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Title

Field of Application for:

The Halspan® Prima 60 Range of Doorsets.

Part 2: Steel Based Door Frames

For 60 minutes Fire Resistance

Report No.:

FEA/F96103 Part 2 Revision P

Issue Date:

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Job Reference:

WF530851

Prepared for:

Halspan Limited
Regent House,
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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 2 Revision P is one part of the suite of (Prima 60) assessments, other parts of the suite address other doorset designs.

Registered Office:
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8 Overpanels & Fanlights, Sidepanel & Sidelights

The Prima 60 doorset design within steel frames is not permitted to be used with overpanels, fanlights, sidepanels or sidelights.

9 Adhesives

The following adhesives must be used in the construction of the doorsets. These may be hand applied or may be applied using an edgebander. With either method it must be ensured that sufficient glue is applied across the entire surface area between the 2No substrates being adhered to guarantee a robust bond. Other manufacturers guidance should be followed, for either installation application used.

Element	Product/Material Type
Door blank core	As per manufacturers tested specification.
Timber lipping	UF, PU, PUR or PF
Feature Groove Inserts	UF, PU, or PVA
Decorative & protective facings	UF, PF, PU, PVA, PVAc or contact adhesive (see note below)

Note:

Contact adhesive has been permitted as an acceptable adhesive for decorative facings as the outer decorative & protective facings will have negligible effect on the stability of the door leaf and will be rapidly consumed in fire test conditions.

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 can 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 metal 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 demonstrated 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 per doorset application. For specific items of hardware, the intumescent requirements are detailed within the relevant subsection.

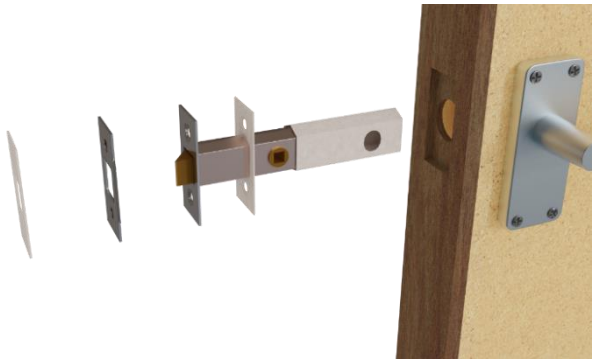
The door gap perimeter intumescent seal specifications are documented in conjunction with the leaf envelope size limitations in section 4.

Hardware Intumescent Specification		
Item	**Location**	**Product/Manufacturer (mm)**
Butt Hinges	Fitted under each hinge blade to the leaf only.	1 (t) Halspan Limited SLS-PAD-103 graphite (WF412658) 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	Under forend and encasing lock or latch body for all doorsets	1 (t) Halspan Limited SLS-PAD-109 (TA099-A) 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-PAD-112 (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)

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) 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

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)
LSADD	• Latch • Handle • Hinges • Self-closing device (closer) • Flush bolt or face fixed bolt • Door Selector if astragal present
ULSADD	• Hinges • Self-closing device (closer) • Flush bolt • Door Selector if 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.

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)
	• Zoo Hardware ZDL0060LR (WF412658)
	• 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 – BOM-LCK-104 (TA099-A)
	• 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 steel 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:
    - For single leaf arrangements between 800 – 1200mm from the finished floor level.
    - For double leaf arrangements between 800 – 1500mm from the finished floor level.
2. Locks with the above specification may be fitted centrally within the thickness of the leaf.
3. Mechanical locks which meet the specification given above are permitted.

10.4.2 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 CYD270 (TA099-A)
	• 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 Electronic locking

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

10.4.3.1 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: M1, M3 & M4

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 for cable runs.
- 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 Access control systems

10.4.4.1 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.
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. layers of 1mm thick Interdens® 1mm thick Interdens® applied under the forend and keep.
	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	

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

Locks which require a cable for signal or power from an external source are not permitted.

- Any of the perimeter intumescent specifications provided within section 4.5 for the appropriate configuration are permitted for use with the above detailed locksets.
- The frame must be fitted with a stop of minimum 15mm.
- Locks must be fitted between 800mm – 1200mm from the floor level to the spindle.

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 8906/6500/6612 levers, (WF350451 A/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-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)

Escutcheons	• Dorma – Dorma Plus Cylinder rose (WF198681 B)
	• Zoo Architectural Hardware – ZCS001SS – (CFR1909241 A)
	• Glutz – GF.NES.8.GFB Square escutcheon (WF504819 AB)
	• 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

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 – Hi Load 101 (RF01073)
	• 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 metal 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 to the leaf & M5 x 12mm long steel machine screws to the frame.
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 2200mm (h) must be hung on a minimum of 3 hinges. Leaves greater or equal 2200mm (h) must be hung on 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	

10.7 Doorset Self Closing

Doorset automatic self-closing can be provided by:

- Overhead face fixed closers

Alternative means of doorset self-closing devices such as concealed items or pivots used with floor springs are not considered acceptable for use with the Prima 60 doorset range with steel frames.

10.7.1 Overhead Face Fixed Closer

The table below details the 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 metal 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.

10.8 Bolts

10.8.1 Flush Bolts

The table below details 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

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)

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 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: All frame types

Configurations: LSADD (Optionally ULSADD)

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 mortice to facilitate the 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 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 & Tucker – Barza bolt B151-300-200 (TA099-A)
• 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 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.

The application of surface mounted bolts must not result in removal of frame material except to facilitate screw fixings and receive the bolt where applicable.

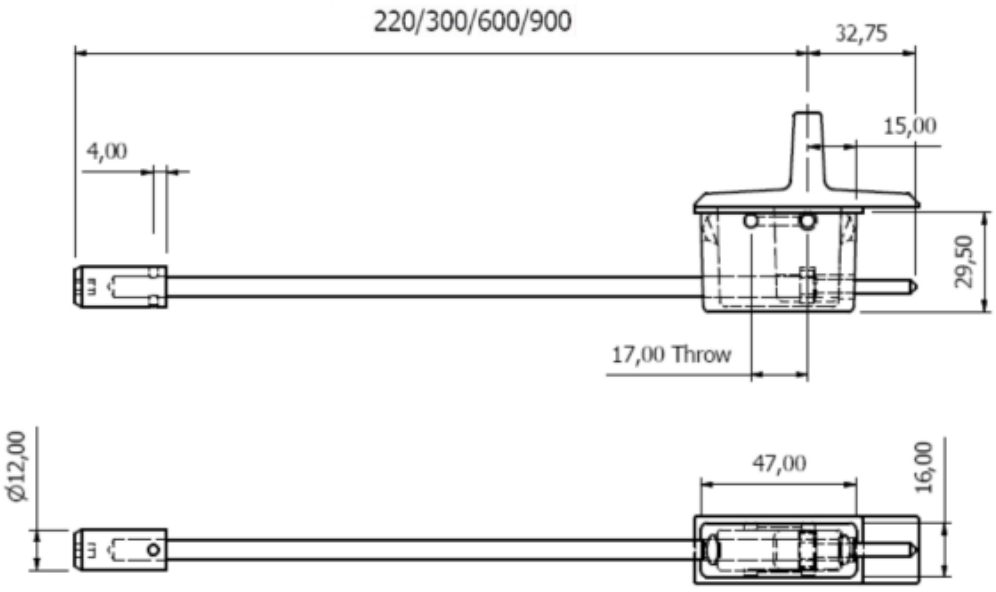
10.8.4 Royde & Tucker Anza surface mounted bolt

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: All frame types
- 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.

- 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.



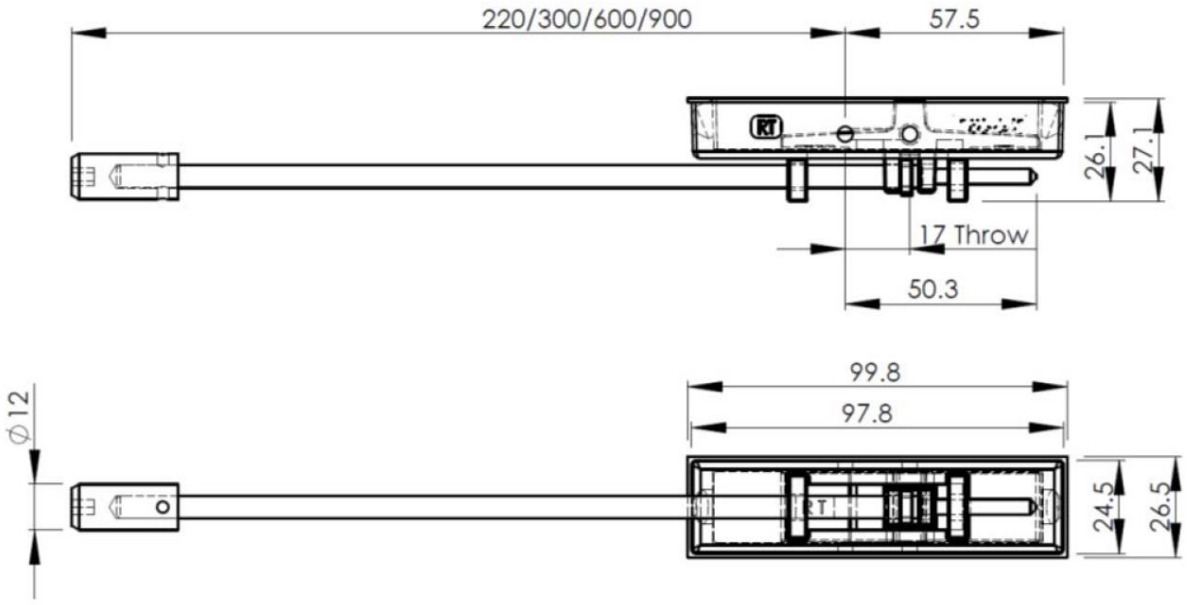
10.8.5 Royde & Tucker Anza flush mounted bolt

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: All frame types
- 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

- 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 Pull Handles

The table below details 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.

10.10 Push Plates & Kick Plates

The table below details 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.

10.11 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 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.

10.12 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.

10.13 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.

10.14 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.

10.15 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 steel Frames.

Some of the frame options include a seal by design and must therefore include the tested seal. However, the other frame options have been tested both with and without an environmental seal present and their application is therefore optional.

The table below details tested environmental seals that are approved and / or required.

Frame Option	Optional / Required	Manufacturer & Product Reference (Test evidence)
M1	Optional (Stop mounted self-adhesive)	Neoprene buffer seals no greater than 13mm wide. (Chilt/RF01073)
		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)
M3	Optional	BOS AADC0006, Elastomeric Seal Push Fit into Stop Profile (CFR2002051)
M4	Required	BOS AADC0006, Elastomeric Seal Push Fit into Stop Profile (CFR2002051)

On this basis, for frame option 1, 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.

The Halspan Limited Flipex (5mm x 16mm with 8mm exposed) as tested within WF509420 & WF509421 may be optionally applied to the bottom edge of the leaf as tested.

10.16 Threshold drop seals

10.16.1 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 nor steel from the 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.

10.16.2 Rebated threshold drop seal

The table below details 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.

10.17 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 3mm 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 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 and shall be no closer than 100mm to the edge of the leaf or any other apertures within the leaf.

10.18 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.

10.19 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.

10.20 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

10.21 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 point latch/lock (section 10.4.1) 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 or steel from the 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.

10.22 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 (Frame Reveal)

- The TAG-028-BLK Smart Tag must be surface mounted onto the frame reveal.
- The Smart Tag shall be applied within the hanging jamb only.
- The Smart Tag shall be positioned centrally relative to 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 Smart 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 tag.
- The Smart Tag 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 Tag 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.

10.23 Overhead door operator

Frame option: All frame types

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 glazed 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.

10.24 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.