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Title:

Field of Application for:

Falcon Stredor 44 Doorsets

For **30** Minutes Fire Resistance

Report No:

BMT/CNA/F15159 Revision F

Issue Date:

1st July 2022

Valid Until:

1st July 2027

Job Reference:

WF516032

Prepared for:

Falcon Panel Products Ltd.

Clock House,
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Shepperton,
Middlesex,
TW17 8AN

The version/revision stated on the front of this Field of Application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

9.2 Essential Hardware Protection

Hardware protection is usually in the form of an intumescent sheet material, often with a self-adhesive backing, applied to parts of a hardware component or lining the mortice to which the component is to be installed. The hardware protection types considered are in the following table:-

Manufacturer	Thickness	Product/Reference	Material Type
Astroflame	0.8mm	Flexiseal	Graphite
Dixon International Group Ltd	1mm 2mm 1mm 2mm 1mm 2mm	Therm-A-Strip Therm-A-Strip Therm-A-Flex Therm-A-Flex Sealmaster G30 Sealmaster G30	Monoammonium Phosphate Monoammonium Phosphate Graphite Graphite Monoammonium Phosphate Monoammonium Phosphate
Dufaylite Developments Ltd	1mm 2mm	Interdens Interdens	Monoammonium Phosphate Monoammonium Phosphate
Fire & Acoustic Seals Ltd	0.8mm 1mm 2mm	Spartan Spartan Spartan	Graphite Monoammonium Phosphate Monoammonium Phosphate
Lorient Polyproducts Ltd	1mm 2mm	MAP Paper MAP Paper	Monoammonium Phosphate Monoammonium Phosphate
Mann McGowan Ltd	1mm 2mm 1mm 2mm	Pyrostrip Interdens Pyrostrip Interdens Pyrostrip Heat Seal Pyrostrip 500F	Monoammonium Phosphate Monoammonium Phosphate Graphite Graphite
Norsound Ltd	0.5mm 1mm 2mm	NOR905 NOR910 NOR920	Graphite Graphite Graphite

Continued from previous page

Manufacturer	Thickness	Product/Reference	Material Type
Pyroplex Ltd	0.5mm	PMFS1 Mineral Fibre Sheet	Graphite
	1mm	PMFS2 Mineral Fibre Sheet	Graphite
Sealed Tight Solutions Ltd	1mm	STS Graphite	Graphite
	2mm	STS Graphite	Graphite
Vanquish Hardware Protection Ltd	0.8mm	FlexiFire	Graphite
	1mm	FlexiFire	Graphite
	2mm	FlexiFire	Graphite
	1mm	Vanquish Interdens	Monoammonium Phosphate
	2mm	Vanquish Interdens	Monoammonium Phosphate

The following sections provide the requirements for hardware protection across various components that can form part of a doorset using the Stredor system. Hardware protection is denoted as either “required” or “enhanced permitted”.

Where hardware protection is “required” in the individual component tables that follow, the **minimum** required specification is detailed.

Where hardware protection is “enhanced permitted” in the individual component tables that follow, it is has been proven through testing (and therefore accepted) that the application of additional/thicker intumescent materials for the protection of hardware will not be detrimental to expected performance. Where this is the case, only the hardware protection types in the above table which are of the same type to those permitted for the particular hardware item, being of equal or increased thickness to the “required” protection are considered. If the hardware item does not require intumescent protection but “enhanced permitted” is denoted as acceptable, any intumescent protection from the above table may be used.

It is not permitted to increase the intumescent gasket thickness beyond 2mm, unless specifically required for a certain item of hardware.

Any hardware protection types **not** listed are not permitted by this Field of Application. For certain items of hardware, there may be specific guidance regarding the required intumescent protection, which will be detailed in the relavnt section for that item of hardware (e.g. ensuring there is a certain amount of perimeter intumescent that runs past a piece of hardware in additon to any gasket protection or where there are specific requirements for certain types of hardware).

It has been requested by Falcon Panel Products to include the option for increasing the hardware protection, if required for the following reasons:

- To consolidate/simplify manufacturing processes and tolerances
- To follow guidance from the component manufacturer whilst maintaining the requirements of this Field of Application report

9.2.1 Locks

9.2.1.1 Single Point Locks and Latches

The hardware protection permissible for this doorset design is as follows:

Single Point Lock/Latch Intumescent Specification						
Leaf Type	Frame Type	Configuration	Location	Required	Enhanced Permitted	Product & Manufacturer
1	1, 2, 4 and 5	Single leaf doorsets	Lining all sides of the mortice for the lockset and/or fitted under the forend and keep	No	Yes	All 1mm thick or above
1	All	Double leaf doorsets (twin strip at meeting edge)	Fitted under the forend and keep	Yes	Yes	All 1mm thick or above

9.2.1.2 Multi Point Locks and Latches

The hardware protection permissible for this doorset design are as follows:

Multi Point Lock/Latch Intumescent Specification						
Leaf Type	Frame Type	Configuration	Location	Required	Enhanced Permitted	Product & Manufacturer
1	1 and 2	LSASD – 3pt	Lining all keep mortices or adhered to back of keeps	Yes	Yes	All 1mm thick or above
			Lining lock case and hook case mortices or encasing lock and hook cases	Yes	Yes	All 1mm thick or above
			Behind forend and/or lining groove behind espagnolette drive bar	No	Yes	All

9.2.2 Hinges

9.2.2.1 Butt and Lift-Off Hinges

The hardware protection permissible for this doorset design are as follows:

Butt and Lift-Off Hinge Intumescent Specification						
Leaf Type	Frame Type	Configuration	Location	Required	Enhanced Permitted	Type
1	1 and 2	All Single Action	Under all hinge blades of door leaf heights 2670mm or under	No	Yes	All
1	1 and 2	All Single Action	Under all hinge blades of door leaf heights 2671mm or over	Yes	Yes	All 1mm thick or above

9.2.3 Flush bolts

The hardware protection permissible for this doorset design are as follows:

Flush bolts Intumescent Specification						
Leaf Type	Frame Type	Configuration	Location	Required	Enhanced Permitted	Type
1	All SA type	All Single Action	Lining all sides of the mortice for the flush bolt for bolts up to 210mm (h)	Yes	Yes	All minimum 1mm thick
1	All SA type	All Single Action	Lining all sides of the mortice for the flush bolt for bolts up to 900mm (h)	Yes	Yes	Minimum 1mm thick STS graphite

9.2.4 Automatic Closing

9.2.4.1 Overhead Face Fixed Closers: Single Acting

Face fixed closing devices do not require any intumescent protection.

9.2.4.2 Overhead Concealed Closers: Single and Double Acting

The hardware protection permissible for this doorset design are as follows and is specific to each closer model:

Overhead Concealed Closer Intumescent Specification						
Rutland ITS11204 (various)						
Leaf Type	Frame Type	Arrangement	Location	Required	Enhanced Permitted	Type
1	1 and 2	All Single Action	Lining long sides of mortice for closer slider channel and on top of closer body, fitted as per manufacturers instructions for the supplied kit	Yes	No	Rutland IP.114 kit

Arrone 7383 (WF414162 -supplementary evidence)						
Leaf Type	Frame Type	Arrangement	Location	Required	Enhanced Permitted	Type
1	1 and 2	All Single Action	Lining all sides of mortice for both the closer arm and the closer body, fitted as per the manufacturers supplied intumescent kit	Yes	No	Monoammonium Phosphate 2mm thick

11.6.9 Escutcheons

Escutcheons are permitted at the lock location and can be bolt through, screw fixed or glued in position. The escutcheon must not remove any material from the door leaf and may be constructed of metal or plastic.

12 Installation

This section considers the installation of the different types of frames and doorset. This section considers:

- the door frame and architrave installation position relative to the wall
- the fire stopping between the frame and the wall
- the fixing requirement including packers
- the requirements for door edge gaps
- the trimming of door edges

The following table details which wall type the frame can be installed into

Frame type	Wall construction
Frames1, 2, 4, 5	Masonry wall Timber stud partition Steel stud partition

The following sections consider the fire stopping arrangement between door frame and wall.

12.1 Door Frame Installation: Frame 1, 2, 4, 5

12.1.1 Generic systems

The following tables detail permitted fire stopping details

The architrave can be softwood minimum density 450 kg/m^3 or MDF minimum density 600kg/m^3. Architrave to be mechanically fixed in place.

For the generic systems that specific the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire reistance required from the doorset.

Guidance for various methods of sealing the frame to structural opening gap is also given in BS 8214: 2016, “Code of practice for fire door assemblies”, which may be referred to where appropriate.

Mineral rock fibre with Architraves

Wall construction	Timber stud / masonry	
Architrave	15mm thick overlapping 15mm each side	
Linear gap joint seal	Mineral rock fibre packed to full depth	
Maximum gap size	20mm	

Mineral rock fibre and mastic with architraves

Wall construction	Steel and Timber stud / masonry	
Architrave	15mm thick overlapping 15mm each side	
Linear gap joint seal	Mineral rock fibre packed to full depth with 10mm intumescent capping both sides	
Maximum gap size	20mm	

Mineral rock fibre and mastic

Wall construction	Steel and Timber stud / masonry	
Architrave	None	
Linear gap joint seal	Mineral wool packed to full depth with 10mm intumescent capping both sides	
Maximum gap size	15mm	

Intumescent mastics with architraves

Wall construction	Timber stud / masonry	
Architrave	15mm thick overlapping 15mm each side	
Linear gap joint seal	Minimum 10 mm depth of intumescent mastic each side	
Maximum gap size	10mm	

12.1.2 Specific fire stopping solutions

12.1.2.1 Sealed Tight Solutions Ltd

Based on test test WF 386959 the following Sealed Tight Solutions Ltd products have been considered appropriate.

ST88 intumescent mastic

Wall construction	Steel and Timber stud / masonry	
Architrave	Optional	
Linear gap joint seal	10mm depth ST88 intumescent mastic either side.	
Maximum gap size	10mm	

Mineral Fibre or ST99 fire foam with ST88 intumescent mastic both sides

Wall construction	Steel and Timber stud / masonry	
Architrave	Optional	
Linear gap joint seal	ST99 full depth foam or mineral wool and 10mm deep ST88 intumescent mastic each side	
Maximum gap size	10 to 20mm	

ST99 Expanding foam with architraves

Wall construction	Steel and Timber stud / masonry	
Architrave	18mm thick overlapping 15mm each side minimum 45mm wide	
Linear gap joint seal	Full depth foam	
Maximum gap size	20mm	

Large gaps with timber/non-combustible subframe

Wall construction	Steel and Timber stud / masonry	
Architrave	18mm thick overlapping 15mm each side minimum 45mm wide l	
Linear gap joint seal	Timber or non-combustible sub frame bedded on wall with ST88 and gap between sub frame and frame filled with ST99	
Maximum gap size	Gap between frame and sub frame 25mm Overall gap 60mm max	

12.1.2.2 Fire and Acoustics Seals Ltd

Based on test test WF 414882 the following Fire and Acoustic Seals Ltd have been considered appropriate.

Expanding foam and mastics – Wall depth 100mm min

Wall construction	Steel and Timber stud / masonry	
Architrave	Optional	
Linear gap joint seal	Successfully tested full depth Fire and Acoustic Seals Ltd foam and 10mm deep intumescent mastic each side	
Maximum gap size	25mm	

Expanding foam with architraves – Wall depth 70mm min

Wall construction	Steel and Timber stud / masonry	
Architrave	18mm thick overlapping 15mm each side minimum 45mm wide	
Linear gap joint seal	Successfully tested full depth Fire and Acoustic Seals foam and 10mm deep intumescent mastic each side	
Maximum gap size	25mm	

12.2 Packers

For frames 1 to 5, packers between the frame and the structural opening can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Plastic packers should be cut short and capped with intumescent mastic unless test evidence demonstrates that mastic capping is not required.

12.3 Wall Types

The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period. The following aspect of the different supporting constructions need to be considered.

12.3.1 Masonry, Concrete & Solid Blockwork

These are considered as rigid constructions and are solid throughout the depth of the wall and have inherent fire resistance. These walls are denoted as rigid constructions in BSEN 1364 Part 1 as they deflect very little during a fire test. Due to the solid nature of the wall firestopping as detailed above will be adequate. Highly perforated blockwork is not covered by this category and specific test evidence must be referenced to ensure adequate support during the fire exposure period.

12.3.2 Steel Stud Partitions

These are considered as flexible constructions and incorporate large voids in their construction. These walls deflect during a fire test. Specific evidence is required to ensure the stud supporting the door frame is stabilised to reduce deflection during the fire test and the aperture is adequately lined to prevent gases getting into the void.

12.3.3 Timber Stud Partitions

These are not categorised but tend not to distort significantly during a fire test. A timber stud does not need to be stabilised during the fire test and the aperture will only need to be lined if the timber stud is not fully protecting the void in the partition.

12.3.4 Bespoke Walls & Partitions

These will require specific test evidence.

12.4 Onsite Leaf Size Adjustment

The door leaves should not be modified on site so only limited actions can be taken, see table below.

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The dimensions stated in section 5.2 may be reduced by 1mm for fitting purposes but cannot go below the minimum.

12.5 Door Gaps

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

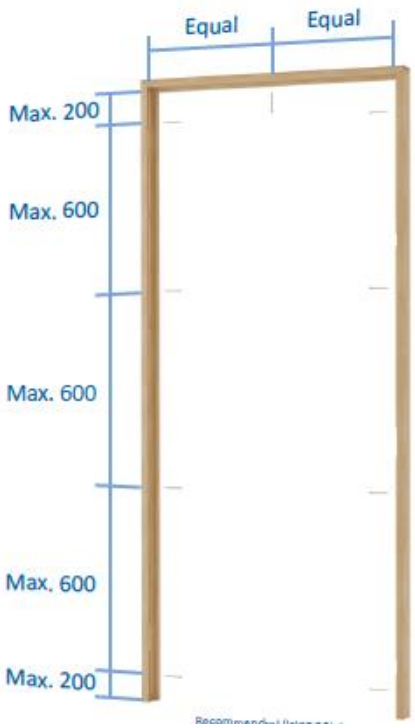
Door Edge Gaps & Alignment Tolerance Specification	
Location	Dimensions
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering

12.6 Structural Opening

The supporting construction must provide the required level of fire resistance designated for the doorset design and be a suitable medium to permit adequate fixity.

12.7 Fixings

The following drawings show the location of the fixings and the minimum depth of 40mm into the wall. A plastic packer is shown and proprietary plastic packers have been successfully tested.



Frame fixing locations

Frame fixing depth

The fixings must be of the appropriate type for the supporting construction.

13 Insulation

Insulation performance may be claimed for a doorset to this design meeting the following.

Insulation Performance Specification	
Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets and glazed doorsets with fully insulated glass (see section 6 for insulating glass types)

14 Conclusion

If the Falcon Panel Products Ltd. Stredor 44 doorset design (based on Leaf 1 and Frames 1, 2, 4 and 5), constructed in accordance with the specifications documented in this Field of Application, were to be tested in the appropriate configuration in accordance with BS 476: Part 22: 1987, it is our opinion that it would provide a minimum of 30minutes integrity and insulation (subject to section 13).

15 Declaration by the Applicant

1) We the undersigned confirm that we have read and comply with obligations placed on us by the Passive Fire Protection Forum (PFPF) Guide to undertaking technical assessments and engineering evaluations based on fire test evidence 2021 Industry Standard Procedure
2) We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.
3) We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.
4) We understand that this assessment is based on test evidence and will be withdrawn should evidence become available that causes the conclusion to be questioned. In that case, we accept that new test evidence may be required.
5) We are not aware of any information that could affect the conclusions of this assessment. If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

(in accordance with the principles of FTSG Resolution No. 82: 2001)

Signed:

_____

Name:

_____

For and on behalf of: Falcon Panel Products Ltd.

16 Limitations

The following limitations apply to this assessment:

1) This field of application addresses itself solely to the elements and subjects discussed and do not cover any other criteria. All other details not specifically referred to should remain as tested or assessed.
2) This field of application report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Warringtonfire, the assessment will be unconditionally withdrawn, and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.
3) This field of application has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
4) Opinions and interpretation expressed herein are outside the scope of UKAS accreditation.
5) This field of application relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this field of application, the element is suitable for its intended purpose.
6) This field of application report represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476: Part 22: 1987, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this field of application would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose.
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8) The version/revision stated on the front of this field of application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

17 Validity

1) The assessment is valid 5 years from the date of issue, after which time it must be submitted to Warringtonfire for technical review and revalidation.

2) This assessment report is not valid unless it incorporates the declaration given in section 15 duly signed by the applicant.

Signature:		
Name:	Dr K.D.S Towler*	P N Barker*
Title:	**Senior Product Assessor**	**Senior Product Assessor**

* For and on behalf of Warringtonfire

18 Appendix A: Revisions

Revisions

Rev.	Ref.	Date	Description
A	CNA/F15193	05.08.15	Clarification of glazing bead pin fixings.
B	CNA/F16188	15.12.16	Technical review & update to new document format. Inclusion of FEP/F16012 Rev. A covering MDF facings, PU adhesive for lippings, tested hardware (Rutland TS3204 closer, Hafele shoot bolts & Hafele steel mortice latch), tested Pyroplex graphite hardware protection, tested Pyroplex 30049 glazing system, assessed leaf size & maximum glazed area aperture increases. Inclusion of FEP/F16031 covering Plywood facings, Type 617 perimeter seals with supporting data sheets, tested MAP hardware protection, assessed leaf size & maximum glazed area aperture increases. Addition of 7mm inner facings based on test FEP/F16174.
C	WF436806	23.12. 2020	The assessment has been written into the latest Warringtonfire format and revalidated for a further 6 months based on a review of the evidence contained in Appendix A. Blue 60 has been removed as a fire stopping for the back of frame as has generic sealant option for fixing mock glazing beads to glass.
D	WF506219	08.07.21	The assessment has been reviewed and revalidated for a further 4 months duration.
E	WF510227	01.11.21	The assessment has been reviewed and revalidated for a further 2 months duration
F	WF516032	28.03.21	Revised and revalidated version of report. Report rebranded in the Warringtonfire name and styling and updated following general requirements of EN 15725: 2010 and PFPF guidance to undertaking technical assessments. The assessment has been updated based on the following test evidence as the primary test evidence for following leaf designs. Key items for inclusion within the assessment have been identified against each of the test reports: Stredor 44 with 4mm (t) plywood faces and 8mm (t) MDF faces (production F14 mill) WF 424619 (Door A) - ply faced, single leaf doorsets, STS intumescent seals, glazed apertures, face fixed mouldings, multipoint lock, eye viewer WF 416690- issue 2 - ply faced, single leaf doorsets, Pyroplex intumescent seals, glazed apertures, multipoint lock WF 385685 - MDF faced, double leaf doorsets, single leaf doorsets, grooves in leaf facing, STS intumescent seals,

			WF 414781 - MDF faced, double leaf doorsets, single leaf doorsets, Type 617 intumescent seals, flush bolts, concealed closer, automatic drop seals WF 432578 - ply faced, single leaf doorsets, bi-directional performance, face fixed mouldings, fanlights, dropseals, Type 617 intumescent seals, thresholds, letter plate WF 399749 - ply faced, double leaf doorsets, single leaf doorsets, Type 617 intumescent seals, glazed apertures Supplementary evidence has been provided by the following test evidence on the Stredor design with 2mm (t) plywood faces and 8mm (t) MDF faces (production F7 mill) RF15066 - ply faced, double doors, Pyroplex intumescent seals, flush bolts, glazed apertures RF16031 - ply faced, double doors, locksets, flush bolts WF 424619 (Door B) - ply faced, cylinder pull in alternate direction to Door A EFR-18-H-003671 - ply faced, single leaf doorsets, multi-point locks, drop seals, jamb mounted closer Leaf construction details to be considered: Stredor 44 with 4mm (t) plywood faces (including outer 0.4mm engineered veneer), 17mm softwood lamels either side central 2.1mm plywood layer Stredor 44 with 8mm MDF faces with 13mm softwood lamels either side central 2.1mm plywood layer Following framing types have been considered: • Rebated door frame with integral stops • Door frame with planted stops • Double swing door frames Glazing permitted in Stredor 44 ply faced and Stredor 44 MDF faced (see test evidence above). Aperture sizes, assessed glass and glazing systems will be generated from the test evidence. Certifire scopes as applicable for alternative glass and glazing systems. Following side lights and fanlights have been considered: Back to back framed elements consisting of either: • Glass with appropriate tested system (based on the data for Chilt/A02066 Rev O) • Infill panel consisting of the following panel constructions: Stredor 44 ply faced and MDF faced

			The following items of hardware are to be included based on the primary test evidence listed above and where applicable, the items tested and assessed in Chilt/A02066 Rev O (Strebord 44 design): • Butt & Lift Off Hinges • Pivots • Surface mounted closers • Concealed overhead closers • Jamb closers • Large (DIN standard) lockcases • Flush bolts • Drop seals • Clarification of approved lever handle materials (Aluminium / Steel) • Electronic locking (cableways & cableloops) • Letterplates • Lorient & Pyroplex Air Transfer Grilles • Push & Kick plates • Pull Handles • Panic Hardware

19 Appendix B: Performance Data

The following test evidence has been generated on timber based doorsets that are considered to be fundamentally the same as the Stredor doorset design, in terms of their suitability to support alternative items of hardware. The primary evidence for the Stredor doorset design is summarised in section 3 of this report.

19.1 Hinges

19.1.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF416689 (B)	ULSASD	46	Ash	Hoppe Arrone AR8182
WF414882	LSADD	32	Softwood	Zoo VLH243
RF11121*	ULSADD	38	Redwood	R&T H105
RF11170*	ULSADD	38	Redwood	R&T H101
RF13132	ULSADD	36	Redwood	R&T H101
RF13176 (A)	ULSASD	32	Redwood	R&T H101

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
BMT/FER/F13263 (A)	ULSASD	41	Redwood	Eclipse cranked bearing butt type hinge
BMT/FER/F13263 (B)	ULSASD	32	MDF	Eclipse cranked bearing butt type hinge
WF388638	ULSADD	39	PVC Wrapped Redwood	R&T H101
WF401039 (A)	LSASD	36	Redwood	Zoo ZHSS243
WF391843 (A)	LSASD	51	Redwood	R&T H101
WF384630	LSADD	43	Finger Jointed Softwood	R&T H101
WF405305 (A)	ULSASD	40	Redwood	Eurospec
BMT/FEP/F14233 (A)	LSASD	45	-	Zoo ZHSS243
WF402305	LSASD	51	Redwood	R&T H102
CFR1811071 (A)	ULSASD	39	Softwood	Eurospec Enduro HIN1433/13
WF411193	LSASD	37	MDF	Vier VLHL243RS &VLHR243RS

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF414162	LSASD	36	Ash	R&T H207
WF426842 (B)	ULSADD	16	Redwood	Hoppe Arrone AR8182
WF386959 (A)	ULSASD	32	Redwood	R&T H101
CFR1810221 (A)	ULSASD	37	Softwood	Eurospec Enduro HIN1433/13
CFR1811071 (B)	ULSASD	38	Softwood	Eurospec Enduro HIN1433/13
CFR1812111	ULSADD	36	Softwood	Eurospec Enduro HIN1433/13
CFR1812121	ULSADD	36	Softwood	Eurospec Enduro HIN1433/13
BMT/FEP/F15050 (A)	LSADD	49	MDF	R&T H101
Chilt/RF03108	ULSADD	30	Redwood	R&T H105

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
RF01030	ULSADD	32	Redwood	R&T H105
RF08088	ULSADD	44	Redwood	R&T H105
RF08125	ULSADD	49	MDF	R&T H105
RF97059	ULSADD	37	Redwood	R&T H105
RF98048	ULSADD	42	Redwood	R&T H105
RF98137	ULSADD	32	Redwood	R&T H105
BMT/FEP/F14072	ULSADD	32	Redwood	R&T H101
Chilt/RF05134 (A)	ULSASD	37	Redwood	R&T H101
Chilt/RF05134 (B)	ULSASD	38	Redwood	R&T H101
Chilt/RF03083	ULSADD	30	Redwood	R&T H105

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
RF00136	ULSADD+OP	37	Redwood	R&T H105
Chilt/RF09170	ULSADD	36	Redwood	R&T H105
Chilt/RF11006	ULSADD	33	Redwood	R&T H105
Chilt/RF08135	ULSADD	31	Redwood	R&T H105
Chilt/RF08094	ULSADD	33	Redwood	R&T H105
Chilt/RF10098	ULSADD	32	Redwood	R&T H105
RF99050	ULSADD+OP	36	Redwood	R&T H105
Chilt/RF07109	ULSADD	36	Redwood	R&T H105
BMT/FEP/F16035	ULSADD	47	Softwood	R&T H101
BMT/FEP/F14168	LSASD	48	Sapele	R&T H101

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WARRES 141445	ULSADD	40	Softwood	R&T H102
Chilt/RF09060 (A)	ULSASD	19	Redwood	R&T H105
Chilt/RF09060 (B)	ULSADD	43	Redwood	R&T H105
CFR1403122	ULSADD	34	Redwood	R&T H101
Chilt/RF10011 (A)	ULSASD	51	Redwood	R&T H101
Chilt/RF02109 (A)	ULSASD	13.5	Redwood	R&T H101
Chilt/RF02109 (B)	LSASD	35	Redwood	R&T H101
BMT/FEP/F15178 (A)	LSASD	38	Redwood	Zoo CF849
BMT/FEP/F15178 (B)	LSASD	38	Redwood	Zoo CF849
BMT/FEP/F15178 (C)	LSASD	45	MDF	Zoo CF849

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF427417	ULSASD	40	Meranti	Eclipse Frisco 14854
WF405307 (A)	LSASD	31	Softwood	Zoo VHP243
RK141-5A	LSASD	42	Steamed Beech	Euroart HINBB433/SSS
SF013-5A (A)	LSASD	46	Softwood	Dorma 3090F
SF013-9 (A)	LSADD	37	Veneer wrapped Spruce	Dorma 3090F
SF013-9 (B)	LSASD	44	Veneer wrapped MDF	Dorma 3090F
WF419865	LSASD	34	Poplar	Hoppe Arrone AR8182
WF421795	LSASD	35	Poplar	Consort CF5511
WF (B)	LSASD	33	Redwood	Nico Load Pro Lift off

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF426603	LSADD	0	Redwood	R&T H105
WF419820 (A)	ULSASD	35	Redwood	Eurospec Enduro CF339
WF419820 (B)	ULSASD	29	Redwood	Eurospec Enduro CF339
BMT/FEP/F15027A	LSASD	38	sapele	Nico Load Pro Lift off
BMT/FEP/F15034	ULSADD	33	Redwood	Intelligent Hardware HST.100
WF430460 (A)	ULSADD	35	Redwood	Hoppe Arrone AR8182
WF346351 (A)	LSASD	34	Softwood	R&T H101
WF433832	ULSADD	23	Redwood	R&T H105
BMT/FEP/F14265 (A)	ULSASD	47	Redwood	R&T H101
BMT/FEP/F14265 (B)	ULSADD	42	Redwood	R&T H101
WF435986(A)	ULSADD	36	Simplis Soleco Steel Flush Frame	Hoppe Arrone AR8182

19.1.2 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
CFR1505191	ULSASD	0	Redwood	R&T H101
Chilt/RF11172	ULSADD	39	MDF	R&T H105
Chilt/RF12061	ULSADD	34	Redwood	R&T H101
WF426842 (A)	ULSASD	29 Glazing aperture, no failure to hinge	Redwood	Hoppe Arrone AR8182

19.1.3 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF419584	LSASD	0	Softwood	Hoppe Arrone AR8182
WF391843 (B)	LSASD	47	Redwood	R&T H101
WF399751	ULSADD	31	Redwood	CB7735
WF419854	LSASD	33	Redwood	Hoppe Arrone AR8182
WF369451	ULSADD	35	Redwood	Smith & Locke 2900G
WF428987 (A)	LSASD	31	Sapele	Rutland RH.BB.43R.SS
WF428987 (B)	LSASD	41	Sapele	Rutland RH.BB.43R.SS

19.2 Closers

19.2.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF416689 (B)	ULSASD	46	Ash	Arrow 324BP
WF414882	LSADD	32	Softwood	Hoppe AR8200-SE
RF11121*	ULSADD	38	Redwood	Dorma TS71
RF11170*	ULSADD	38	Redwood	Rutland TS3204
RF13132	ULSADD	36	Redwood	Rutland TS3204
RF13176 (A)	ULSASD	32	Redwood	Rutland TS3204
BMT/FER/F13263 (A)	ULSASD	41	Redwood	Turentek TSS225 OHC
BMT/FER/F13263 (B)	ULSASD	32	MDF	Turentek TSS225 OHC
WF388638	ULSADD	39	PVC Wrapped Redwood	Rutland ITS 11204

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF401039 (A)	LSASD	36	Redwood	Rutland TS9205
WF391843 (A)	LSASD	51	Redwood	Astra 4000
WF384630	LSADD	43	Finger Jointed Softwood	Arrone AR1500 & Rutland TS50204
WF405305 (A)	ULSASD	40	Redwood	Rutland TS9205
BMT/FEP/F14233 (A)	LSASD	45	Sapele	Dorma TS73V OHC
WF402305	LSASD	51	Redwood	Astra 4000 (jamb mounted
CFR1811071 (A)	ULSASD	39	Softwood	Dorma TS68
WF411193	LSASD	37	MDF	Rutland TS11205
WF414162	LSASD	36	Ash	Arrone AR7383 (concealed in head)
WF426842 (B)	ULSADD	16	Redwood	Hoppe AR1500

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF386959 (A)	ULSASD	32	Redwood	Rutland ITS.11204
CFR1810221 (A)	ULSASD	37	Softwood	Rutland TS4204
CFR1810221 (B)	DASD	39	Softwood	Rutland ITS.11204
CFR1811071 (B)	ULSASD	38	Softwood	Dorma TS68
CFR1812111	ULSADD	36	Softwood	Rutland TS.9205
CFR1812121	ULSADD	36	Softwood	Rutland TS.5204BC.SRFB.SESE
BMT/FEP/F15050 (A)	LSADD	49	MDF	N/A
Chilt/RF03108	ULSADD	30	Redwood	Dorma TS73V
RF01030	ULSADD	32	Redwood	Dorma TS73
RF08088	ULSADD	44	Redwood	Dorma TS71

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
RF08125	ULSADD	49	MDF	Dorma TS71
RF97059	ULSADD	37	Redwood	Dorma TS73
RF98048	ULSADD	42	Redwood	Dorma TS73
RF98137	ULSADD	32	Redwood	Dorma TS73
BMT/FEP/F14072	ULSADD	32	Redwood	Rutland TS3204
Chilt/RF05134 (A)	ULSASD	37	Redwood	Dorma TS73V
Chilt/RF05134 (B)	ULSASD	38	Redwood	Dorma TS73V
Chilt/RF03083	ULSADD	30	Redwood	Dorma TS73V
RF00136	ULSADD+OP	37	Redwood	Dorma TS73V
Chilt/RF09170	ULSADD	36	Redwood	Dorma TS71

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
Chilt/RF11006	ULSADD	33	Redwood	Dorma TS71
Chilt/RF08135	ULSADD	31	Redwood	Dorma TS71
Chilt/RF08094	ULSADD	33	Redwood	Dorma TS71
Chilt/RF10098	ULSADD	32	Redwood	Dorma TS73V
RF99050	ULSADD+OP	36	Redwood	Dorma TS73V
Chilt/RF07109	ULSADD	36	Redwood	Dorma TS73V
BMT/FEP/F16035	ULSADD	47	Softwood	Arrone AR1500
BMT/FEP/F14168	LSASD	48	Sapele	Arrone AR1500
WARRES 141445	ULSADD	40	Softwood	Dorma TS73V
Chilt/RF09060 (A)	ULSASD	19	Redwood	Dorma TS68

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
Chilt/RF09060 (B)	ULSADD	43	Redwood	Dorma TS68
CFR1403122	ULSADD	34	Redwood	Dorma TS68
Chilt/RF10011 (A)	ULSASD	51	Redwood	Dorma TS71
Chilt/RF02109 (A)	ULSASD	13.5	Redwood	Dorma TS73V
Chilt/RF02109 (B)	LSASD	35	Redwood	Dorma TS73V
BMT/FEP/F15178 (A)	LSASD	38	Redwood	Rutland TS3204
BMT/FEP/F15178 (B)	LSASD	38	Redwood	Rutland TS3204
BMT/FEP/F15178 (C)	LSASD	45	MDF	Rutland TS3204
Chilt/RF11192	ULSADD	34	Redwood	Rutland TS3204

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF427417	ULSASD	40	Meranti	Dorma TS72
WF405307 (A)	LSASD	31	Softwood	Rutland TS9205
RK141-5A	LSASD	42	Steamed Beech	Rutland TS11204
SF013-5A (A)	LSASD	46	Softwood	Dorma TS68 RA
SF013-9 (A)	LSADD	37	Veneer wrapped Spruce	Dorma TS83
SF013-9 (B)	LSASD	44	Veneer wrapped MDF	Dorma TS83
WF419865	LSASD	34	Poplar	Dorma TS92
WF421795	LSASD	35	Poplar	Dorma TS93
WF421964 (B)	LSASD	33	Redwood	TBC
CFR2003051	DADD	37	Redwood	Arrone AR700 Floor Spring

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF426603	LSADD	0	Redwood	Dorma TS73
WF419820 (A)	ULSASD	35	Redwood	Smith & Locke 8709G
WF419820 (B)	ULSASD	29	Redwood	Smith & Locke 8709G
BMT/FEP/F15027A	LSASD	38	sapele	Rutland TS3204
BMT/FEP/F15034	ULSADD	33	Redwood	Rutland TS3204
WF430460 (A)	ULSADD	35	Redwood	Arrone AR6383
WF433832	ULSADD	23	Redwood	Rutland ETS.18314
BMT/FEP/F14265 (A)	ULSASD	47	Redwood	Arrone AR1500 OHC
BMT/FEP/F14265 (B)	ULSADD	42	Redwood	Arrone AR1500 OHC

19.2.2 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF418407 (B)	LSASD	8* (Glazing) Perimeter failure at 34 min	Streframe E	Briton 1120B
CFR1505191	ULSASD		Redwood	Dorma TS71
WF380214 (A)	LSASD	52	Redwood	Arrone AR1500
Chilt/RF11172	ULSADD	39	MDF	Rutland TS3204
Chilt/RF12061	ULSADD	34	Redwood	Rutland TS3204
WF423917	LSASD		Sapele	Arrone AR7383
WF426842 (A)	ULSASD	29	Redwood	Arrone 6383

19.2.3 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Closer Manuf/ Model
WF419584	LSASD	0	Softwood	Arrone F6700
WF391843 (B)	LSASD	47	Redwood	Astra 4000
WF399751	ULSADD	31	Redwood	Rutland TS9205
WF428987 (A)	LSASD	31	Sapele	Rutland ITS.11204
WF428987 (B)	LSASD	41	Sapele	Rutland ITS.11204

19.3 Locks & Latches

19.3.1 Single Point Locks

19.3.1.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF414882	LSADD	32	Softwood	FS1257 Universal din sash lock
RF11121*	ULSADD	38	Redwood	Euro Spec mortice lock/latch
RF11170*	ULSADD	38	Redwood	Simplex mortice & Euro cylinder
RF13132	ULSADD	36	Redwood	Easi-T steel mortice latch and Eurospec Eurocylinder lock
RF13176 (A)	ULSASD	32	Redwood	Easi-T steel mortice latch and Eurospec Eurocylinder lock
BMT/FER/F13263 (A)	ULSASD	41	Redwood	Union/ASSA Abloy steel mortice latch and Eurocylinder lock with thumbturn on exposed face

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
BMT/FER/F13263 (B)	ULSASD	32	MDF	Union/ASSA Abloy steel mortice latch and Eurocylinder lock with thumbturn on exposed face
WF388638	ULSADD	39	PVC Wrapped Redwood	DIN Standard
WF384630	LSADD	43	Finger Jointed Softwood	Laidlaw 13861 & Gem GK700
WF405305 (A)	ULSASD	40	Redwood	ERA Tubular Latch
CFR1811071 (A)	ULSASD	39	Softwood	ERA Tubular Latch
WF411193	LSASD	37	MDF	Salto Æ lement Mortice
WF386959 (A)	ULSASD	32	Redwood	Porta Din Sashlock
CFR1810221 (A)	ULSASD	37	Softwood	Eurospec Tubular Mortice
CFR1811071 (B)	ULSASD	38	Softwood	ERA Tubular Latch

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
CFR1812111	ULSADD	36	Softwood	ERA Tubular Latch
CFR1812121	ULSADD	36	Softwood	Altro Heavy Duty Tubular Latch - 65mm Case - 44mm Backset - SS
BMT/FEP/F15050 (A)	LSADD	49	MDF	Gridlock tubular latch
RF01030	ULSADD	32	Redwood	Henderson Hardware tubular latch
RF08125	ULSADD	49	MDF	Eurospec tubular latch
RF98048	ULSADD	42	Redwood	Henderson Hardware tubular latch
RF98137	ULSADD	32	Redwood	Henderson Hardware tubular latch
BMT/FEP/F14072	ULSADD	32	Redwood	Zoo tubular latch
RF00136	ULSADD+OP	37	Redwood	Henderson Hardware tubular latch
Chilt/RF09170	ULSADD	36	Redwood	Eurospec tubular latch

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
Chilt/RF11006	ULSADD	33	Redwood	Eurospec tubular latch
RF99050	ULSADD+OP	36	Redwood	Henderson Hardware tubular latch
Chilt/RF07109	ULSADD	36	Redwood	Eurospec tubular latch
BMT/FEP/F16035	ULSADD	47	Softwood	Zoo 3X910C-BO2O
WARRES 141445	ULSADD	40	Softwood	Tubular
CFR1403122	ULSADD	34	Redwood	Legge H810F
Chilt/RF10011 (A)	ULSASD	51	Redwood	E&S tubular latch
BMT/FEP/F15178 (A)	LSASD	38	Redwood	Yale Snapkeep 39-CH mortice latch
BMT/FEP/F15178 (B)	LSASD	38	Redwood	Yale Snapkeep 39-CH mortice latch
BMT/FEP/F15178 (C)	LSASD	45	MDF	Yale Snapkeep 39-CH mortice latch

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
Chilt/RF11192	ULSADD	34	Redwood	E&S tubular latch
WF405307 (A)	LSASD	31	Softwood	Zoo ZTKA76R
RK141-5A	LSASD	42	Steamed Beech	Euroart DLA7255EP/SSS
SF013-5A (A)	LSASD	46	Softwood	Dorma 281CE
SF013-9 (A)	LSADD	37	Veneer wrapped Spruce	Dorma 381E
SF013-9 (B)	LSASD	44	Veneer wrapped MDF	Dorma 381E
WF421964 (B)	LSASD	33	Redwood	NSP 614 Digital Lock
CFR2003051	DADD	37	Redwood	Altro Easi-T
WF426603	LSADD	29* (Top hanging corner)	Redwood	Henderson tubular mortice

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF419820 (A)	ULSASD	35	Redwood	Glutz 1052.7/60 Sashlock
WF419820 (B)	ULSASD	29	Redwood	Glutz 1052.7/60 Sashlock
BMT/FEP/F15034	ULSADD	33	Redwood	Union Sashlock
WF430460 (A)	ULSADD	35	Redwood	Hoppe AR8100
WF346351 (A)	LSASD	34	Softwood	GU Security Automatic M101313
WF433832	ULSADD	23	Redwood	Sparka tubular mortice
BMT/FEP/F14265 (A)	ULSASD	47	Redwood	Arrone 3 lever mortice sashlock
BMT/FEP/F14265 (B)	ULSADD	42	Redwood	Arrone 3 lever mortice sashlock

19.3.1.2 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF418407 (B)	LSASD	8* (Glazing) Perimeter failure at 34 min	Streframe E	CISA eGO ANZ
CFR1505191	ULSASD		Redwood	Eurospec CE21121
WF380214 (A)	LSASD	52	Redwood	Eurospec DIN Latch
Chilt/RF11172	ULSADD	39	MDF	Eurospec tubular latch
Chilt/RF12061	ULSADD	34	Redwood	Arrone mortice latch
WF426842 (A)	ULSASD		Sapele	Arrone AR8100
WF419361 (A)	LSASD	29	Redwood	Frelan JL1091
WF151228 Issue 2	DASD	22 Indicative Test, Failure of lock @ 30 mins	Softwood	New Star LRB1

19.3.1.3 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF419584	LSASD	0	Softwood	NSP 814
WF399751	ULSADD	31	Redwood	Eurospec tubular latch
WF385685	ULSADD	40	Redwood	Zoo mortice latch

19.3.2 Multi-point Locks

19.3.2.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF416689 (B)	ULSASD	46	Ash	Winkhaus AV2
WF401039 (A)	LSASD	36	Redwood	Glutz 1893 Mint
WF391843 (A)	LSASD	51	Redwood	ERA Surefire Classic
BMT/FEP/F14233 (A)	LSASD	45	Sapele	Winkhaus AV2
WF402305	LSASD	51	Redwood	Winkhaus AV2
WF414162	LSASD	36	Ash	Winkhaus AV3
BMT/FEP/F14168	LSASD	48	Sapele	Winkhaus AV2
WF419865	LSASD	34	Poplar	ERA Surefire Classic
WF421795	LSASD	35	Poplar	Winkhaus AV3
BMT/FEP/F15027A	LSASD	38	sapele	ERA Truelock multipoint

19.3.2.2 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Lock Manuf/ Model
WF391843 (B)	LSASD	47	Redwood	ERA Surefire Classic
WF428987 (A)	LSASD	31	Sapele	ERA Surefire Heritage
WF428987 (B)	LSASD	41	Sapele	ERA Surefire Heritage
WF412333 AR2 (A)	LSASD	36	Redwood	UAP Fullex Crimebeater XL16

19.3.3 Magnetic Locks

No test evidence has been made avaiable

19.3.4 Cylinders

19.3.4.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Cylinder Manuf/ Model
WF416689 (B)	LSASD	46	Ash	ERA Fortress
WF414882	LSADD	32	Softwood	Vier thumbturn ZL30T/30CAS
RF11170*	ULSADD	38	Redwood	Eurocylinder
RF13132	ULSADD	36	Redwood	Eurocylinder
RF13176 (A)	ULSASD	32	Redwood	Eurocylinder
BMT/FER/F13263 (A)	ULSASD	41	Redwood	Eurocylinder
BMT/FER/F13263 (B)	ULSASD	32	MDF	Eurocylinder
WF401039 (A)	LSASD	36	Redwood	Glutz GC9991 Eurocylinder
WF391843 (A)	LSASD	51	Redwood	ERA Fortress

Test Ref	Tested Config	Time of First Failure	Frame Material	Cylinder Manuf/ Model
BMT/FEP/F14233 (A)	LSASD	45	Sapele	Winkhaus 30/30
WF402305	LSASD	51	Redwood	Eurocylinder
WF411193	LSASD	37	MDF	Salto thumbturn
WF414162	LSASD	36	Ash	ERA Fortress
WF426842 (B)	ULSADD	16	Redwood	Hoppe AR780
BMT/FEP/F14168	LSASD	48	Sapele	Winkhaus XR6
CFR1403122	ULSADD	34	Redwood	Eurocylinder
SF013-5A (A)	LSASD	46	Softwood	Dorma 600s
SF013-9 (A)	LSADD	37	Veneer wrapped Spruce	Dorma PC83
SF013-9 (B)	LSASD	44	Veneer wrapped MDF	Dorma PC83

Test Ref	Tested Config	Time of First Failure	Frame Material	Cylinder Manuf/ Model
WF421795	LSASD	35	Poplar	ERA Fortress
WF421964 (B)	LSASD	33	Redwood	NSP SMF614*
WF419820 (A)	ULSASD	35	Redwood	Glutz GUK002
WF419820 (B)	ULSASD	29	Redwood	Glutz GUK002
BMT/FEP/F15027A	LSASD	38	sapele	Eurospec cylinder
WF430460 (A)	ULSADD	35	Redwood	Hoppe AR780
WF346351 (A)	LSASD	34	Softwood	Assa Abloy KMT3030-NP

19.3.4.2 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Material	Cylinder Manuf/ Model
WF419361 (A)	LSASD	38	Softwood	Frelan JL70-OPDPB

19.3.4.3 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Cylinder Manuf/ Model
WF391843 (B)	LSASD	47	Redwood	ERA Fortress
WF419854 (B)	LSASD	33	Redwood	NSP 814*
WF428987 (A)	LSASD	31	Sapele	Access2 Premier 3
WF428987 (B)	LSASD	41	Sapele	Access2 Premier 3

19.4 Bolts

19.4.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Bolt Manuf/ Model
WF414882	LSADD	32	Softwood	Zoo ZAS03RSS
BMT/FEP/F15050 (A)	LSADD	49	MDF	Zoo ZAS03RSS
CFR1403122	ULSADD	34	Redwood	Cambridge Fire Research
SF013-9 (A)	LSADD	37	Veneer wrapped Spruce	Dortez AFB 6” L
BMT/FEP/F15034	ULSADD	33	Redwood	Zoo ZAS1355 & ZAS03RSS
WF430460 (A)	ULSADD	35	Redwood	Hoppe Arrone AR326B

19.4.2 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model
WF414781	ULSADD	33	Redwood	Zoo ZAS03RSS
BMT/FEP/PF16012	ULSADD	42	Redwood	Hafele 900.17.984
WF399749	ULSADD	31	Sapele	Hafele 900.17.984
WF399751	ULSADD	31	Redwood	Hafele 900.17.984
WF369451	ULSADD	35	Redwood	Smith and Locke 5020J

19.5 Door Viewers

19.5.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Viewer Manuf/ Model
WF416689 (B)	ULSASD	46	Ash	D&E Architectural 3850 Ultrascope
WF401039 (A)	LSASD	36	Redwood	Glutz GY3504
WF402305	LSASD	51	Redwood	Norseal DV160/C
WF411193	LSASD	37	MDF	2no UAP Nanocoast CVPLSSS 180° viewer
WF414162	LSASD	36	Ash	Jedo JV942
WF386959 (A)	ULSASD	32	Redwood	Sealed Tight Solutions STS4008
WF421795	LSASD	35	Poplar	D&E SWLAF EI30
WF421964 (B)	LSASD	33	Redwood	UAP CVPLCH

19.5.2 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Option	Frame Material	Viewer Manuf/ Model	Dimensions
WF147045	N/A	66		N/A	UAP Salamander Secure-to-view Firecheck SWALF	Barrel: Ø14mm Footprint: Ø26mm
WF147046	N/A	66		N/A	UAP Salamander Secure-to-view Firecheck SWALF	Barrel: Ø14mm Footprint: Ø26mm

19.5.3 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Viewer Manuf/ Model
WF426419 (A)	LSASD	35	Redwood	Sealed Tight Solutions 4008
WF426419 (B)	LSASD	41	Redwood	Sealed Tight Solutions 4008
WF428987 (A)	LSASD	31	Sapele	Rutland
WF428987 (B)	LSASD	41	Sapele	Rutland

19.6 Letter Plates

19.6.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Letterplate Manuf/ Model	Hardware Intumescent
WF414882	LSADD	32	Softwood	ERA Fab & Fix 3C018 with security shield 3F005	Fire and Acoustic Seals Ltd Spartan FASGP1013 100mm(l) x 40mm(w) x 1.3mm(t)
WF414162	LSASD	36	Ash	Royde & Tucker LP08	Royde & Tucker LP008 intumescent kit
WF419865	LSASD	34	Poplar	Sealed Tight Solutions Ltd STS 4001	Sealed Tight Solutions Ltd intumescent liner 30mm(w) x 2.3mm(t)
WF421795	LSASD	35	Poplar	Royde & Tucker LP08 with TS008 security cowl	Royde & Tucker LP008 intumescent kit

19.6.2 Tested in Solid Timber 44mm Door Leaves

Test Ref	Tested Config	Time of First Failure	Frame Material	Hinge Manuf/ Model	Hardware Intumescent
WF428987 (A)	LSASD	31	Sapele	Lorient Polyproducts Ltd RJ008	As supplied by Lorient

19.7 Pivots & Floor Springs

19.7.1 Tested in Strebord 44

Test Ref	Tested Config	Time of First Failure	Frame Material	Item Type	Item Manuf/ Model
CFR1810221 (B)	DASD	39	Softwood	Pivot kit	Rutland PS.190
CFR1810221 (B)	DASD	39	Softwood	Floor spring	Rutland PS.260
CFR2003051	DADD	37	Redwood	Pivot kit	Hoppe Arrone AR700
CFR2003051	DADD	37	Redwood	Floor spring	Hoppe Arrone AR700

19.8 Security Chains

19.8.1 Tested in Similarly Constructed 44mm Substrates

Test Ref	Tested Config	Time of First Failure	Frame Material	Type	Viewer Manuf/ Model	Dimensions
WF419361 (A)	LSASD	38	Softwood	Concealed Chain	Frelan J3004SN	Body: 91.5mm(l) x 16mm(t) Latch: 11mm x 6mm Forend: 56.5mm(h) x 25mm(w) x 2mm(t)