



INTERNATIONAL FIRE
CONSULTANTS LIMITED

PRIVATE & CONFIDENTIAL

IFC FIELD OF APPLICATION REPORT

Field of Application for FD30 and FD60 Strebord/Halspan Door Leaves Installed as Pocket Doors with Recessed Pull Handles

Fire Resistance Standard: BS476: Part 22: 1987

IFC Report PAR/19590/01

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NOTE: *This report should not be manipulated, abridged or otherwise presented without the written consent of International Fire Consultants Ltd*

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1. INTRODUCTION

This report has been prepared by International Fire Consultants Ltd (IFC), on the instruction of PC Henderson Ltd, to define the Field of Application for Strebord/Halspan door leaves installed as pocket doors with recessed pull handles, that are required to provide 30 or 60 minutes fire resistance performance, as applicable, when adjudged against BS476: Part 22: 1987.

When establishing the variations in the construction that can achieve the required fire resistance performance, IFC follow the guidance in BS ISO/TR 12470-2: 2017 *'Fire resistance tests - Guidance on the application and extension of results from tests conducted on fire containment assemblies and products. Part 2: Non-load bearing elements'*.

It is proposed that variations to the tested specifications, as described in the following sections, may be accommodated into assemblies, without reducing their potential to achieve a 30 or 60 minutes integrity rating, as applicable, if tested in accordance with the method and criteria of BS476: Part 22: 1987. The omission of information on any components or manufacturing methods does not imply a lack of approval of those details but these would need to be the subject of a separate analysis. Only variations specifically mentioned are supported by this assessment document, and all other aspects must otherwise be as proven in tests summarised herein.

As the door assembly is symmetrical when supported within the sliding door mechanism, this Field of Application considers the scope of approval for door assemblies that may be exposed to fire conditions from either face. If non-symmetrical elements are added to the door assembly, relevant test evidence must be available to support its use when exposed to either direction of fire exposure to fire.

2. TEST EVIDENCE

The test evidence used to support this Field of Application Report are referenced in Appendix C and Section 3.2 which outlines the fire tests conducted on the PC Henderson Ltd sliding door mechanism and the relevant Field of Application Reports relating to Strebord and Halspan (Optima/Prima) door blanks.

Further fire test evidence exists whereby both Strebord and Halspan door leaves have been tested with recessed panels created by machining through the leaf faces, therefore providing suitable justification that a localised reduction in leaf thickness would not have an adverse effect on the required fire performance of the door assemblies. The test reports in question are outlined in Appendix C and this evidence has been used in the analysis for the flush pull handles outlined in Section 3.5.

3. SCOPE OF APPROVAL

3.1 Maximum Assessable Door Leaf Sizes

The approved sizes of the sliding single leaf door assemblies comprising either Strebord or Halspan (Optima/Prima) door leaves are as per the PC Henderson Ltd tested sizes outlined in the primary test evidence summarised in Appendix C which are as follows:

Fire Rating	Maximum Leaf Size
FD30	2315mm high x 930mm wide (Minimum 44mm thick)
FD60	2315mm high x 930mm wide (Minimum 54mm thick)

3.2 Door Leaf Specification

The Strebord and Halspan (Optima/Prima) door blank specifications are based upon the fire resistance test evidence in the following current versions of the Field of Application Reports for the respective door blank types:

Door Blank Type	Report Reference
Strebord 30	IFCA/08037 - Field of Application for FD30 Strebord 44 [®] Door Leaves Installed in Timber and Steel Frames
Strebord 60	IFCA/08038 - Field of Application for FD60 Strebord 54 [®] Door Leaves Installed in Timber and Steel Frames
Halspan Optima 30	PAR/10341/01 - Field of Application for 30 minute 44mm thick Halspan [®] Optima Door Leaves Installed in Timber and Aluminium Frames
Halspan Optima 60	PAR/10341/02 - Field of Application for 60 minute 54mm thick Halspan [®] Optima Door Leaves Installed in Timber Frames
Halspan Prima 30	IFCA/06166 - Field of Application for 30 minute 44mm thick Halspan [®] Prima Door Leaves Installed in Timber, Steel and Aluminium Frames
Halspan Prima 60	IFCA/06167 - Field of Application for 60 minute 54mm thick Halspan [®] Prima Door Leaves Installed in Timber and Steel Frames

The lippings to be utilised within the pocket door system are as follows:

Component	Material	Minimum Density	Dimensions
Lippings <i>Note 1</i>	Hardwood	620kg/m ³ <i>Note 2</i>	6-12mm thick
Lipping Adhesive	Urea formaldehyde	–	–
Minimum leaf thickness	–	–	FD30 - 44mm FD60 - 54mm
Optional additional decorative finishes	Timber veneer or decorative plastic based laminate (to leaf faces only)	–	Maximum 2mm thick
	Paint or varnish	–	Maximum 0.5mm thick

Note 1 Lippings to be installed at vertical edges of each leaf or can be installed to all four edges, if required.

Note 2 Lippings to be straight grained hardwood, with minimum measured density at 12% moisture content and of appropriate quality in accordance with BS EN 942: 2007. Moisture content to be $11 \pm 2\%$ for UK market (or to suit internal joinery moisture content specification of export countries).

The machining of the core/lipping, and bonding process, must be such to ensure that no gaps occur between core and lipping.

3.3 Sliding Door Mechanism

There is one design of sliding door mechanism which is covered by this Field of Application Report but there are two variants of both FD30 and FD60 designs in order to accommodate different leaf thicknesses and heights, these are as follows:

Fire Rating	Maximum Door Leaf Size	Code	Door Thickness
FD30	2040mm x 826mm	SCLKFD30	44mm
FD30	2315mm x 930mm	SC10FD30	44mm
FD60	2040mm x 826mm	SCLKFD60	54mm
FD60	2315mm x 930mm	SC10FD60	54mm

Drawings showing the essential component parts of the sliding door mechanism are contained in Appendix B of this report but in summary, the sliding door mechanism comprises the following elements:

Component	Description	
Header Track	1887mm x 55mm x 30mm - Extruded Aluminium	
Long Upright	2300mm x 55mm x 20mm - Extruded Aluminium	
Noggin	545mm x 55mm x 20mm - Extruded Aluminium	
Tie Back	305mm x 55mm x 20mm - Extruded Aluminium	
Hangers	58mm x 17mm galvanised steel body with 2no. 22mm diameter silicone rubber wheels	
Floor Bracket	100mm x 83mm x 4mm - Extruded Aluminium	
Rotating Door Guide	52mm diameter with 2no. 22mm blades - Plastic	
Trucking Channel	2355mm x 95mm x 31mm – Galvanised Steel	
Softwood/finger-jointed Poplar Liner Kit (minimum density 510kg/m ³) <i>Note 3</i>	Track Packer	1845mm x 29mm x 22mm
	Non-Brush Header	1765mm x 50mm x 32mm
	Non-Brush Upright	2347mm x 32mm x 29mm
	Jamb Intumescent Upright	2347mm x 123mm x 30mm
Intumescent Seal	30mm x 4mm pvc encased Pyroplex Ltd seal fitted either side of the leaf head in the softwood 'Non-brush header'.	
	15mm x 4mm pvc encased Pyroplex Ltd seal fitted either side of the leaf head in the softwood 'Non-brush header'.	
	15mm x 4mm pvc encased Pyroplex Ltd seal fitted either side of the vertical leaf edges in the softwood 'Non-brush upright' and 'Non-brush jamb upright'.	
	10mm x 4mm pvc encased Pyroplex Ltd seal fitted either side of the 'Floor guide assembly' in the base of the door leaf (FD30 only).	

Component	Description
Acoustic Smoke Seal	10mm x 10mm Deventer Delta Smoke Seal fitted either side of the leaf leading edge in the 'Non-brush upright'.
Perimeter Door Frame (minimum density 510kg/m ³) <i>Note 3</i>	100mm x 45mm softwood frame head, closing edge jamb and surrounding partition framework.
Plasterboard	2-layers of 12.5mm thick Type F wallboard fitted either side of the partition with the outer layer oversailing the 'Header', 'Non brush upright' and 'Intumescent jamb upright'.
Self-Closing Mechanism	730mm x 21mm diameter fixed to trunking channel

See Figures PAR/19590/01: B01 and B02 in Appendix B

Note 3 Timber must have a minimum measured density at 12% moisture content. The timber must be straight grained and of appropriate quality in accordance with BS EN 942: 2007. The moisture content shall be $11 \pm 2\%$ for UK market, (or to suit internal joinery moisture content specification of export countries).

3.4 Glazed Apertures

Glazed apertures are not supported by this Field of Application Report.

3.5 Recessed Pull Handles

There are two options of recessed pull handle for consideration which are detailed in Appendix A but a general description is as follows:

Circular Set

There are 2no. designs of circular flush pulls which are die cast from Zamak alloy. The main flush pull design is fitted back to back through the face of the leaves (but can also be fitted off-set if required) and has an outer diameter of 57mm and a recessed area of 48mm diameter x 10.5mm deep.

The other design of flush pull is a smaller finger pull fitted into the leaf edge with an outer diameter of 29mm and a recessed area of 25mm diameter x 18mm deep (which could also be used in conjunction with the oval flush pull handle design outlined below).

Oval Flush Pull

2no. oval flush pulls fitted back to back through the face of the leaves (but can also be fitted off-set if required) which are made from stainless steel and clipped into a previously screw fitted injection moulded carrier measuring 144mm high x 44mm wide resulting in a recessed area of 111mm long x 34mm wide x 10mm deep.

3.5.1 FD30 door assemblies

The fire resistance tests referenced in Appendix C of this report provide evidence that both Strebord and Halspan (Optima/Prima) 44mm thick door blanks are capable of having large recessed areas removed from either face without this compromising their intended fire performance. Both door types have achieved in excess of 25% over-performance beyond the required 30 minutes when recessed panels were incorporated in the door leaf design where the panels had a minimum thickness of 28mm.

Both types of flush pull handles are recessed into the leaf face by up to 10.5mm deep which would leave a minimum of 23mm of leaf core remaining in place between pull handles, if they were to be fitted back to back. Whilst this is less than the 28mm thickness of door core proven in the panelled door tests referenced in Appendix C, their fitment can be approved on the following basis:

- The overall 'footprint' area of the flush pull handles is substantially smaller than the area of panels tested;
- The 25% over-performance of the tested panelled door designs provides a good margin of safety towards compensating for the reduced thickness of door leaf material between back to back fitted flush pull handles;
- If fitted back to back, an additional 1mm thick layer of graphite based or low pressure forming intumescent sheet material is to be adhered to the concealed base of the flush pull handle, or bottom of the recess which has been routed into the leaf face to accommodate the handles. (If handles are offset so they are not installed back to back, the additional intumescent protection will not be required).

3.5.2 FD60 door assemblies

The fire resistance tests referenced in Appendix C of this report provide evidence that both Strebord and Halspan (Optima/Prima) door blanks are capable of having large recessed areas removed from either face without this compromising their intended fire performance. Both door types have achieved in excess of 17% over-performance beyond the required 60 minutes when recessed panels were incorporated in the door leaf design where the panels had a minimum thickness of 36mm.

Both types of flush pull handles are recessed into the leaf face by up to 10.5mm deep which would leave a minimum of 33mm of leaf core remaining in place between pull handles, if they were to be fitted back to back. Whilst this is less than the 36mm thickness of door core proven in the panelled door tests referenced in Appendix C, their fitment can be approved on the following basis:

- The overall 'footprint' area of the flush pull handles is substantially smaller than the area of panels tested;
- The 17% over-performance of the tested panelled door designs provides a margin of safety towards compensating for the reduced thickness of door leaf material between back to back fitted flush pull handles;

- If fitted back to back, an additional 2mm thick layer of graphite based or low pressure forming intumescent sheet material is to be adhered to the concealed base of the flush pull handle, or bottom of the recess which has been routed into the leaf face to accommodate the handles. (If handles are offset so they are not installed back to back, the additional intumescent protection will not be required).

3.5.3 Specific requirements

Care must be taken to ensure accurate machining into the leaf faces/edges is achieved in order to facilitate a tight fit of the flush pull handles.

Where silicone is to be used to help retain the flush pull handles in position, it must be ensured that it is fire rated so that it does not have a detrimental effect on the fire performance of the recessed pull handles.

The flush pull handles fitted into the leaf faces must be no closer than 100mm from the leading edge of the leaf and all handles to be fitted 1000mm up from the finished floor level +/- 200mm.

The 29mm diameter finger pull with a 25mm diameter x 18mm deep recess fitted into the leaf edge will not require additional intumescent protection for 30 or 60 minutes as it will be protected from exposure to fire by the intumescent strips fitted in the 'Upright Jamb' section of framing.

3.6 Installation and Supporting Construction and Door Edge

The sliding door designs must be installed in accordance with the details outlined in the PC Henderson Ltd fire resistance test reports referenced WF399104 and WF399097, and the PC Henderson Ltd 'Pocket Door Pro' fitting instructions.

The supporting construction must be a timber stud plasterboard clad partition, as tested, to provide in excess of 30 or 60 minutes fire resistance, as applicable, at the required size.

The gaps between the leaf face and the opposing frame section should aim to be 2–5mm but should not exceed 8mm. Gaps under the door shall not exceed 13mm.

4. CONCLUSION

It is the opinion of International Fire Consultants Ltd that if the proposed sliding door assemblies utilising Strebord or Halspan (Optima/Prima) door leaves fitted with flush pull handles and installed in PC Henderson Ltd's sliding door mechanism (as referenced in Section 3.3) and installed within the limitations of this Field of Application Report and tested for fire resistance, they would satisfy the integrity criteria of BS476: Part 22: 1987 for 30 or 60 minutes, as applicable.

The door assemblies can also be assessed to Section 6 of BS476: Part 22: 1987 for a 30 or 60 minute performance rating, as applicable, for both integrity and insulation.

5. DECLARATION BY THE APPLICANT

We the undersigned, confirm that, except for that information declared to International Fire Consultants Ltd previously during the original engineering evaluation process, the components, products, and/or assemblies evaluated within IFC Field of Application Report PAR/19590/01 have not been altered in any way; and have not subsequently, to our knowledge, been included in a fire test [to BS476: Part 22: 1987] in the form and/or configurations proposed.

We also confirm that we have supplied all information and assurances requested of us, for the purpose of writing this Field of Application Report and are not aware of any other information that would adversely influence or affect the conclusions of this report.

We agree that if fire test evidence or other information subsequently becomes available, to supply this to IFC in full and seek immediate review of the continuing validity of the original report from IFC. If after review IFC conclude that the original evaluation and report is no longer appropriate, we agree to withdraw it and any references to it from circulation and advise clients and agents accordingly.

Signature:

Position:

Company:

PC Henderson Ltd

6. LIMITATIONS

This report addresses itself solely to the ability of the proposed assemblies described to satisfy the criteria of the fire resistance test and does not imply any suitability for use with respect to other unspecified criteria.

This document only considers the door assemblies described, herein, and assumes that the surrounding construction will provide no less restraint than the tested assembly and that it will remain in place and be substantially intact for the full fire resistance period.

This report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, IFC reserves the right to withdraw the report unconditionally but not retrospectively.

Where the constructional information in this report is taken from details provided to International Fire Consultants Ltd (IFC) and/or from fire resistance test reports referenced herein, it is, therefore, limited to the information given in those documents. It is necessarily dependent upon the accuracy and completeness of that information. Where constructional or manufacturing details are not specified, or discussed, herein, it should not, therefore, be taken to infer approval of variation in such details from those tested or otherwise approved.

The analysis and conclusions within this report are based upon the likely fire resisting performance of a complete door assembly that is manufactured and installed in accordance with this document and offered for fire resistance testing in 'perfect' condition. In practice, management procedures must be in place in any building where the door assemblies are installed, to ensure that no parts of the assembly are damaged or faulty. Further, the doors must open and close without the use of undue force. The edge gaps/alignment of door leaves must be in accordance with the tolerances defined, herein, when the doors are closed. Any such shortfalls in respect to the condition of the assemblies will invalidate the approval by IFC, and may seriously affect the ability of the assemblies to provide the required level of fire resistance performance. Determination of what constitutes wear or damage, and any corrective actions in order to return assemblies to the required condition, should only be carried out following consultation with the manufacturer and IFC.

This report applies to fire door assemblies that are evaluated to BS476: Part 22: 1987; which is an applicable test method currently referenced within guidance to Building Regulations in the United Kingdom, and in building codes in some other countries. However, IFC have a duty of care to advise that introduction of CE Marking may become compulsory for fire doorsets marketed in the EU, during the validity period of this report; in which case, users should contact IFC for further details/advice.

Where the assessed constructions have not been subject to an on-site audit by International Fire Consultants Ltd, it is the responsibility of anyone using this report to confirm that all aspects of the assemblies fully comply with the descriptions and limitations, herein.

Any materials specified in this report have been selected and judged primarily on their fire performance. IFC do not claim expertise in areas other than fire safety. Whilst observing all possible care in the specification of solutions, we would draw the reader's attention to the fact that during the construction and procurement process, the materials used should be subjected to more general examination regarding the wider Health and Safety, and CoSHH Regulations. Designers, manufacturers and installers are reminded of their responsibilities under the CDM Regulations; but particularly with regard to installation and maintenance of heavy or inaccessible items.

This assessment considers the fire resistance performance of the door assemblies when tested with the leaves in the closed position, within the frame reveal; retained by the self-closing device. The door assemblies will only provide the assessed fire performance when in a similar configuration; and it is the responsibility of the building occupants/owner to ensure that this is the case.

This Report is provided to the sponsor on the basis that it is a professional independent engineering opinion as to what the fire performance of the construction/system would be should it to be tested to the named standard. It is IFC's experience that such an opinion is normally acceptable in support of an application for building approvals, certainly throughout the UK and in many parts of Europe and the rest of the world.

However, unless IFC have been commissioned to liaise with the Authorities that have jurisdiction for the building in question for the purpose of obtaining the necessary approvals, IFC cannot assure that the document will satisfy the requirements of the particular building regulations for any building being constructed.

It is, therefore, the responsibility of the sponsor to establish whether this evidence is appropriate for the application for which it is being supplied and IFC cannot take responsibility for any costs incurred as a result of any rejection of the document for reasons outside of our control. Early submittal of the Report to the Authorities will minimise any risks in this respect.

7. VALIDITY

This Field of Application Report has been prepared based on International Fire Consultants Ltd's present knowledge of the products described, the stated testing regime and the submitted test evidence. For this reason, anyone using this document after July 2024 should confirm its ongoing validity.

This Field of Application Report is not valid unless it incorporates the declaration by the applicant given in Section 6 duly signed by the applicant.

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APPENDIX A

Figures PAR/19590/01:A01 to A02

Flush Pull Handle Designs

Flush Pull Handle Designs

SET CONTENTS:

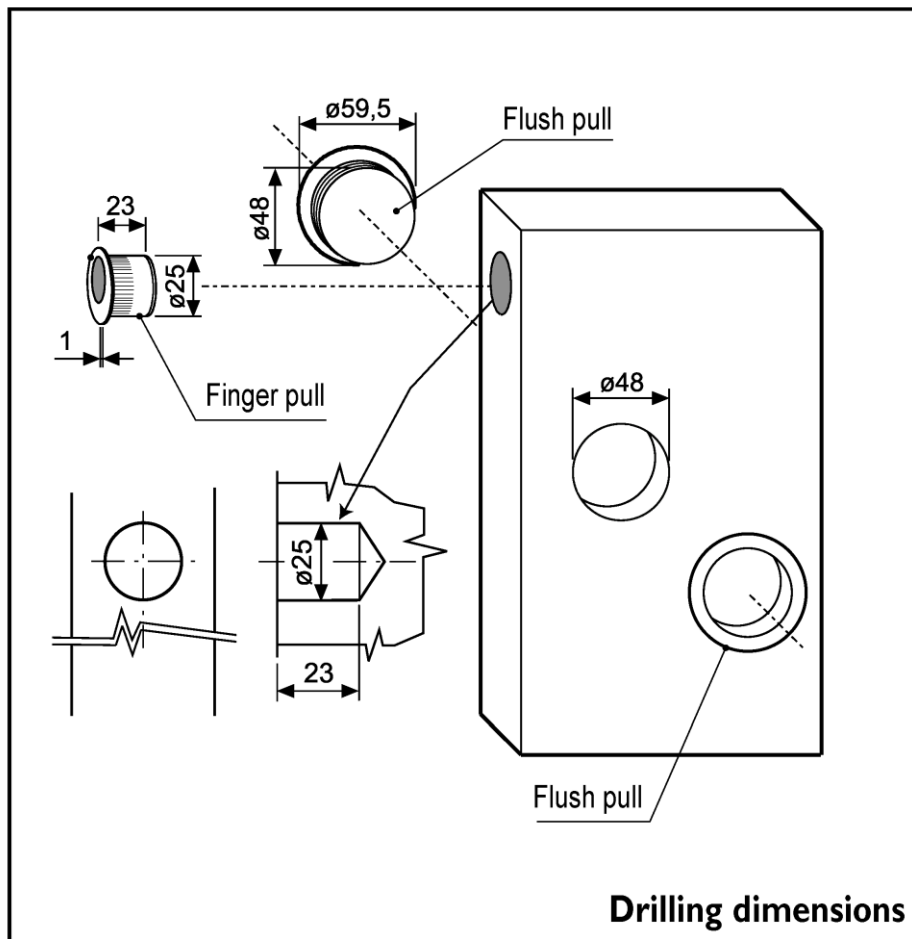
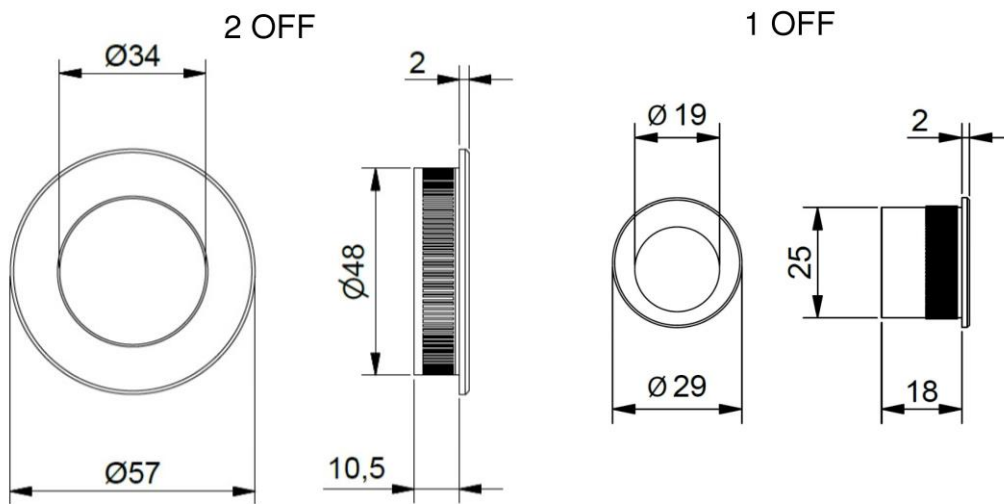


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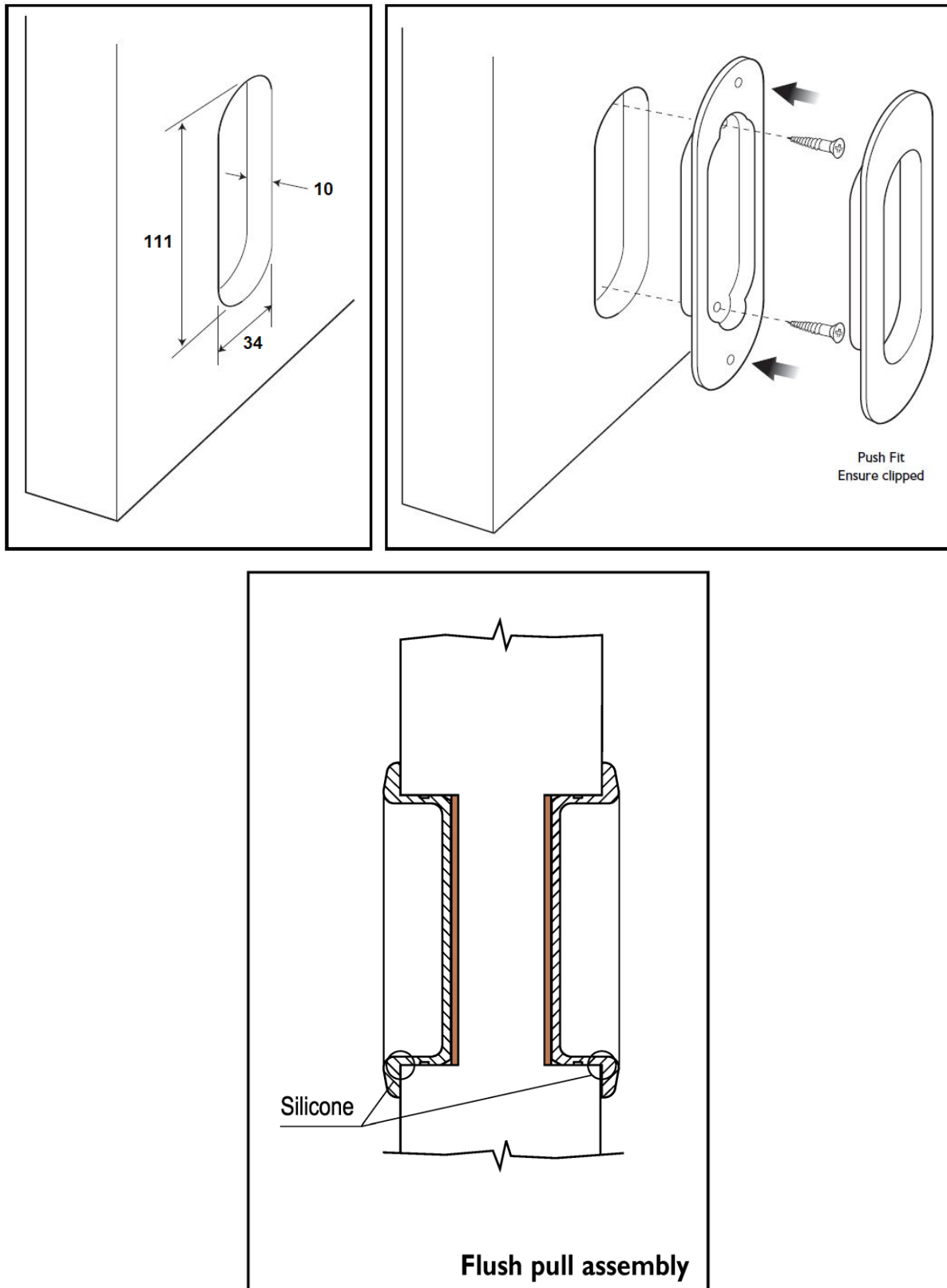


Figure PAR/19590/01:A02

APPENDIX B

Figures PAR/19590/01:B01 to B02

Sliding Door Components/Elevations

Sliding Door Components

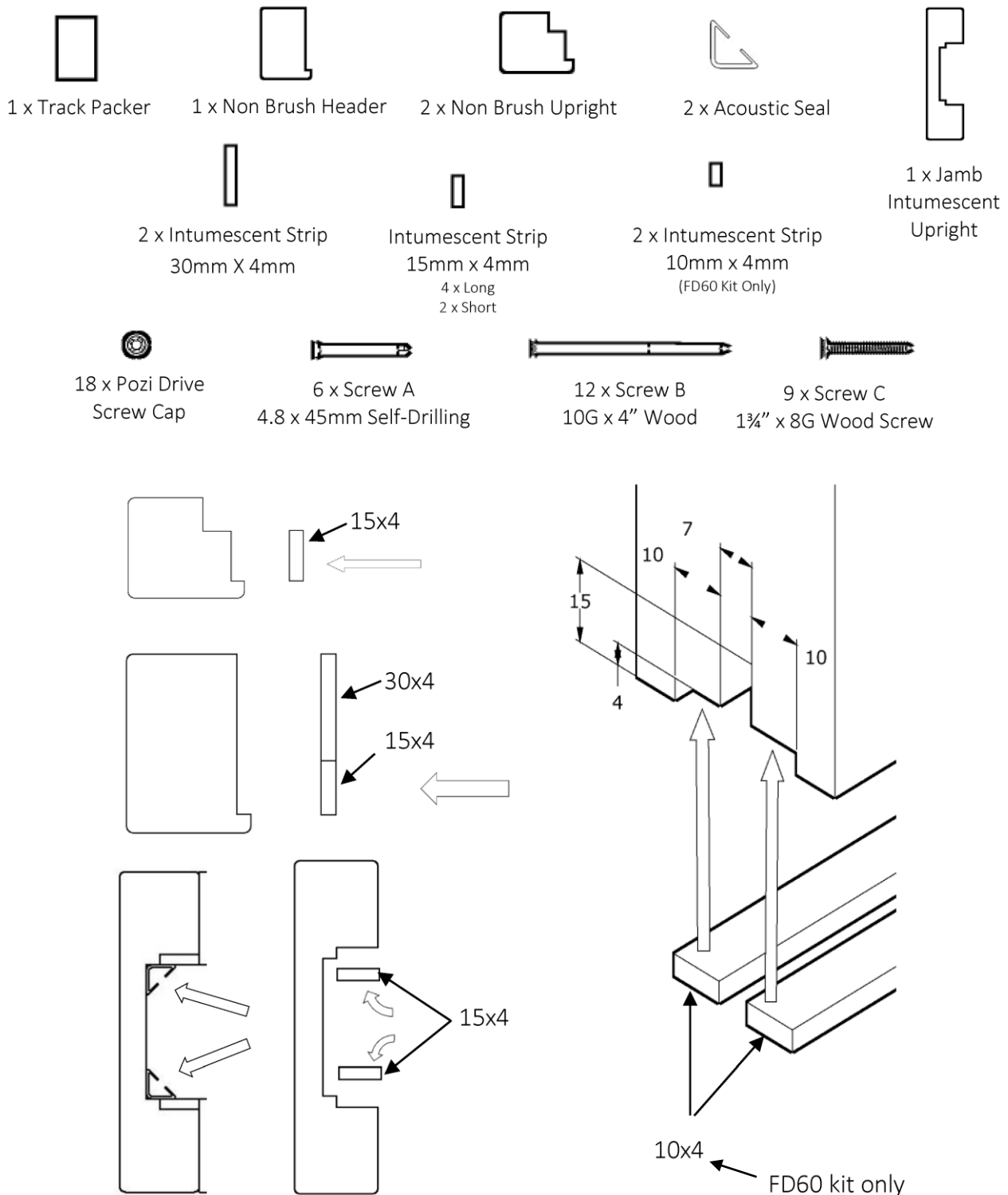


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Sliding Door Elevations

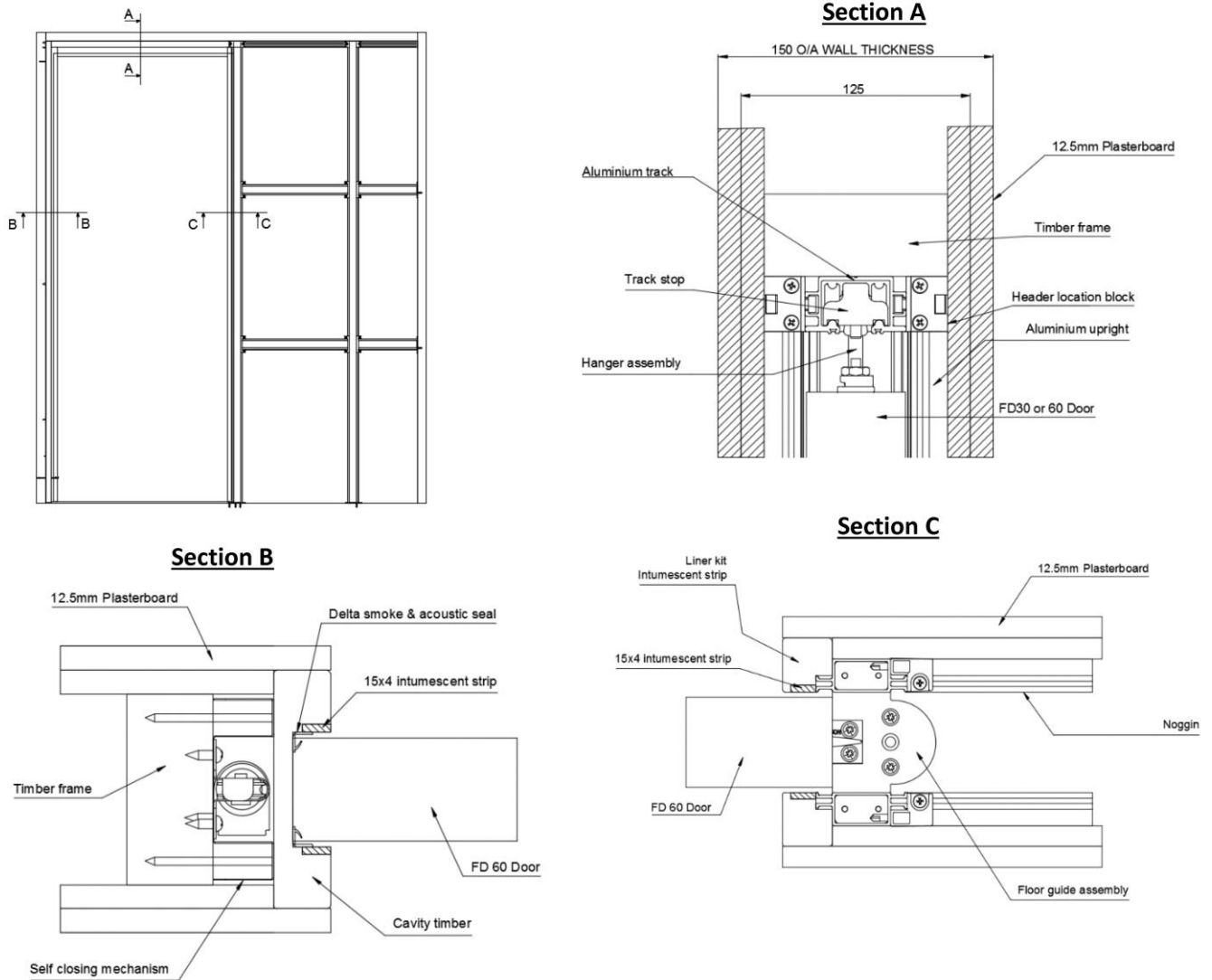


Figure PAR/19590/01:B02

Field of Application for FD30 and FD60 Strebor/Halspan
Door Leaves Installed as Pocket Doors with Recessed Pull
Handles in Accordance with BS476: Part 22: 1987

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APPENDIX C

Summary of Primary Fire Test Evidence

PC Henderson

Test Report	Configuration Tested	Leaf Size Tested	Test Standard	Panel Integrity
WF399104 (FD30)	Sliding Door	2315mm x 930mm x 44mm	BS476: Part 22: 1987	45 mins*
WF399097 (FD60)	Sliding Door	2315mm x 930mm x 54mm	BS476: Part 22: 1987	66 mins*

Summary of Supplementary Fire Test Evidence

Strebord

Test Report	Configuration Tested	Leaf Size Tested	Test Standard	Panel Integrity
RF09060 (FD30)	ULSASD (Doorset A)	2135mm x 932mm x 44mm	BS476: Part 22: 1987	43 mins*
IF0035 (FD60)	Fixed leaf panel	1000mm x 915mm x 54mm	Principles of BS476: Part 22: 1987	71 mins

Halspan

Test Report	Configuration Tested	Leaf Size Tested	Test Standard	Panel Integrity
RF05148 (FD30)	ULSASD (Doorset A)	2038mm x 912mm x 44mm	BS476: Part 22: 1987	38 mins*
RF00165 (FD60)	ULSADD	2042mm x 826/826mm x 54mm	BS476: Part 22: 1987	73 mins

** No failure relating to the panel upon termination of the test*

ULSASD = Unlatched, Single Acting, Single leaf Door assembly
ULSADD = Unlatched, Single Acting, Double leaf Door assembly

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