 10mm Sapele (minimum density 640 kg/m^3), bonded in place with PU adhesive.
- When using cableway method 3, the door must be lipped on the bottom edge with a flat lipping of 6 to 12mm thick, and otherwise complying with the requirements of section 5.3.1.
- The door core can then be lipped and calibrated in the usual manner.



(A): Cableway Method 3 detail – channel through vertical leaf edges



(B): Cableway Method 3 detail – channel through bottom of leaf edge

10.9.2.4 Cableway Method 4

This method of routing a cable at the perimeter of a glazed aperture in a leaf is supported by the evidence detailed within WF523824/R.

This method shall only be utilised with Cableway Method 1 (Section 10.9.2.1).

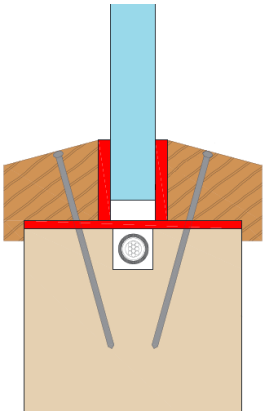
Cableway method 4 is therefore suitable for use within the following scope:

Configurations: In line with Cableway Method 1 (Section 10.9.2.1)

Maximum Leaf Size: In line with Cableway Method 1 (Section 10.9.2.1)

- Apply the routing for the cableway through the leaf horizontally and perpendicular to the glazed aperture in accordance with method 1. The entry to the glazed aperture must be a minimum of 100mm away from glazing aperture corners.
- The glazed aperture may be routed with a maximum of 10mm wide x 10mm deep channel in the lower half of the aperture in the fashion of a 'U'. The channel must be central to the thickness of the leaf.
- The glazed aperture must be glazed with glazing system 8 as defined within section 6.3. Any of the associated glass types assessed for use with this glazing system are permitted.
- The cable for the electronic closing/latching mechanisms must be no more than 3.5mm smaller in width and depth of the channel through around the lower half of the aperture unless wrapped in 1mm graphite intumescent.
- Setting blocks for the glazed aperture must span the width of the channel, without removal or compromise to the glazing system.

Below is a depiction of the permitted cableway – method 4:



10.10 Pull Handles

The table below details a selection of the tested pull handles that are approved.

Manufacturer & Product Reference (Test evidence)
• Dorma UK Ltd ZP11 630 EP (WF390174)
• Zoo Hardware Ltd – ZAAD600BS (CFR2002051)
• Simplex VSP 2025 (FRR-2107/2288)
• Zoo Hardware ZAAD425BSA (WF 523941/R)

Alternatively pull handles must be Steel, stainless steel or bronze handles and may be surface-fixed or bolted through the door leaf, providing the length is limited to 1200mm between the fixing points. If through fixed, there must be no more than 1mm clearance between the hole and stud.

The above scope of application is provided as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

10.11 Push Plates & Kick Plates

The table below details a selection of the tested push plates that are approved.

Manufacturer & Product Reference (Test evidence)
• Zoo Hardware Ltd – ZAS30RDSS (CFR2002051)
• Simplex – PPS-AE.150.1250 (FRR-2107/2288)
• Simplex - PPS-AE.100.400 (FRR 2102/4628A)
• Zoo Hardware – ZAA40CSA (WF523941/R)

Alternatively, components with the following specification are also deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specification:

- Polymeric or metal face-fixed hardware such as push plates and kick plates up to 2mm thick may be surface fitted to the doorset. 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.
- Plates may not be recessed into the face of the leaf.
- In all cases plates meeting the above specification shall not be applied under glazing beads or door stops.

10.12 Back-to-back recessed pull handles

The table below details the tested back-to-back recessed pull handles that are approved.

Manufacturer & Product Reference (Test evidence)	Overall Size of Product	Recess in leaf	Intumescent
Zoo ZAS41 (WF526042)	90mm diameter x 19mm thick	71.5mm diameter x 18mm deep	1mm MAP to the rear of the flush pull handle
Zoo ZAS10 (WF526042)	102mm high x 51mm wide x 12mm thick	83mm high x 38mm wide x 10mm deep	None

On the basis of the testing, the tested steel recessed pull handles are suitable for use within the following scope:

Frame options: All

Configurations: All

- When required the Intumescent protection must be as tested and identified within the table above.
- The recessed pull handle must be located with the centre of the item between 500mm and 1700mm above the finish floor level and no closer than 100mm to a door edge and no closer than 100mm to glazing, cableways, grooves or any hardware.
- These items may be fixed in a back-to-back arrangement or with the recessed pull handle to one face and the push plate to the other face of the leaf, face-fixed with 18 to 20mm long screws and with a recess for the pull handle as tested.

10.13 Security Viewers

Up to 2no. viewers are permitted within an individual door leaf, viewers are to be positioned no closer than 60mm to door edges and no closer than 75mm to glazed apertures or any other hardware component.

The table below details tested security viewers that are approved, in all cases the tested viewers shall include the intumescent specification which has been proven within the doorset design.

Manufacturer & Product Reference (Test evidence)	Intumescent Protection
Halspan – DOR-VWR-100 (CFR2105131) (CFR2209201)	Halspan Limited SLS-PAD-127 50 x 1mm Graphite based intumescent lining the viewer aperture
Arrone Hoppe AR539-64PC (WF380315B)	0.6mm graphite intumescent sheet wrapped around the body
Glutz – GY3505.1PC (WF504819) (WF504821)	1mm thick graphite liner
Glutz UK Limited – GY3504.F (WF507671)	45mm x 40mm x 1mm S/A graphite
Durable – DV-200 (WB 112-1B&2B)	1mm Lorient Interdens®
Eurolever SS1945 (FRR-2010/2942, FRR-2009/1221)	Eurolever XX8002EV 1mm thick mono ammonium phosphate (MAP) self-adhesive around door viewer body in leaf

Alternatively, components with the following specification are also deemed acceptable.

- Door security viewers with brass or 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 +1 mm). Lenses must be glass and the item must be protected with a tested acrylic intumescent mastic and / or a 1mm thick graphite based intumescent wrap.

10.14 Door Selectors

These items are suitable in the following applications only:

Configurations: All double leaf door configurations

These may be freely applied, provided that they are not invasive in the leaf edges or door frames and they do not interfere with the self-closing action of the door leaf. Products that are invasive are not considered within this field of application.

10.15 Air Transfer Grilles

The table below details the tested and therefore approved air transfer grilles within the doorset design.

Configurations: All configurations

Manufacturer & Product Reference (Test evidence)	Maximum Dimensions (mm)	Fixing Details	Intumescent Protection
Mann McGowan Pyrogrille 100 (WF391351)	598 w x 596 h	Fixings 75mm x 4.3mm drywall screws, nom 100mm from each corner applied through the vertical edges of the grille into the leaf.	Mann McGowan Pyromas A intumescent acrylic sealant. Cartridge gunned around the perimeter of each grille on both faces

In addition to the above detailed air transfer grille, it is possible to include a Certifire approved air transfer grille, which is approved for application in 60 minute fire resisting solid timber doorsets. In all instances the following specification must be followed:

- The aperture shall be lined with a hardwood (not Beech *fagus species*, minimum density 640kg/m^3) aperture liner which is to be 6 - 8mm thick and adhered with PU or PVA adhesive and pinned with steel pins. The steel pins shall be positioned nominally 50mm from corners, no greater than 250mm centres and positioned centrally to the aperture liner.
- The air transfer grille must be fitted centrally to the leaf thickness.
- The size of any air transfer grille shall be no greater than 602mm high x 602mm wide or 0.36m^2.
- Air transfer grilles shall be rectilinear, other shapes are not permitted.
- Air transfer grilles shall be positioned such that the centre of the grille is 500mm ±200mm from the bottom of the leaf.
- Air transfer grilles shall not be closer than 200mm from the edge of the leaf or adjacent apertures within the leaf.
- It is possible to include a surface mounted ferrous or non-ferrous metal cover over the grille once installed providing it is applied with screws that are no longer than 20mm in length and when applied they are affixed into the leaf core material, i.e. not applied into the aperture liner or the grille itself.
- When a Certifire approved grille is utilised the full requirements of the Certifire certificate must be met in addition to the specification given above.
- The area occupied by the air transfer grille must be deducted from the area of glazing if both elements are fitted.
- Multiple apertures are permitted providing the maximum area of apertures is no greater than 1.25m^2.

10.16 Environmental Seals

A number of different environmental seals fitted to the upstand of the stop have been successfully tested as part of the Prima 60 doorset design, in conjunction with Beech, Hardwood and MDF Frames.

The table below details a selection of the tested environmental seals that are approved.

Manufacturer & Product Reference (Test evidence)
• Halspan Limited Triple Fin SLS-TRI (10mm x 10mm) (CFR2211141; WF520063)
• Durable Collection Ltd DS88 series (WB112-1B & 2B)
• LORIENT LAS1010 (10mm x 10mm) (FRR-2009/1221)
• LORIENT LAS 1212 (12mm x 12mm) (FRR-2110/1498)
• Schlegal Q-Lon Aquamac 21 (10mm x 13mm x 2mm) (CFR2006181)
• Halspan Limited Flipex (5mm x 16mm with 8mm exposed) (WF509420 & WF509421)

On this basis, silicone or PVC based flame retardant acoustic, weather and dust seals (for example those similar to the seals referenced above) 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.

Where required, and on the basis that the Schlegal Q-Lon Aquamac 21 (10mm x 13mm x 2mm) has been tested in conjunction with a 54mm timber based doorset in test CFR2006181, the seals may be fitted rebated into the timber door stop or surface mounted with self-adhesive.

10.17 Threshold drop seals

10.17.1 Face mounted threshold drop seal

The table below details tested face mounted drop down seals that are approved to be face mounted at the bottom of one face of the door leaf.

Manufacturer & Product Reference (Test evidence)
• Norseal NOR820 900/S (CFR2103161)
• Lorient LAS8009 si (CFR2103161)

Tested and alternative aluminium face mounted threshold drop seals may be fitted subject to the following requirements:

- Face mounted threshold drop seal of maximum 62mm high x 22mm wide cross-sectional dimensions.
- Installation must not require the removal of any timber from the leaf, stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.
- Screws to affix the threshold drop seal shall be no greater penetration into the leaf than 29mm long.
- 2No. 15mm wide x 4mm thick seals fitted 10mm apart centrally to the bottom edge of the leaf.

10.17.2 Rebated threshold drop seal

The table below details a selection of the tested rebated drop seals that are approved.

Manufacturer & Product Reference (Test evidence)
• Halspan – SLS-DRP (CFR2209201) – 35mm x 14mm
• EUROLEVER AS61000 (FRR-2010/2942) – 35mm x 14mm
• Lorient LAS8001 si (WB112-1B & 2B) – 35mm x 14mm

Alternatively, the following components are also deemed acceptable.

Product	Manufacturer
RP8Si	Raven Products Ltd.
NOR810, NOR810S	Norsound Ltd.
STS 422, STS422GT	Sealed Tight Solutions Ltd

Tested and alternative drop seals are permitted subject to the following:

- The tested and assessed rebated drop seals shall be fitted centrally within the leaf thickness at the bottom edge of the leaf.
- The rebated drop seal may be optionally protected with either one of the following arrangements:
    - 2No. 15mm wide x 4mm thick Halspan SLS seals to the bottom edge of the leaf fitted centrally and spaced either side of the drop seal.
    - Intumescent protection to the rebated threshold drop seal as detailed in section 10.2.
- If a rebated drop seal is fitted to the doorset then flush bolts, may not be fitted to the bottom of the doorset.

10.18 Letter Box / Plate

The table below details the tested letter plate that is approved.

Manufacturer, Product Reference & Intumescent Protection (Test evidence)
• Halspan TS008 Certified Letter plate – (CFR2209201) Aperture in leaf: 54mm x 260mm Intumescent: Halspan letterplate kit, comprising: 42mm x 6mm graphite to top and bottom of the letterplate aperture 25mm x 4mm graphite internally in the letterplate body 1mm graphite lining the fixing holes through the leaf.

The above letterplate is permitted subject to the following requirements:

- The area of the letter plate (and air transfer grille if present) plus any glazing must not exceed the total permitted area for apertures within the leaf.
- The letterplate shall be installed at a location of 800mm to 1400mm from the bottom of the leaf to the centre of the aperture and shall be no closer than 100mm to the edge of the leaf or any other apertures within the leaf.
- It is possible to install the above detailed letterplate within solid side panels providing the side panel is constructed from the same materials as the leaf and the positioning requirements given above are adhered to.

10.19 Knockers, Numerals & Signage

Components with the following specification are deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specifications:

Knockers:

- Steel, stainless steel, aluminium or bronze knockers, may be surface fixed or bolted through the door leaf, providing they are fitted no closer than 30mm from the leaf edge, other elements of building hardware or to any glazing and are no greater than 200mm high x 120mm wide. If through fixed, there must be no more than 1mm clearance between the hole and stud. It is only permitted to fit 1No. knocker to any one doorset.

Numerals & Signage:

- Steel, stainless steel, aluminium or bronze numerals or signage may be surface fixed to the door leaf, providing they are fitted no closer than 35mm from the leaf edge, other elements of building hardware or to any glazing. The dimension of each numeral or sign must be no greater than 200mm high x 100mm wide x 4mm thick. Up to 5No. numerals or signs may be applied to a doorset, numerals and signs may be applied adjacent to each other providing the 35mm from other elements as detailed above is maintained.

10.20 Security Chain

The table below details the tested security chain that is approved.

Manufacturer & Product Reference (Test evidence)
• Halspan LCK-CHN-100 (CFR2209201)

Components with the following specification are deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted with fixings positioned away from the edge of the door leaf and therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specification:

- Metallic security chains may be surface fixed to the face of the door leaf and frame, providing they are fitted such that they do not interfere with the junction between the leaf edge and the frame, and no material is removed in order to facilitate the fitting of the security chain. Screws to affix the security chain shall be no greater than 32mm long.

10.21 Fire Door Identification Plates

Plastic or metal fire door identification plates may be glued or screwed to the face of the door leaves providing they are fitted no closer than 35mm from the leaf edge, other elements of building hardware or to any glazing. The dimension of any applied plate must be no greater than 100mm high x 100mm wide x 3mm thick.

These may be required to identify the following:

a) To be kept closed when not in use (Fire Door Keep Shut)

b) To be kept locked shut when not in use (Fire Door Keep Locked Shut)

c) Held open by an automatic release mechanism or free swing device (Automatic Fire Door Keep Clear).

d) For compliance with HTM 58 (WF509420).

When applied to a door leaf the plate shall either be:

- surface mounted to the face without removing material from the leaf or
- fitted into a tight rebate into the leaf face such that it finishes flush with the leaf face

10.22 Panic Hardware

The table below details tested panic hardware that is approved when fitted at a height of 800mm to 1400mm from the floor.

Manufacturer & Product Reference (Test evidence)
• Dorma GmbH & Co. KG – Dorma PHA 2500 panic exit device (WF198681) This item may be fitted in conjunction with a single or multi point latch/lock (section 10.4.1 or 10.4.2) and a lever handle (section 10.5). If a spindle hole is required, then the details given in section 10.5 must be followed.
• Dorma UK Ltd – 9800 (Panic touch bar and Locking Rod Assembly) (WF513979) This item is limited to use on SASD configurations with a maximum leaf height of 2040mm.
• Dorma UK Ltd – 9700 Series with ZT08/09 630 EP (Panic touch bar and Lever Trim with Europrofile adaptor) (WF390174)
• Hoppe (UK) Ltd AR/TB 8802 with AR/TB 8805 (WF331430)

Alternative panic hardware may be fitted, providing the installation does not require the removal of any timber from the leaf, stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.

The fitting of panic hardware is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using the appropriate doorset configuration based on the other latch/lock hardware fitted to the doorset.

10.23 Halspan Smart Tags

Based on the testing summarised within section 3, including WF509420 the following Near-Field Communication (NFC) devices as detailed below are permitted to be applied to the doorset within the following parameters:

Tested Specification:		
Manufacturer & Reference **(Test evidence)**	**Material**	**Overall Dimensions**
Halspan Limited, Halspan Edge Mounted Smart Tag: TAG-025-BLK (WF509420, WF509421, WF520064, CFR2211141 WF520063 & WF523824)	PVC	Ø25mm x 3mm thick
Halspan Limited, Halspan Surface Mounted Smart Tag: TAG-028-BLK (WF523824)	PVC	Ø28mm x 1mm thick

The following limitations must be adhered to when fitting the smart tag to the doorset:

Edge Mounted (Door leaf edge)

- The TAG-025-BLK or TAG-028-BLK smart tag must be fitted into a tight rebate such that the smart tag results in being flush with the lipping material.
- The TAG-028-BLK smart tag must be surface mounted onto the lipping material.
- The smart tags shall be applied within the hanging edge of the door leaf only.
- The smart tag shall be positioned centrally within the thickness of the door leaf.
- The smart tag shall be fitted no closer than 100mm below the top hinge position, measured from the centre of the tracker tag.
- The smart tag must be no closer than 87mm to any other element of hardware.
- It is not permitted to interrupt or remove intumescent material within the doorset to apply the above detailed tags.
- The smart tags shall not be applied over intumescent materials within the leaf edge but may be fitted opposing them.

Surface Mounted (Door leaf face)

- The TAG-025-BLK or TAG-028-BLK smart tag must be fitted into a tight rebate such that the smart tag results in being flush with the face of the leaf.
- The TAG-028-BLK smart tag must be surface mounted onto the leaf face without the removal of leaf material.
- The smart tags may be applied to the leaf face without restriction providing the tags meet the following limitations:
    - The smart tag shall not be applied such that it interfaces with the door stop.
    - The smart tag shall not be positioned directly above or on a glazed aperture.
    - The smart tag must be no closer than 87mm to any other element of hardware, apertures within the leaf or the edge of the leaf.

10.24 Overhead door operator

Frame option: 1

Configurations: LSASD, ULSASD, LSADD, ULSADD

The table below details the tested overhead door operator that is approved.

Manufacturer & Product Reference (Test evidence)
• Dormakaba ED250, with slide arm (WF513979)

The tested overhead door operator must be installed with the body transom mounted on the closing face. The door must not be glazing with greater than 20% uninsulated glass.

Notes:

It must be ensured that the closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.

In the event of power failure it must be ensured that the door operator reverts to self closing function.

The Dormakaba ED250 overhead door operators and associated equipment should be supplied and fitted by the manufacturer or an approved agent to ensure compatibility and installation in accordance with the tested details.

10.25 Sensors

(to be used in conjunction with the Dormakaba ED250 overhead door operator)

The table below details the tested and approved sensors.

Manufacturer & Product Reference
• Dormakaba 294350 IRS-4 Infrared sensor 350mm (WF513979)
• Dormakaba 294110 IRS-4 Infrared sensor 1200mm (WF513979)
• Dormakaba Flatscan 4020009050 Kit LZR Flatscan SW + 3D left hand black (WF513979)

The tested sensors listed in the table above are suitable for use with the Prima 60 doorset design, subject to the following requirements:

- They must be face fixed to the leaf with screws no greater than 12mm long.
- A link cable is permitted when two sensors are fitted back-to-back on each face of the leaf. The through hole and link cable combination must comply with the following:
    - 7mm diameter hole with 4.25mm - 5mm diameter cable.
    - The through hole for the link cable must be lined with a minimum thickness of 0.6mm Interdens®
- The master cable for the Dormakaba IRS-4 is permitted to be mounted to the leaf face on the opposite face to the mounted sensor, as tested in WF513979. The through hole and cable combination must comply with the following:
    - 8.5mm diameter hole with 5.25mm diameter cable.
    - The through hole for the link cable must be lined with a minimum thickness of 0.6mm Interdens®
- Sensors and through holes must be no closer than 60mm to the edge of the leaf and no closer than 200mm to glazing apertures.

10.26 Roller Catches

The table below details the tested roller catches that are approved.

Manufacturer & Product Reference (Test evidence)
• Dorma – Dorma lock 332a (Rollerlatch lock) (WF 198681)
• Simplex SRL 750 (FRR-2102/4628A)

Alternatively, roller catches of the following specification are also deemed acceptable:

Element	Specification
Maximum forend dimensions	235mm high x 20mm wide x 4mm thick
Maximum strike plate dimensions (excluding tongue)	165mm high x 24mm wide x 4mm thick
Maximum body dimensions	165mm high x 81mm wide x 18mm thick.
Materials	All parts (including the roller, forend and strike) to be steel, stainless steel or brass with a melting point ≥ 800^0 C

Based on the test evidence the above tested and assessed roller catches are permitted for use with the doorset design subject to the following parameters:

Frame option: 1

Configurations: ULSASD, DASD, ULSADD, DADD

- When a roller catch is fitted a self-closing device must also be fitted.
- The minimum perimeter intumescent must be as follows:
- Single leaf doorsets: 2no. 15x4mm intumescent seals located into the frame reveal along the closing edge.
- Double leaf doorsets: 2no. 15x4mm intumescent seals located in the same leaf that the roller catch body is fitted in.
- Intumescent protection to the roller latch must be as detailed in section 10.2.
- Positioning must be no closer than 300mm from other meeting edge hardware.
- In all instances the location of the roller must be between 800 – 1500mm from the finished floor level.

10.27 Rain Deflector

The table below details tested face fixed rain deflector that is approved to be face mounted at the bottom of one face of the door leaf.

Manufacturer & Product Reference (Test evidence)
• Exitex Ltd – Deflector 20 reference 1.01.0110 (CFR2105131, CFR2006181)

Tested and alternative aluminium rain deflectors may be fitted subject to the following requirements:

- Rain deflectors of maximum 30mm high x 20mm cross-sectional dimensions.
- Installation must not require the removal of any timber from the leaf, stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.
- Screws to affix the rain deflector shall be no greater penetration into the leaf than 24mm long.
- 2No. 15mm wide x 4mm thick seals fitted centrally to the bottom edge of the leaf.

10.28 Hold Open Armatures

Armatures for magnetic hold open devices have been tested in WF404075/A and achieved in excess of 60 minutes fire resistance performance. On this basis the following tested armature is permitted for use within the Prima 60 doorset design:

Manufacturer & Product Reference (Test evidence)
• Specialized Security, DR-01, Aluminium with Slim line magnet (WF404075/A)

Alternative hold open armatures may be fitted subject to the following requirements:

- Hold open armatures are to be constructed of metallic or polymeric construction.
- The maximum dimensions of 65mm high x 65mm wide shall not be exceeded.
- Installation must not require the removal of any timber from the leaf, stop or frame reveal (except for screw fixing) and it must not interfere with the self-closing action of the door leaf.
- Screws to affix the hold open armature shall be no greater penetration into the leaf than 24mm long.
- The hold open armature shall be positioned no further than 200mm from the top or bottom edge of the leaf and be positioned no closer than 60mm from the leaf edge or rebated hardware.