March 2025

# Field of Application Report

KFS Report PAR/10341/02 Revision C

## Fire Resistance Standard: BS476: Part 22: 1987

Partner for Progress

### Prepared for:

Halspan Ltd
Regent House
Regent Centre
Linlithgow
West Lothian
EH49 7HU

### Assessed Product/System:

Halspan Optima Timber Door Type

### Assessed Performance:

60 minutes fire resistance to BS476: Part 22: 1987

| Issue Date | Expiry Date |
|---|---|
| 31 March 2025 | 31 March 2030 |

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# Kiwa Fire Safety Compliance

Kiwa Fire Safety Compliance (KFS) is part of the **Kiwa UK Group**. The company is a specialist engineering consultancy delivering independent, honest and practical fire safety solutions to professionals across the built environment. The sought after fire safety advice protects life, preserves property and safeguards business continuity.

Formerly called International Fire Consultants, the company was established in 1985 to provide high quality and impartial technical expertise concerning fire safety. Since then the team of highly qualified Fire Engineers and Fire Safety Professionals have continued to deliver robust, innovative and cost-effective fire safety solutions, including Assessments, Designs and Inspections.

Kiwa Fire Safety Compliance lend their insight and practical expertise for: Fire Safety Engineering, Fire Risk Management, Product Evaluation, Fire Life Safety Systems, Expert Witness Testimony and Fire Protection Training, to developments of all sizes and complexities; from residential, education and healthcare structures to sporting venues, airports and iconic heritage buildings, such as historical royal palaces and stately homes.

Recognised internationally as the go-to professionals in all aspects of fire safety, Kiwa Fire Safety Compliance is one of the world's leading fire engineering and solution providers, trusted by many of the most prestigious construction firms, architects and estate owners.


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## Private and Confidential



| | |
|---|---|
| **Report Reference Number:** | KFS Report PAR/10341/02 Revision C |
| **Prepared on behalf of:** | Halspan Ltd |
| **Project:** | Regent House<br>Regent Centre<br>Linlithgow<br>West Lothian<br>EH49 7HU |
| **Issue Date:** | 31 March 2025 |
| **Expiry Date:** | 31 March 2030 |
| **Ref ID:** | 22453 |

# Issue and Amendment Record

| REV | DATE | AUTHOR | REVIEW | SECTION | AMENDMENTS |
|---|---|---|---|---|---|
| PAR/10341/02 | July 2010 | DC | DI | - | - |
| Revision A | September 2010 | DC | DI | - | Clarification of dimensions of timber frames with integral architraves |
| Revision B | January 2016 | DC | DI | - | Revalidation, update of format inclusion of additional test evidence and associated changes |
| Revision C | March 2025 | CA | WL | - | - |
| | | | | | |

# Contents

# 1. Introduction

This report has been prepared by Kiwa Fire Safety Compliance (KFS), on the instruction of Halspan Ltd, to define the Field of Application for the Optima FD60 timber door type, comprising timber door leaves installed in timber and steel frames, that are required to provide 60 minutes fire resistance performance, when adjudged against BS476: Part 22: 1987.

This assessment has been produced using the principles outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*.

When establishing the variations in the construction that can achieve the required fire resistance performance, KFS complies with the principles found in the following documents:

- 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'.*
- EN 15725: 2023: *'Extended application reports on the fire performance of construction products and building elements'.*

It is proposed that variations to the tested specifications, as described in the following sections, may be accommodated into door assemblies, without reducing their potential to achieve a 60 minute integrity rating, 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, all other aspects must otherwise be as proven in tests summarised herein.

# 2. Use of this Report

The approved scope detailed herein is specific to the Optima FD60 timber door type and it must not be used either in part, or whole form, to support other door assemblies/ranges/designs.

When the Optima FD60 door type is installed under the scope of this Field of Application Report, a full and complete copy of this document, along with any relevant supporting information, must be submitted to Building Control as part of the approval process, so as to demonstrate compliance with Regulatory guidance (i.e. Building Regulations)

In addition, a copy of this report, along with any relevant supporting information, must be included in the O&M manual and Fire Safety Information Files prior to project completion/building handover.

Assessments, certificates, or scope of approval documents issued by organisations other than KFS must not be used in conjunction with this report or in support of any element of the proposed door assemblies.

# 3. Fire Test Evidence

## 3.1 General

Following completion of a fire test, the relevant fire test laboratory will issue a test report to the test sponsor. This document summarises the test specimen construction, the test conditions/data and the test results. It is this test data which KFS evaluate to determine the approved scope detailed within this Field of Application Report.

Approved Document B of the Building Regulations (2019 Edition with 2020 Amendments), the Scottish Building Standards Technical Handbook (2013 Edition) or the Building Regulations (Northern Ireland) 2012 stipulate that all fire resisting door assemblies must have been successfully fire tested in accordance with BS476: Part 22: 1987 or BS EN 1634-1:2014+A1:2018.

The BS476: Part 22: 1987 or BS EN 1634-1:2014+A1:2018 fire test evidence which has been used in support of this Field of Application Report is summarised in Appendix J.

Only the critical details for each fire test report are detailed in Appendix J to ensure that:

- The full details of the fire test reports remain confidential, therefore protecting the intellectual property of the fire test sponsors
- The size/length of this report is kept to a minimum, so that it remains useable

If full copies of the referenced fire test reports are required, then requests for this information should be directed to Halspan Ltd.

## 3.2 Suitability of Fire Test Evidence

The fire test reports summarised in Appendix J have been reviewed by KFS in accordance with the principles outlined in the Passive Fire Protection Forum (PFPF): 'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure' to ensure they are original, complete and relevant to the proposed construction/application.

Where fire test reports are more than 5 years old, additional checks have been undertaken by KFS to ensure they remain valid.

The BS EN 1634-1 fire test standard has been revised a number of times since 2000, and the current version is BS EN 1634-1:2014+A1:2018. KFS have concluded that the revisions to this fire test standard would not have had a critical impact on the fire test result, or data, and, as such, fire tests undertaken in accordance with BS EN 1634-1:2000, BS EN 1634-1:2008, BS EN 1634-1:2014 and BS EN 1634-1:2014+A1:2018 have been accepted as supporting evidence for this Field of Application Report.

A number of the fire tests referenced in Appendix J comprised specimens which experienced premature integrity failure. This does not exclude the use of these fire test reports in support of items or details which:

- Did not directly contribute to the failure
- Were remote from the point of failure
- Continued to satisfy the test criteria for the required period of fire resistance

Where premature integrity failures did occur, these are detailed in Appendix J alongside the relevant fire test report/s with additional notes added for clarification.

## 3.3 Use of BS and EN Test Evidence

The appropriate performance of fire resisting doorsets is defined in Approved Document B of the Building Regulations England (2019 Edition with 2020 Amendments), the Scottish Building Standards Technical Handbook (2019 edition), Approved Document B of the Building Regulations Wales (2006 Edition with 2010, 2013, 2016, 2017 and 2020 Amendments) or the Building Regulations (Northern Ireland) 2012.

Table C1 in Appendix C of Approved Document B, which applies to England, identifies doorsets by their performance under test to BS EN 1634-1 or BS476: Part 22: 1987, in terms of integrity for a period of minutes, (e.g., E30/E60, if their performance is measured in terms of EN 1634-1, or FD60/FD60 for BS476: Part 22: 1987). It should be noted that a suffix (S) is added for doors where restricted smoke leakage at ambient temperatures is needed. The Scottish, Welsh and Northern Ireland documents also refer to the British and European Standards in Section 2D, Table B1 in Appendix B and Section B3 respectively of these documents.

These guidance documents thus give a parity of performance between the two test methods, and although the EN 1634-1 and the BS476: Part 22: 1987 test procedures are both generally based upon the ISO 834 fire resistance test method, there are differences. The major ones are thus;

a. The method of measuring the furnace (exposure) temperature in the EN 1634-1 test is by means of plate thermocouples. The 'plates' have a greater thermal inertia than the bead thermocouples used in the BS476: Part 22: 1987 test, and therefore the heat input is higher than that given in BS476 at any given time during approximately the first 15 minutes of a fire resistance test.

b. The furnace pressure in the EN 1634-1 test is neutral at a position 500mm above the threshold, compared to a nominal 1 metre in the BS476: Part 22: 1987 test. As a consequence, the pressure over the upper part of the doorset is higher and, therefore, is more onerous in the EN test.

There are other minor procedural matters that also increase the severity of the EN method. These, combined with the issues identified in a) and b) above, mean that the EN 1634-1 test is generally accepted as being a more onerous test than BS476: Part 22: 1987. This is borne out by KFS's experience of fire resistance testing already performed since the introduction of the European test standard.

As such, it is our opinion that any test results on doorsets tested to EN 1634-1 can be utilised in situations requiring a performance defined against the BS476: Part 22 test method, or when making assessments and judgements against the BS476 criteria, but not vice versa.

## 3.4 Door Orientation

When undertaking the fire testing of a hinged or pivoted timber door assembly, it is generally considered that the most onerous configuration for the test specimen is with the door leaf/leaves opening in towards the furnace. This is formalised in Section 13.4.2 of BS EN 1634-1: 2014+A1: 2018. Halspan have carried out fire resistance testing with door leaves opening towards and away from the furnace.

Unless stated otherwise herein, where a door configuration/construction has been fire tested with the door leaf/leaves opening in towards the test furnace, the approval within this Field of Application Report permits the door configuration/construction to be installed with the door leaf/leaves opening in the opposite direction (i.e. away from the furnace/risk side).

This principle is only applicable when the door construction, and any features within the door leaf/leaves, such as glazing, are symmetrical. In scenarios where an asymmetrical construction has only been fire tested in one orientation, then this Field of Application Report will limit its use as such, with a clear stipulation on which elements of the construction must be orientated towards the fire risk side of the door assembly.

Although uncommon, the inclusion of certain items/details within a door assembly may mean that the most onerous fire test configuration is one where the door leaf/leaves open away from furnace. In these scenarios, the door construction/configuration must have been fire tested with door leaf/leaves opening away from furnace in order to achieve approval by KFS.

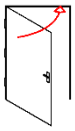
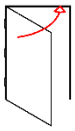
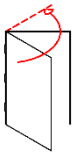
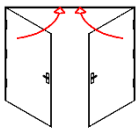
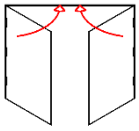
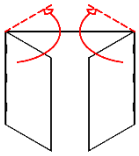
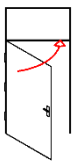
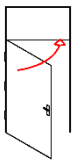
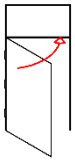
# 4. Approved Door Assembly Configurations

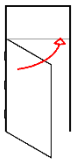
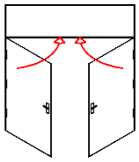
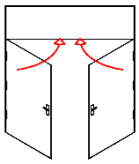
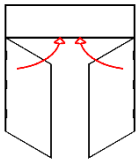
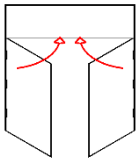
## 4.1 General Requirements/Notes

| GENERAL REQUIREMENTS/NOTES |
| --- |
| • The tables in Section 4.2, provide an overview of the door assembly configurations approved by KFS for use with the Optima FD60 door type<br>• The approved leaf configurations may be further restricted when specific design details or items are included<br>• A table is included within each section of this report which details the leaf configuration/s, maximum leaf size, door construction options, frame options and perimeter intumescent seal specifications which are approved with each item/detail. Where the requirements within these tables differ across multiple items/details which are included in the same door assembly then the lowest common denominators must be selected for the proposed configuration (i.e. the smallest leaf size, the greatest intumescent specification etc)<br>• Unless stated otherwise, herein, this Field of Application Report considers the scope of approval for door assemblies that may be installed in either orientation, that being with either face exposed to fire conditions |

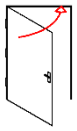
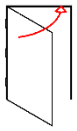
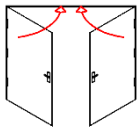
## 4.2 Door Assembly Configurations

### 4.2.1 54mm Optima FD60 Doors in Hardwood Frames

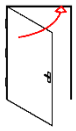
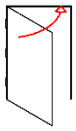
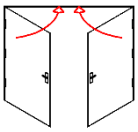
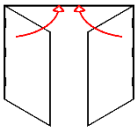
| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | A01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | A02 |
|  | • Unlatched<br>• Double Acting<br>• Single Door | DASD | A03 |
|  | • Latched<br>• Single Acting<br>• Double Door | LSADD | A04 |
|  | • Unlatched<br>• Single Acting<br>• Double Door | ULSADD | A05 |
|  | • Unlatched<br>• Double Acting<br>• Double Door | DADD | A06 |
|  | • Latched<br>• Single Acting<br>• Single Door<br>• With Transomed Overpanel | LSASD.OP | A07 |
|  | • Latched<br>• Single Acting<br>• Single Door<br>• With Equally Rebated Overpanel | LSASD.OP | A08 |
|  | • Unlatched<br>• Single Acting<br>• Single Door<br>• With Transomed Overpanel | ULSASD.OP | A09 |

| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Unlatched<br>• Single Acting<br>• Single Door<br>• With Equally Rebated Overpanel | ULSASD.OP | A10 |
|  | • Latched<br>• Single Acting<br>• Double Door<br>• With Transomed Overpanel | LSADD.OP | A11 |
|  | • Latched<br>• Single Acting<br>• Double Door<br>• With Equally Rebated Overpanel | LSADD.OP | A12 |
|  | • Unlatched<br>• Single Acting<br>• Double Door<br>• With Transomed Overpanel | ULSADD.OP | A13 |
|  | • Unlatched<br>• Single Acting<br>• Double Door<br>• With Equally Rebated Overpanel | ULSADD.OP | A14 |

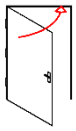
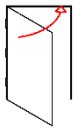
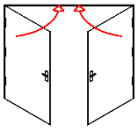
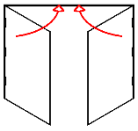
### 4.2.2 54mm Optima FD60 Doors in MDF Frames

| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | B01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | B02 |
|  | • Latched<br>• Single Acting<br>• Double Door | ULSADD | B03 |

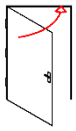
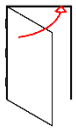
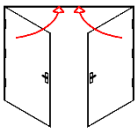
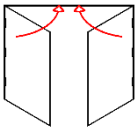
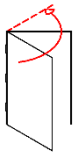
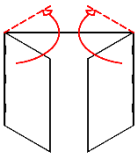
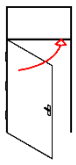
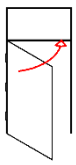
### 4.2.3 54mm Optima FD60 Doors in Hollow Steel Frames

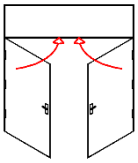
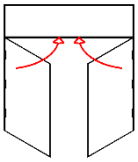
| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | C01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | C02 |
|  | • Latched<br>• Single Acting<br>• Double Door | LSADD | C03 |
|  | • Unlatched<br>• Single Acting<br>• Double Door | ULSADD | C04 |

### 4.2.4 54mm Optima FD60 Doors in Backfilled Steel Frames

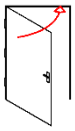
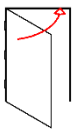
| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | D01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | D02 |
|  | • Latched<br>• Single Acting<br>• Double Door | LSADD | D03 |
|  | • Unlatched<br>• Single Acting<br>• Double Door | ULSADD | D04 |

### 4.2.5 54mm Optima Bond-Up FD60 Doors in Hardwood Frames

| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | E01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | E02 |
|  | • Latched<br>• Single Acting<br>• Double Door | LSADD | E03 |
|  | • Unlatched<br>• Single Acting<br>• Double Door | ULSADD | E04 |
|  | • Double Acting<br>• Single Door | DASD | E05 |
|  | • Double Acting<br>• Double Door | DADD | E06 |
|  | • Latched<br>• Single Acting<br>• Single Door<br>• With Transomed Overpanel | LSASD.OP | E07 |
|  | • Unlatched<br>• Single Acting<br>• Single Door<br>• With Transomed Overpanel | ULSASD.OP | E08 |

| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Double Door<br>• With Transomed Overpanel | LSADD.OP | E09 |
|  | • Unlatched<br>• Single Acting<br>• Double Door<br>• With Transomed Overpanel | ULSADD.OP | E10 |

### 4.2.6 54mm Optima Bond-Up FD60 Doors in MDF Frames

| LEAF/OVERPANEL CONFIGURATION | | CODE | LEAF ENVELOPE |
|---|---|---|---|
|  | • Latched<br>• Single Acting<br>• Single Door | LSASD | F01 |
|  | • Unlatched<br>• Single Acting<br>• Single Door | ULSASD | F02 |

### 4.2.7 54mm Optima Bond-Up FD60 Doors in Hollow Steel Frames

This door leaf construction type and frame combination is not approved in this report.

### 4.2.8 54mm Bond-Up FD60 Doors in Backfilled Steel Frames

This door leaf construction type and frame combination is not approved in this report.

# 5. Maximum Assessable Door Leaf Sizes

The calculated envelopes of assessed leaf dimensions for each door assembly configuration covered by this Field of Application report are given in Appendices A to H.

Double door assemblies may each be of the same width, up to the maximum width indicated in Appendix A or B. For unequal pairs there is no limit on the ratio of leaf widths, (although the large leaf must still be within the limitations in Appendices A to H. The width of the small leaf shall not be less than 250mm, since this will affect its vertical stability relative to that of the larger leaf.

# 6. Hardware

Hardware items which are approved for use with the Optima FD60 timber door assemblies are detailed in Appendix I of this report.

All hardware items must be installed in accordance with the manufacturer's instructions, except where specific installation requirements or limitations have been detailed by KFS.

# 7. Optima FD60 Constructional Details

## 7.1 General Requirements

<table>
<tr><th>ELEMENT</th><th colspan="2">SPECIFICATION/QUANTITY/DIMENSIONS</th></tr>
<tr><td>GENERAL</td><td colspan="2">The constructional details, specified herein, are based upon the details contained within the fire test evidence referenced in Appendix J, and define variations and tolerances, where KFS consider that these will not adversely affect the intended fire resistance performance. The construction details are limited to the information available from the fire test reports</td></tr>
<tr><td>TIMBER</td><td colspan="2">All timber used in the manufacture/construction of the proposed timber door assemblies must meet the following requirements:<br>1. Must achieve the stated minimum densities when measured at 9-12% moisture content<br>2. The timber must be straight grained and of appropriate quality in accordance with BS EN 942: 2007<br>3. The moisture content must be 11 ± 2% for the UK market, or to suit internal joinery moisture content specification of export countries</td></tr>
<tr><td rowspan="8">ADHESIVES</td><td colspan="2">All adhesives must be applied in a continuous bed, covering the entire surface area of the leaf face or leaf edge, as applicable. Unless specifically noted otherwise, this report does <u>not</u> permit the use of spot bonding</td></tr>
<tr><td>PU</td><td>Polyurethane</td></tr>
<tr><td>PUR</td><td>Polyurethane based hotmelt adhesives as tested by Halspan:<br>• Henkel Technomelt PUR 270/7 - WF504390, WF531368 & WF531374<br>• Jowat PU – Reactive - WF509420 & WF509421<br>• Kleiberit PUR Ref: 707.9.58 ME - WF533904 & WF533911<br><br>otherwise must have been successfully fire tested in accordance with BS476: Part22:1987 or BS EN 1634-1 for 60 minutes</td></tr>
<tr><td>RF</td><td>Resorcinol Formaldehyde</td></tr>
<tr><td>UF</td><td>Urea Formaldehyde</td></tr>
<tr><td>PF</td><td>Phenol Formaldehyde</td></tr>
<tr><td>PVA / PVAc</td><td>Polyvinyl Acetate</td></tr>
<tr><td colspan="2">Note The list above provides clarification on the abbreviated terms for common glue types, but not all these types may be approved. For glue types approved for use with the proposed timber door assemblies, refer to Section 7</td></tr>
<tr><td>DOOR LEAF SHAPE</td><td colspan="2">This report only approves doors that are rectilinear, i.e. adjacent door edges shall be straight, and at 90 degrees to each other, when viewed in elevation. In addition, doors shall be “flat”; i.e. not curved, when viewed in plan</td></tr>
<tr><td>ADDITIONAL NOTES/REQUIREMENTS</td><td colspan="2">Alternative materials/components to those approved herein, must not be used without prior consultation with KFS, regardless of how similar they may appear in terms of specification</td></tr>
</table>

## 7.2 Leaf and Overpanel Construction

### 7.2.1 Leaf and Overpanel Construction - 54mm Optima FD60

#### *7.2.1.1 Finished Leaf and Overpanel Thickness*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MIMIMUM LEAF THICKNESS | 53mm (Prior to the application of decorative leaf facings or finishes and/or calibration) |
| MAXIMUM LEAF THICKNESS | Refer to permitted decorative leaf facings and finishes detailed in Sections 7.5 and 7.6, respectively |
| ADDITIONAL NOTES/REQUIREMENTS | A maximum of 0.5mm of material may be removed from each face of the 54mm thick door blank for calibration purposes |

#### *7.2.1.2 Leaf and Overpanel Core Material*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| CORE MATERIAL | Particleboard |
| MINIMUM THICKNESS | 54mm (prior to calibration – refer to 7.2.1.1) |
| MINIMUM DENSITY | 630kg/m³ ±10% |
| ADDITIONAL NOTES/REQUIREMENTS | Jointing of the particleboard core is not permitted |

#### *7.2.1.3 Structural Sub-Facings*

Structural sub-facings are ***not*** permitted under the scope of this Field of Application Report

#### *7.2.1.4 Structural Leaf Facings*

Structural leaf facings are ***not*** permitted under the scope of this Field of Application Report

#### *7.2.1.5 Stiles and Rails*

Stiles and rails are ***not*** permitted under the scope of this Field of Application Report

## 7.2.2 Leaf and Overpanel Construction – 54mm Thick Optima FD60 Bond-Up

### *7.2.2.1 Finished Leaf and Overpanel Thickness*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MIMIMUM LEAF THICKNESS | 53mm (Prior to the application of decorative leaf facings or finishes) |
| MAXIMUM LEAF THICKNESS | Refer to permitted decorative leaf facings and finishes detailed in Sections 7.5 and 7.6, respectively |
| ADDITIONAL NOTES/REQUIREMENTS | A maximum of 0.5mm of material may be removed from each face of the 54mm thick door for calibration purposes |

### *7.2.2.2 Leaf and Overpanel Core Material*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| CORE MATERIAL | Particleboard |
| THICKNESS | 42-44mm (prior to calibration – refer to 7.2.2.1) |
| MINIMUM DENSITY | 630kg/m³ ±10% |
| ADDITIONAL NOTES/REQUIREMENTS | Jointing of the particleboard core is not permitted |

### *7.2.2.3 Structural Sub-Facings*

Structural sub-facings are ***not*** permitted under the scope of this Field of Application Report

### *7.2.2.4 Structural Leaf Facings*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| STRUCTURAL LEAF FACING OPTIONS | Option 1 | Hardwood plywood (Minimum density 750kg/m³) |
| | Option 2 | MDF (Minimum density 700kg/m³) |
| | Option 3 | Chipboard (Minimum density 750kg/m³) |
| STRUCTURAL LEAF FACING THICKNESS | 5mm facing applied to a 44mm thick blank<br>6mm facing applied to a 42mm thick blank | |
| LEAF FACING ADHESIVE | Urea Formaldehyde | |
| ADDITIONAL REQUIREMENTS/NOTES | A single structural leaf facing of the same type and thickness must be applied to each side of the core material detailed in Section 7.2.2.2. This assessment does not permit the Bond-up of a 54mm Optima blank, only a 42mm or 44mm thick blank is permitted, as tested in RF96062 and RF04074. | |

### *7.2.2.5 Stiles and Rails*

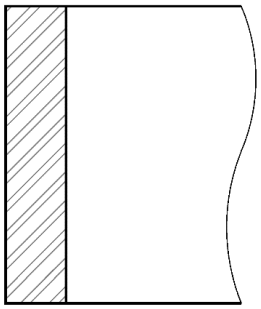
Stiles and rails are ***not*** permitted under the scope of this Field of Application Report

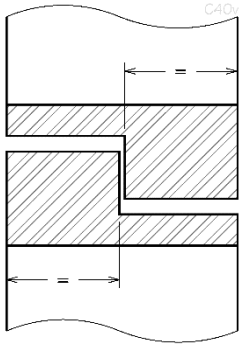
## 7.3 Door Lippings

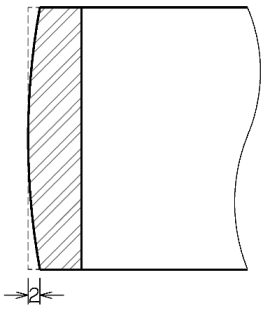
### 7.3.1 Timber Door Lippings – General

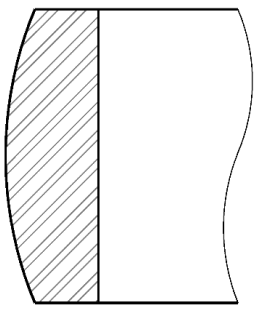
| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| LIPPING THICKNESS | Refer to Section 7.3.2 | |
| LIPPING PROFILES | | |
| LIPPING MATERIAL | Hardwood – Not Beech (Minimum density 640kg/m³) | |
| LIPPING ADHESIVE OPTIONS | Option 1 | Resorcinol Formaldehyde |
| | Option 2 | Urea Formaldehyde |
| | Option 3 | Polyurethane |
| | Option 4 | Polyurethane based hotmelt adhesives as tested by Halspan:<br>• Henkel Technomelt PUR 270/7 - WF504390, WF531368 & WF531374<br>• Jowat PU – Reactive - WF509420 & WF509421<br>• Kleiberit PUR Ref: 707.9.58 ME - WF533904 & WF533911<br><br>otherwise must have been successfully fire tested in accordance with BS476: Part:1987 or BS EN 1634-1 for 60 minutes |
| ADDITIONAL REQUIREMENTS/NOTES | • Lippings must be installed to both vertical leaf edges<br>• Lippings must be applied after the bonding of structural leaf faces (where applicable)<br>• Lippings may also be applied to the top and/or bottom leaf edges, if required<br>• Installed lippings may be reduced in thickness for site installation purposes, provided the minimum lipping thickness detailed in Section 7.3.2 is maintained<br>• There must be no gaps present between the core and lippings | |

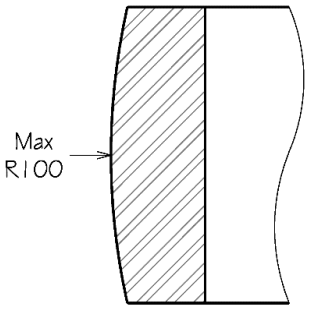
## 7.3.2 Timber Door Lippings – Lipping Thickness and Edge Profiles

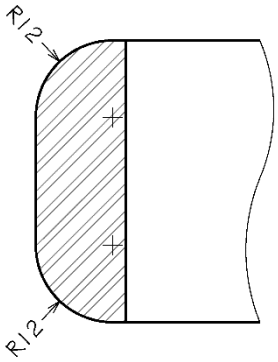
| EDGE TYPE L60/1 – SQUARE | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| All door leaf and overpanel edges | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 8-12mm | 8-12mm |
| ADDITIONAL REQUIREMENTS/NOTES | |
| None | |

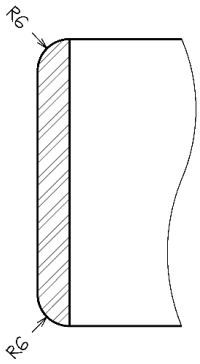
| EDGE TYPE L60/2 – EQUAL REBATE | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| Interface between leaf head and flush overpanel | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 18-22mm | N/A |
| ADDITIONAL REQUIREMENTS/NOTES | |
| 10-12mm deep rebate<br>Hardware is not permitted to be installed in a rebated leaf/overpanel interface | |

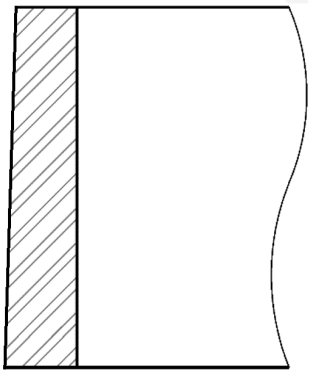
| EDGE TYPE L60/3 – SHALLOW RADIUS | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| • Closing edge of double acting doors<br>• Meeting stiles of double doors | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 8-12mm | N/A |
| ADDITIONAL REQUIREMENTS/NOTES | |
| The radius shall not remove more than 2mm thickness of lippings on the door face | |

| EDGE TYPE L60/4 – RADIUS PIVOT | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| Hanging edge of double acting doors<br>(Scalloped frame profile F60/4 only) | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 10-20mm | N/A |
| ADDITIONAL REQUIREMENTS/NOTES | |
| Radius to suit the pivot/floor spring employed | |

| EDGE TYPE L60/5 – RADIUS MEETING STILE |
|---|
|  |
| LIPPING LOCATION |
| Meeting stiles of double acting doors |
| This edge profile is not permitted under the scope of this Field of Application Report |

| EDGE TYPE L60/6 – 12MM RADIUS CORNERS |
|---|
|  |
| LIPPING LOCATION |
| Hanging edges of PVC encapsulated doors |
| This edge profile is not permitted under the scope of this Field of Application Report |

| EDGE TYPE L60/7 – 6MM RADIUS CORNERS | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| • Closing edge of double acting doors only | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 10-12mm | N/A |
| ADDITIONAL REQUIREMENTS/NOTES | |
| None | |

| EDGE TYPE L60/8 – MAXIMUM 2.5 DEGREE CLOSING LEAF EDGE | |
|---|---|
|  | |
| PERMITTED LIPPING LOCATION | |
| • Closing edge of single acting single leaves only | |
| LIPPING THICKNESS AND FRAME OPTIONS | |
| Timber | Steel |
| 10-12mm | N/A |
| ADDITIONAL REQUIREMENTS/NOTES | |
| Minimum thickness of 10mm must be maintained at the chamfer location. In all cases, the gap around the leaf edge(s) must be in accordance with Section 7.18.10 | |

### 7.3.3 Edgebanding

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| LIPPING THICKNESS | 2mm |
| LIPPING PROFILES | Square |
| MATERIAL | PVC |
| MINIMUM DENSITY | - |
| LIPPING ADHESIVE | Dorus US241/4 natur |
| ADDITIONAL REQUIREMENTS/NOTES | • Edge-banding must be installed to all leaf edges<br>• There must be no gaps present between the core and the edge-banding<br>• Only lipping type L60/1 is permitted to be used with Edgebanding, but with a maximum thickness of 2mm as stated above<br>• In all cases, the gap around the leaf edge(s) must be in accordance with Section 7.18.10<br>• When used at the meeting edges of double doors the following intumescent specification shall be used:<br>  • 2no 10 x 4 in active leaf edge spaced 20mm apart. 1no. 15 x 4 in passive leaf edge fitted centrally<br>• Concealed hardware, such as closers and hinges are not permitted with edgebanding<br>• Floor springs are not permitted with edgebanding<br>• Hardware Sections I.1 & I.5.1 are permitted.<br>• For use with timber frames only<br>• Not permitted for use with flush or rebated overpanel junctions.<br>• Must be used with latched single acting door assemblies. |
| FIRE RESISTANCE TEST DATA | RF08035 |

## 7.4 PVC Encapsulated Doors

PVC encapsulated doors are ***not*** permitted under the scope of this Field of Application Report

## 7.5 Decorative Leaf Facings

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| PERMITTED APPLICATION AREA | Leaf faces only | | | |
| DECORATIVE LEAF FACING OPTIONS | Option 1 | Timber veneer | Option 4 | Cellulosic foil |
| | Option 2 | High Pressure Laminate (HPL) | Option 5 | Paper |
| | Option 3 | PVC | Option 6 | Vinyl |
| MAXIMUM LEAF FACING THICKNESS | 2mm | | | |
| LEAF FACING ADHESIVE OPTIONS | Option 1 | Polyurethane | Option 4 | PVA |
| | Option 2 | Resorcinol Formaldehyde | Option 5 | Contact adhesive |
| | Option 3 | Urea Formaldehyde | | |
| ADDITIONAL REQUIREMENTS/NOTES | • All decorative leaf facings must be surface applied and must not be recessed into the door leaf face. However, decorative leaf facings may be applied following calibration (refer to Section 7.2)<br>• Decorative leaf facings are ***not*** permitted to return around the leaf edges<br>• With the exception of the push/kick plates detailed in Appendix I, metallic facings are not permitted | | | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| | | | | | Steel Frame | ✓ |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration |

## 7.6 Decorative Leaf Finishes

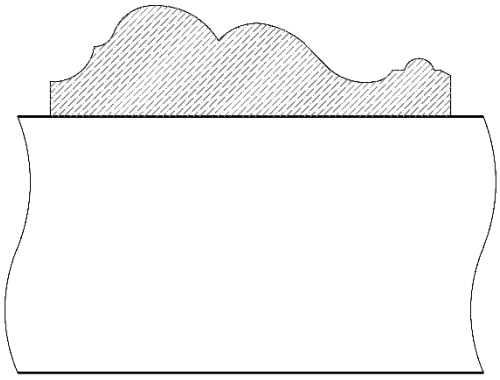
| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| PERMITTED APPLICATION AREA | Leaf faces and leaf edges | | | |
| DECORATIVE LEAF FINISH OPTIONS | Option 1 | Paint | Option 4 | Stain |
| | Option 2 | Lacquer | Option 5 | Grain filler/Epoxy Resin |
| | Option 3 | Varnish | | |
| MAXIMUM LEAF FINISH THICKNESS | 0.5mm, or a maximum of 5 coats, whichever is greater, per leaf face | | | |
| ADDITIONAL REQUIREMENTS/NOTES | Intumescent coatings are not permitted | | | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| | | | | | Steel Frame | ✓ |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration |

## 7.7 Decorative Timber Mouldings

### 7.7.1 Surface Applied Timber Mouldings

| DIAGRAM |
|---|
|  |
| *FIGURE IS TYICAL ONLY AND DESIGN MAY VARY* |

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MOULDING MATERIAL OPTIONS | Option 1 | Softwood |
| | Option 2 | Hardwood |
| | Option 3 | MDF |
| MAXIMUM MOULDING SIZE | No limitation but the timber mouldings must not increase the mass of the door leaf by more than 25% | |
| MOULDING POSITION | May be surface applied to one or both faces of the door leaf | |
| ADDITIONAL REQUIREMENTS/NOTES | • The moulding profile detailed above is indicative and alternative profiles may be used provided they meet the requirements outlined herein<br>• Timber mouldings must not return around the leaf edges or oversail glazing beads<br>• It is a limitation of the assessment that the timber mouldings must not unbalance the door leaf in-service, in order that the door leaf installation/alignment remains in accordance with the parameters in Section 7.18 | |

| DOOR CONFIGURATIONS | | | |
|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ |
| ULSASD | ✓ | ULSADD | ✓ |
| DASD | ✓ | DADD | ✓ |
| LSASD+OP | ✓ | LSADD+OP | ✓ |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ |
| DASD+OP | N/A | DADD+OP | N/A |

| MAXIMUM LEAF SIZE |
|---|
| Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration |

| DOOR CONSTRUCTION | |
|---|---|
| 54mm Optima | ✓ |
| 54mm Optima Bond-Up | ✓ |

| FRAME CONSTRUCTION | |
|---|---|
| Timber Frame | ✓ |
| Steel Frame | ✓ |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to the relevant Figure in Appendix A to H, as applicable for the proposed door configuration |

### 7.7.2 Recessed Timber Mouldings

Recessed timber mouldings are ***not*** permitted under the scope of this Field of Application Report

## 7.8 Feature Grooves

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | |
|---|---|---|---|
| MAXIMUM SIZE | Feature Groove | 50mm wide x 3mm deep | |
| GROOVE ORIENTATION/SPACING | Grooves may be orientated vertically and horizontally<br>Grooves must be located a minimum 125mm apart | | |
| MINIMUM DISTANCE TO LEAF EDGE | Top | Sides | Bottom |
| | 125mm | 125mm | 125mm |
| MINIMUM DISTANCE TO GLAZED APERTURE | 125mm | | |
| MINIMUM DISTANCE TO HARDWARE | Grooves are not permitted to be used with concealed hardware such as hinges or closers,<br>Grooves must not run behind the escutcheon of locks/latches | | |
| ADDITIONAL DESIGN DETAILS | In line with the minimum distance to leaf edge requirements stated above, neither vertical or horizontal feature grooves are permitted to run to the leaf edge. | | |
| FIRE TEST EVIDENCE | Chilt/RF00165 | | |

## 7.9 Recessed Panels

Recessed areas are ***not*** permitted under the scope of this Field of Application Report

## 7.10 Door Edge Protection

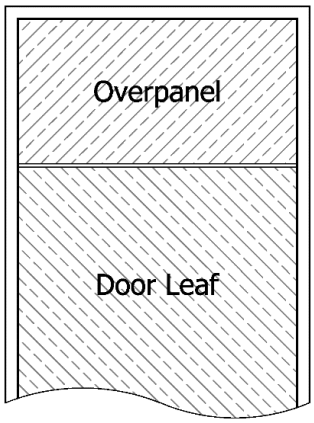
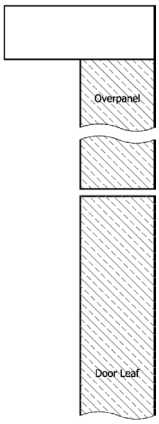
Door edge protection items are ***not*** permitted under the scope of this Field of Application Report

## 7.11 Overpanels

### 7.11.1 Overpanel Size, Configuration and Specification

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Overpanels must be of the same construction as the door leaf and must be manufactured in a single piece – refer to Section 7.2 | |
| OVERPANEL HEIGHT | Single Door Assemblies | Maximum 2000mm high |
| | Double Door Assemblies | Maximum 1500mm high |
| OVERPANEL WIDTH | Overpanels must be sized to fit tightly to the door frame/transom with a maximum 1mm fitting tolerance at all edges | |
| OVERPANEL CONFIGURATIONS | Refer to Sections 7.11.2, 7.11.3 and 7.11.4 | |
| OVERPANEL QUIRK | A maximum 3x3mm quirk may be machined directly into the perimeter of each overpanel face (adjacent to the door frame) | |
| ADDITIONAL REQUIREMENTS/NOTES | MDF Frames, Steel Frames and Double Acting assemblies are not permitted with overpanels | |

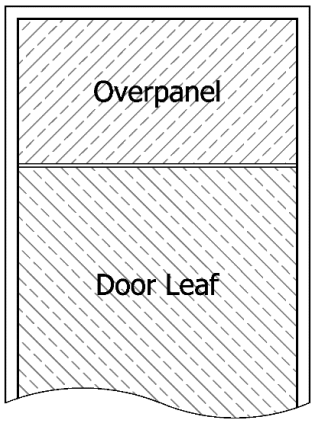
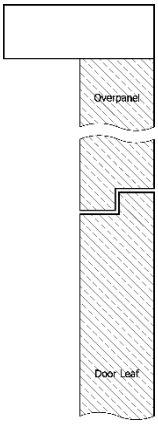
## 7.11.2 Flush Overpanels – Square Interface

| ELEVATION VIEW | SECTION VIEW |
|---|---|
|   |   |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | N/A | LSADD | N/A | Refer to relevant figure in Appendix A for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | N/A | ULSADD | N/A | | 54mm Optima Bond-Up | N/A |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame (excluding MDF) | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figures in Appendix A for specific intumescent seal specifications |

## 7.11.3 Flush Overpanels – Equal Rebate Interface

| ELEVATION VIEW | SECTION VIEW |
|---|---|
|  |  |





| DOOR CONFIGURATIONS | | | |
|---|---|---|---|
| LSASD | N/A | LSADD | N/A |
| ULSASD | N/A | ULSADD | N/A |
| DASD | N/A | DADD | N/A |
| LSASD+OP | ✓ | LSADD+OP | ✓ |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ |
| DASD+OP | N/A | DADD+OP | N/A |

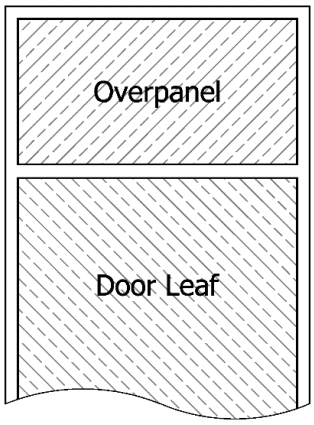
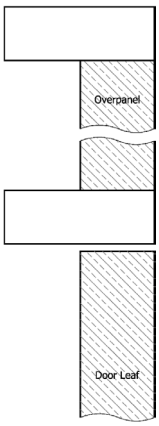
| MAXIMUM LEAF SIZE |
|---|
| Refer to relevant figure in Appendix A for the proposed door configuration |

| DOOR CONSTRUCTION | |
|---|---|
| 54mm Optima | ✓ |
| 54mm Optima Bond-Up | N/A |

| FRAME CONSTRUCTION | |
|---|---|
| Timber Frame (excluding MDF) | ✓ |
| Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figures in Appendix A for specific intumescent seal specifications |

## 7.11.4 Transomed Overpanels

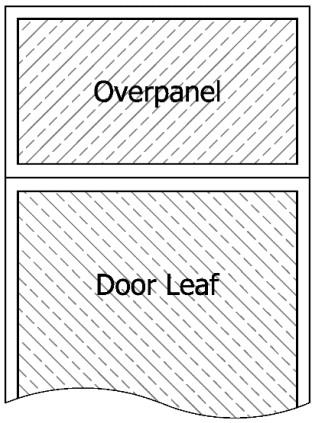
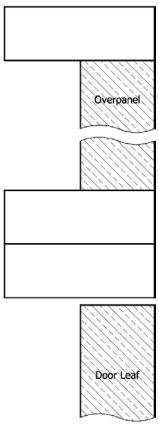
| ELEVATION VIEW | SECTION VIEW |
|---|---|
|   |   |

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| TRANSOM MATERIAL | Single Acting Configurations | • 70mm wide x 32mm thick section<br>• Hardwood – Not Beech (Minimum Density 640kg/m$^3$) |
| | Double Acting Configurations | ***Not*** permitted under the scope of this Field of Application report |
| TRANSOM JOINT | Mortice and tenon | |
| ADDITIONAL REQUIRMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | N/A | LSADD | N/A | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | N/A | ULSADD | N/A | | 54mm Optima Bond-Up | ✓ |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame (excluding MDF) | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figures in Appendix A to F for specific intumescent seal specifications |

## 7.11.5 Transomed Overpanels – Individual Frames

| ELEVATION VIEW | SECTION VIEW |
|---|---|
|   |   |

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| TRANSOM MATERIAL | Single Acting Configurations | • 70mm wide x 32mm thick each section<br>• Hardwood – Not Beech (Minimum Density 640kg/m$^3$) |
| | Double Acting Configurations | ***Not*** permitted under the scope of this Field of Application report |
| TRANSOM JOINT | Mortice and tenon | |
| ADDITIONAL REQUIRMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | N/A | LSADD | N/A | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | N/A | ULSADD | N/A | | 54mm Optima Bond-Up | ✓ |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame (excluding MDF) | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figures in Appendix A to F for specific intumescent seal specifications |

### 7.11.6 Hinged Overpanels

Hinged overpanels are ***not*** permitted under the scope of this Field of Application Report

### 7.11.7 Removable Overpanels

Removable overpanels are ***not*** permitted under the scope of this Field of Application Report

### 7.11.8 Removable Transoms

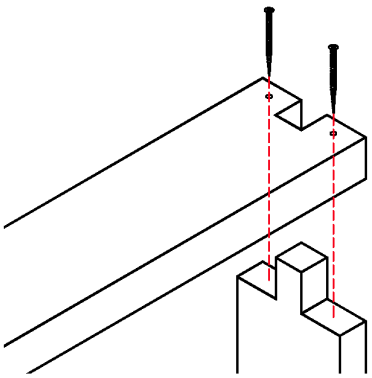
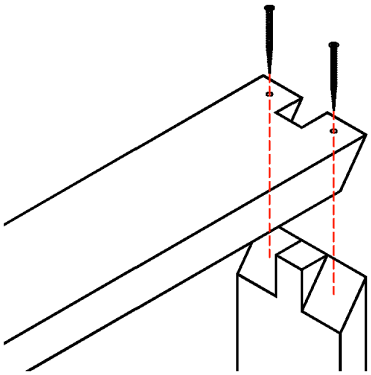
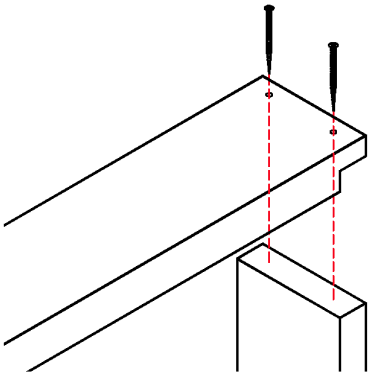
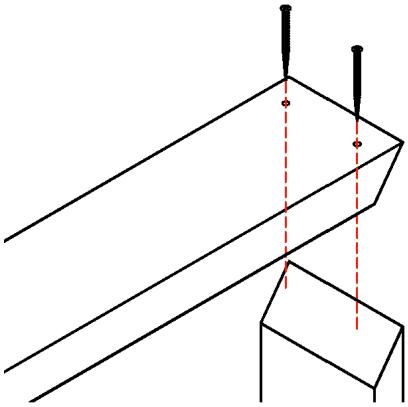
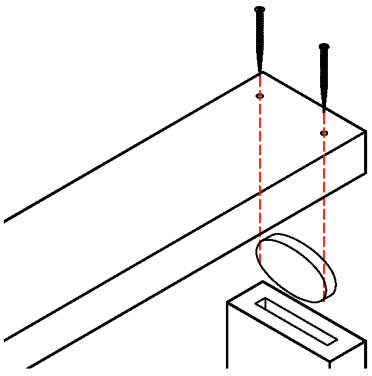
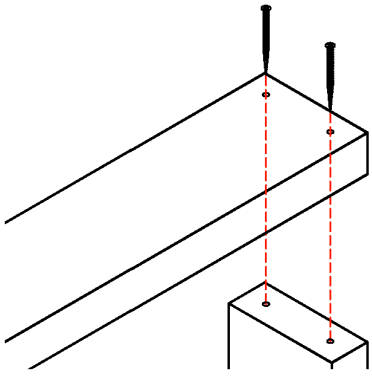
Overpanels with removable transoms are ***not*** permitted under the scope of this Field of Application Report

## 7.12 Underpanels

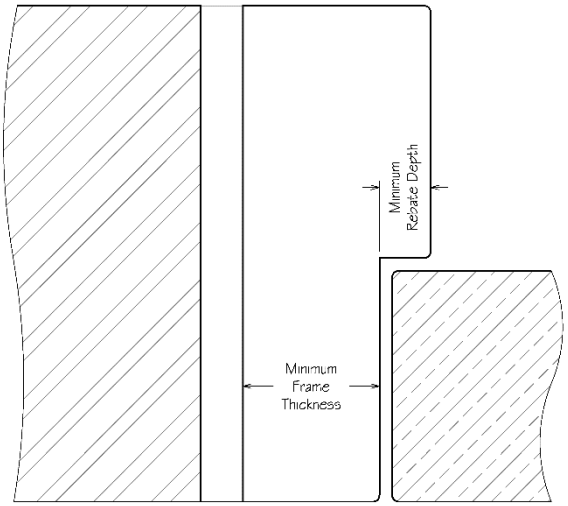
Underpanels are ***not*** permitted under the scope of this Field of Application Report

## 7.13 Timber Door Frames

### 7.13.1 Timber Door Frames – Head Joints

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| JOINT FIXINGS | • 2no. minimum 5mm x 80mm screws between each vertical & horizontal framing member<br>• Screws must be of a suitable length to penetrate each jamb by a minimum of 50mm |
| DIAGRAMS | |
| FHJ60/1 - MORTICE AND TENON JOINT | FHJ60/2 – OMEC JOINT |
|  |  |
| FHJ60/3 – HOUSED JOINT | FHJ60/4 – MITRED JOINT |
|  |  |
| FHJ60/5 – BUTT JOINT WITH BISCUIT | FHJ60/6 – BUTT JOINT |
|  |  |

## 7.13.2 Timber Door Frame Profile F60/1

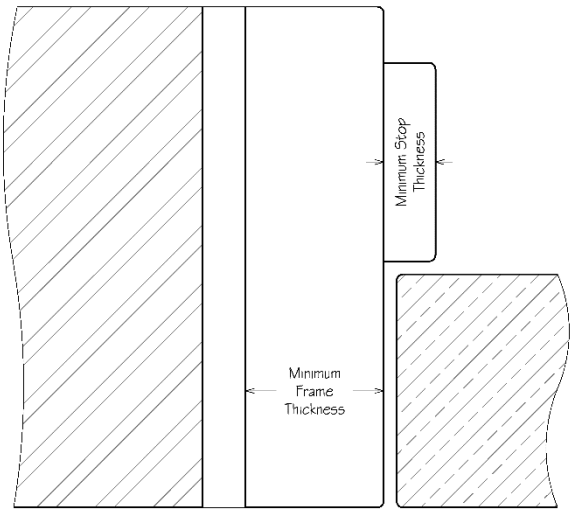
| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | FRAME MATERIAL | Hardwood – Not Beech |
| | MINIMUM DENSITY | 640kg/m³ |
| | MINIMUM FRAME THICKNESS | 32mm |
| | MINIMUM FRAME DEPTH | 70mm |
| | MINIMUM REBATE DEPTH | 12mm |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • The primary frame section (in the plane of the door) must not be reduced below 70mm wide. However, the overall frame depth may be increased without restriction or by utilising split frames or extension linings. The joint between the two frame sections must not intrude into the plane of the door thickness. Additional fixings may be required to prevent the frame from cupping<br>• The minimum frame thickness excludes the thickness of the integral door stop |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration |

## 7.13.3 Timber Door Frame Profile F60/2

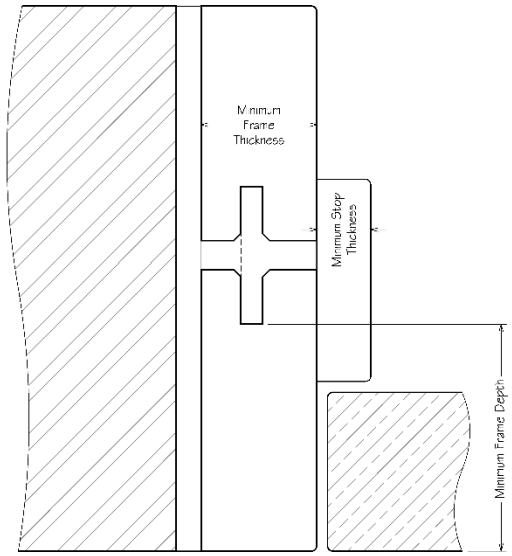
| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | FRAME MATERIAL | Hardwood – Not Beech<br>MDF |
| | MINIMUM DENSITY | Hardwood - 640kg/m³<br>MDF - 700kg/m³ |
| | MINIMUM FRAME THICKNESS | Hardwood - 32mm<br>MDF – 30mm |
| | MINIMUM FRAME DEPTH | 70mm |
| | MINIMUM STOP THICKNESS | 12mm |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • The primary frame section (in the plane of the door) must not be reduced below 70mm wide. However, the overall frame depth may be increased without restriction or by utilising split frames or extension linings. The joint between the two frame sections must not intrude into the plane of the door thickness. Additional fixings may be required to prevent the frame from cupping<br>• The minimum frame thickness excludes the thickness of the integral door stop<br>• Overpanels are not permitted with MDF frames |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME OPTIONS | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| *Overpanels are not permitted with MDF Frames | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant Figure in Appendix A to F, as applicable for the proposed door configuration |

## 7.13.4 Timber Door Frame Profile F60/3

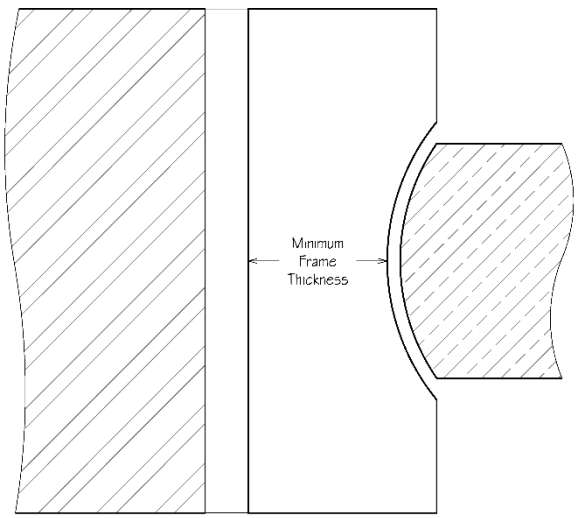
| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | FRAME MATERIAL | Hardwood – Not Beech<br>MDF |
| | MINIMUM DENSITY | Hardwood - 640kg/m³<br>MDF - 700kg/m³ |
| | MINIMUM FRAME THICKNESS | Hardwood - 32mm<br>MDF – 30mm |
| | MINIMUM FRAME DEPTH | 70mm |
| | MINIMUM STOP THICKNESS | 12mm |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • A maximum 15mm deep x 10mm wide groove may be included in the edge of each frame section to house the tongue<br>• The tongue between the frame sections may be manufactured from MDF or hardwood<br>• The primary frame section (in the plane of the door) must not be reduced below 70mm wide<br>• The joint between the two frame sections must not intrude into the plane of the door thickness<br>• Additional frame sections may be added as required to suit the proposed wall depth, provided the requirements detailed above are met<br>• The minimum frame thickness excludes the thickness of the planted door stop<br>• Overpanels are not permitted with MDF frames |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | N/A | DADD | N/A | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| *Overpanels are not permitted with MDF Frames | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration |

## 7.13.5 Timber Door Frame Profile F60/4

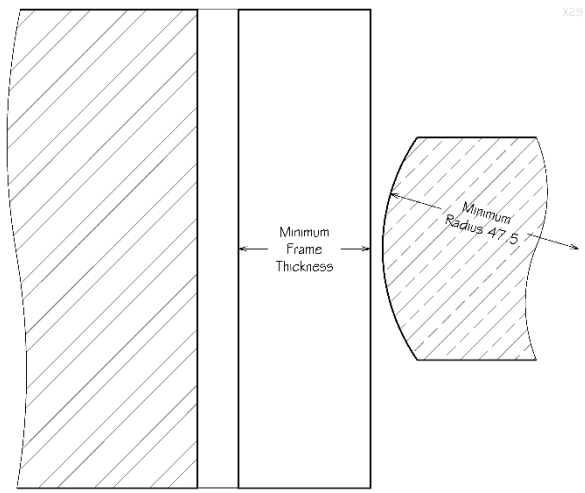
| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | FRAME MATERIAL | Hardwood – Not Beech |
| | MINIMUM DENSITY | 640kg/m³ |
| | MINIMUM FRAME THICKNESS | 32mm |
| | MINIMUM FRAME DEPTH | 70mm |
| | MINIMUM STOP THICKNESS | N/A |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • The primary frame section (in the plane of the door) must not be reduced below 70mm wide. However, the overall frame depth may be increased without restriction or by utilising split frames or extension linings. The joint between the two frame sections must not intrude into the plane of the door thickness. Additional fixings may be required to prevent the frame from cupping<br>• The minimum frame thickness detailed above applies after the scallop is formed in the frame<br>• The radius to the door frame and pivot edge may be adjusted to suit the selected pivot/floor spring<br>• Door edge gaps must be maintained at a maximum of 4mm over the full length of the pivot stile/scallop radius<br>• The primary closing jambs for single leaf doors must be as detailed in Section F60/1 & F60/2 |

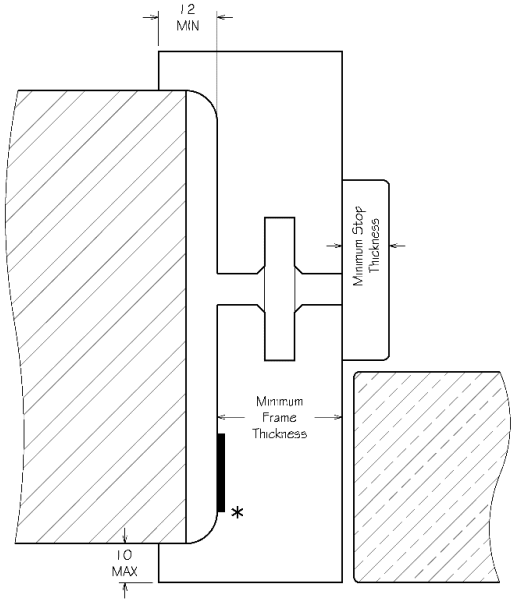
| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | N/A | LSADD | N/A | Refer to relevant figure in Appendix F, as applicable for the proposed door configuration | 54mm Optima | N/A |
| ULSASD | N/A | ULSADD | N/A | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | N/A | LSADD+OP | N/A | | | |
| ULSASD+OP | N/A | ULSADD+OP | N/A | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix F, as applicable for the proposed door configuration |

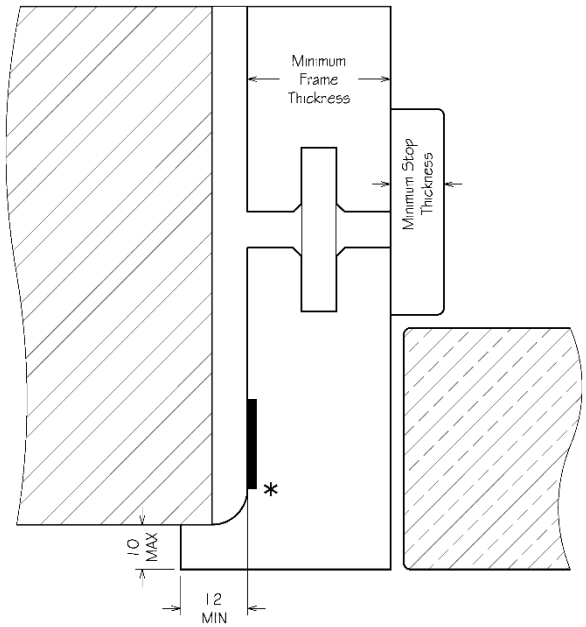
## 7.13.6 Timber Door Frame Profile F60/5

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | This frame profile is ***not*** permitted under the scope of this Field of Application Report | |

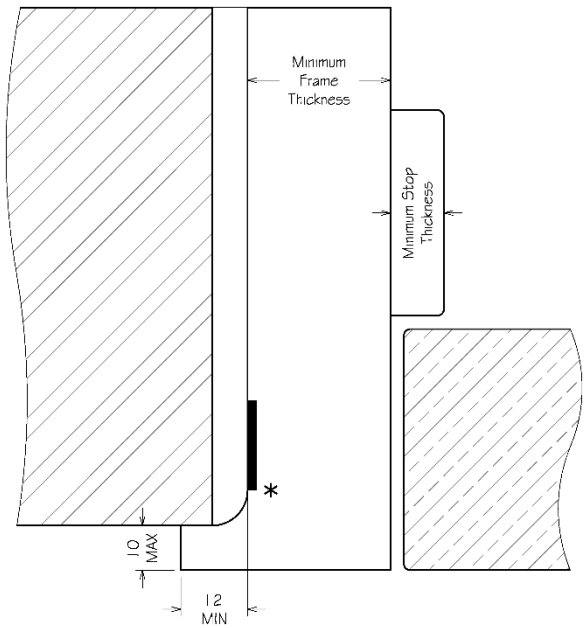
## 7.13.7 Timber Door Frame Profile F60/6

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | This frame profile is ***not*** permitted under the scope of this Field of Application Report | |

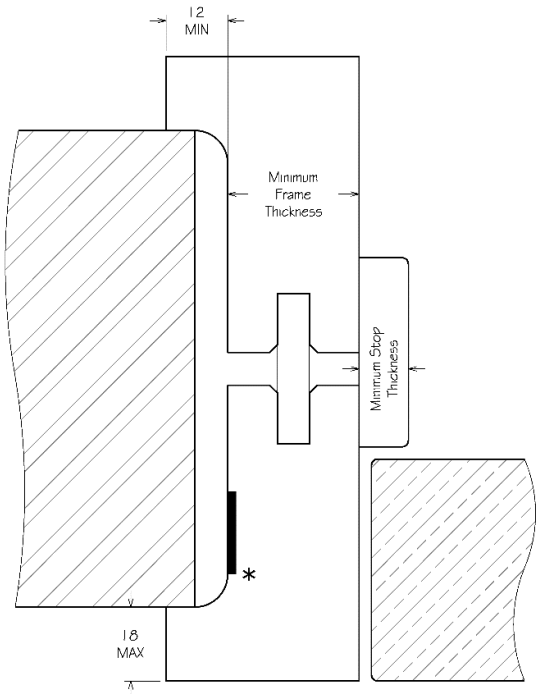
## 7.13.8 Timber Door Frame Profile F60/7

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | This frame profile is ***not*** permitted under the scope of this Field of Application Report | |

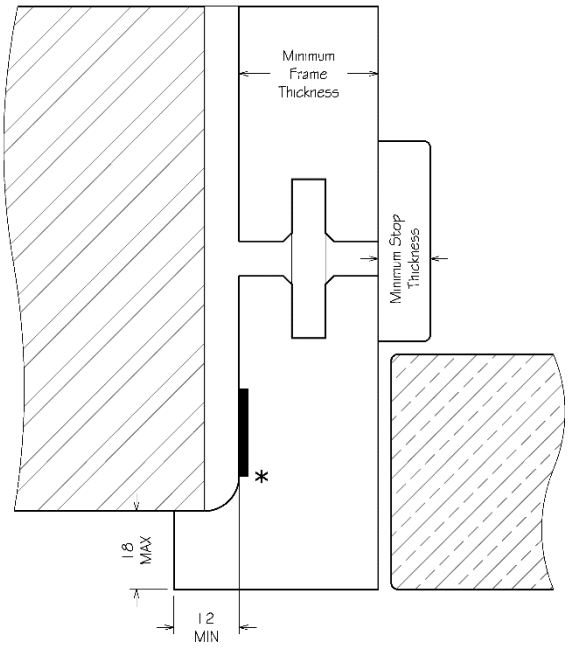
## 7.13.9 Timber Door Frame Profile F60/8

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | This frame profile is ***not*** permitted under the scope of this Field of Application Report | |

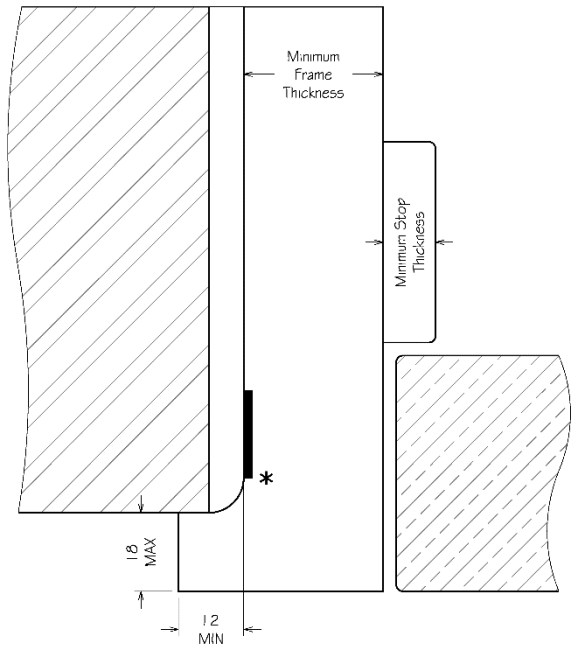
## 7.13.10 Timber Door Frame Profile F60/9

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | | This frame profile is ***not*** permitted under the scope of this Field of Application Report |

## 7.13.11 Timber Door Frame Profile F60/10

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | | This frame profile is ***not*** permitted under the scope of this Field of Application Report |

## 7.13.12 Timber Door Frame Profile F60/11

| DIAGRAM | ELEMENT | SPECIFICATION/DIMENSIONS |
|---|---|---|
|  | This frame profile is ***not*** permitted under the scope of this Field of Application Report | |

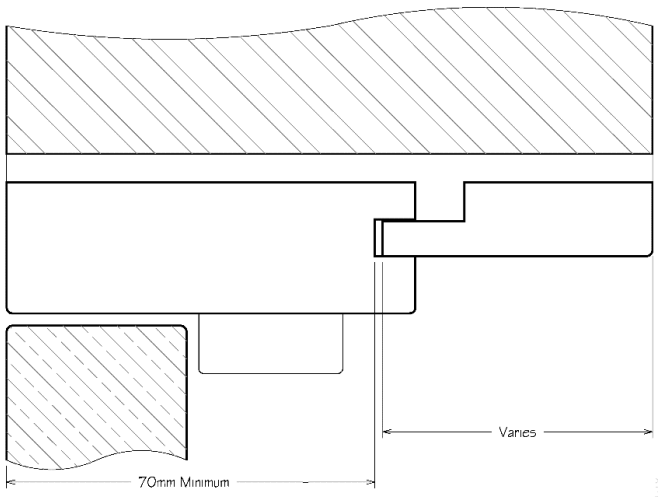
## 7.13.13 Timber Door Frames – Door Stops

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Hardwood (minimum density 640kg/m³)<br>or<br>MDF (minimum density 700kg/m³) | |
| STOP TYPES | Option 1 – Standard Stop | |
| | Dimensions | Minimum 15mm wide x 12mm thick |
| | Fixing | Mechanically fixed to the frame face – refer to Section 7.23 for full details |
| | Option 2 - Stop with Location Tongue/Groove | |
| | ***Not*** permitted under the scope of this Field of Application Report | |
| | Option 3 - Stop with Groove and Biscuits | |
| | ***Not*** permitted under the scope of this Field of Application Report | |
| ADDITIONAL REQUIREMENTS/NOTES | • The width of the stop may be increased without limit to suit the door frame depth<br>• Door stop thickness may need to be increased when concealed door closers are installed – refer to Appendix I | |

## 7.13.14 Timber Door Frames – Architraves

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Option 1 | Softwood (minimum density 510kg/m³) |
| | Option 2 | Hardwood (minimum density 510kg/m³) |
| | Option 3 | MDF (minimum density 700kg/m³) |
| Architrave Types | Option 1 – Standard Architrave | |
| | Dimensions | Width to suit minimum overlap x minimum 15mm thick |
| | Profile | Architraves may be square/rectangular or profiled |
| | Fixing | • Mechanically fixed to edge of door frame & face of the supporting construction<br>• Must overlap the frame and supporting construction by a minimum of 15mm<br>• Refer to Section 7.18.8 for full details |
| | Option 2 - Architrave with Location Tongue/Groove | |
| | ***Not*** permitted under the scope of this Field of Application Report | |
| | Option 3 - Stop with Groove and Biscuits | |
| | ***Not*** permitted under the scope of this Field of Application Report | |
| ADDITIONAL REQUIREMENTS/NOTES | • Where architraves are required in specific gap sealing configurations (see Section 7.19) they must be in accordance with the specification detailed above<br>• Where architraves are not required in specific gap sealing configurations (see Section 7.19) and the edge of the frame is flush with the face of the wall, then loose architraves are optional. In this scenario, the width, thickness and density of the architraves can be adjusted freely | |

## 7.13.15 Timber Door Frames – Extension Linings

| DIAGRAM |
|---|
|  |

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| DIMENSIONS | No limitations on the width/thickness of the extension linings provided the requirements herein are met | |
| MATERIAL | The extension lining material must be selected from the options below, but it may differ from that used for the door frame | |
| | Option 1 | Hardwood (minimum density 640kg/m³) |
| | Option 2 | MDF (minimum density 700kg/m³) |
| EXTENSION LINING GROOVE | • A maximum 10x10mm groove may be included in the door frame to house the extension lining tongue<br>• The groove must not encroach into the minimum frame section size, as depicted above | |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • Extension linings may be used in conjunction with any of the timber frame profiles approved in Section 7.13 (the diagram above is typical)<br>• Linear gap sealing systems must be applied to the primary frame section (in the plane of the door) and not behind the extension lining – refer to Section 7.19 for more details |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE |
|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration |
| ULSASD | ✓ | ULSADD | ✓ | |
| DASD | ✓ | DADD | ✓ | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | |
| DASD+OP | N/A | DADD+OP | N/A | |

| DOOR CONSTRUCTION | |
|---|---|
| 54mm Optima | ✓ |
| 54mm Optima Bond-Up | ✓ |
| **FRAME CONSTRUCTION** | |
| Timber Frame | ✓ |
| Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration |

## 7.13.16 Timber Door Frames – Decorative Facings

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| DECORATIVE FACING OPTIONS | Option 1 | Timber veneer | Option 4 | Cellulosic foil |
| | Option 2 | High Pressure Laminate (HPL) | Option 5 | Vinyl |
| | Option 3 | Paper | | |
| MAXIMUM FACING THICKNESS | 2mm | | | |
| FACING ADHESIVE OPTIONS | Option 1 | Polyurethane | Option 3 | Urea Formaldehyde |
| | Option 2 | Resorcinol Formaldehyde | Option 4 | PVA |
| ADDITIONAL REQUIREMENTS/NOTES | Other than the use of timber veneer, these facings are permitted to be fitted to the face of the frame only and may not return around the frame reveal. | | | |

## 7.13.17 Timber Door Frames – Decorative Finishes

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| PERMITTED APPLICATION AREA | All faces of the door frame | | | |
| DECORATIVE FINISH OPTIONS | Option 1 | Paint | Option 4 | Stain |
| | Option 2 | Lacquer | Option 3 | Varnish |
| MAXIMUM FINISH THICKNESS | 0.5mm, or a maximum of 5 coats, whichever is greater, per leaf face | | | |
| ADDITIONAL REQUIREMENTS/NOTES | None | | | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | FRAME CONSTRUCTION | |
| DASD+OP | N/A | DADD+OP | N/A | | Timber Frame | ✓ |
| | | | | | Steel Frame | N/A |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix A to F, as applicable for the proposed door configuration |

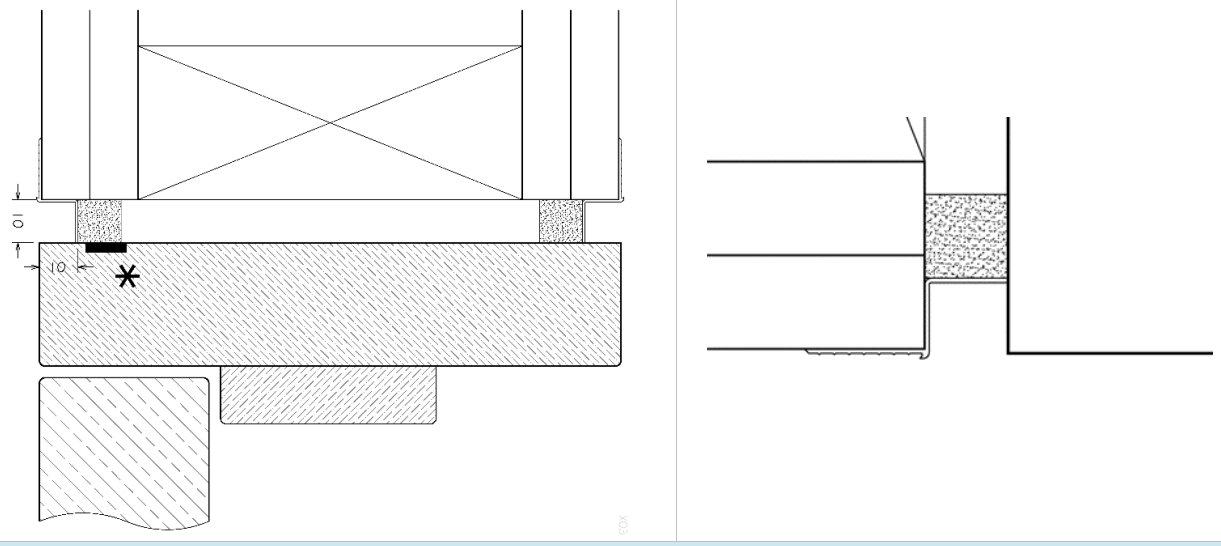
## 7.13.18 Timber Door Frames – PVC Encapsulated Frames

PVC encapsulated door frames are ***not*** permitted under the scope of this Field of Application Report

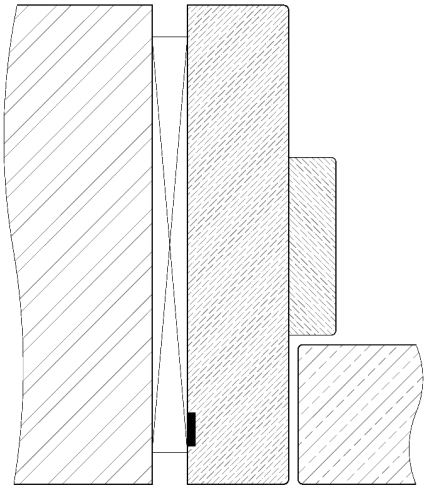
## 7.13.19 Timber Door Frames – Raised Threshold / 4-Sided Frames

Raised threshold/4-sides frames are ***not*** permitted under the scope of this Field of Application Report

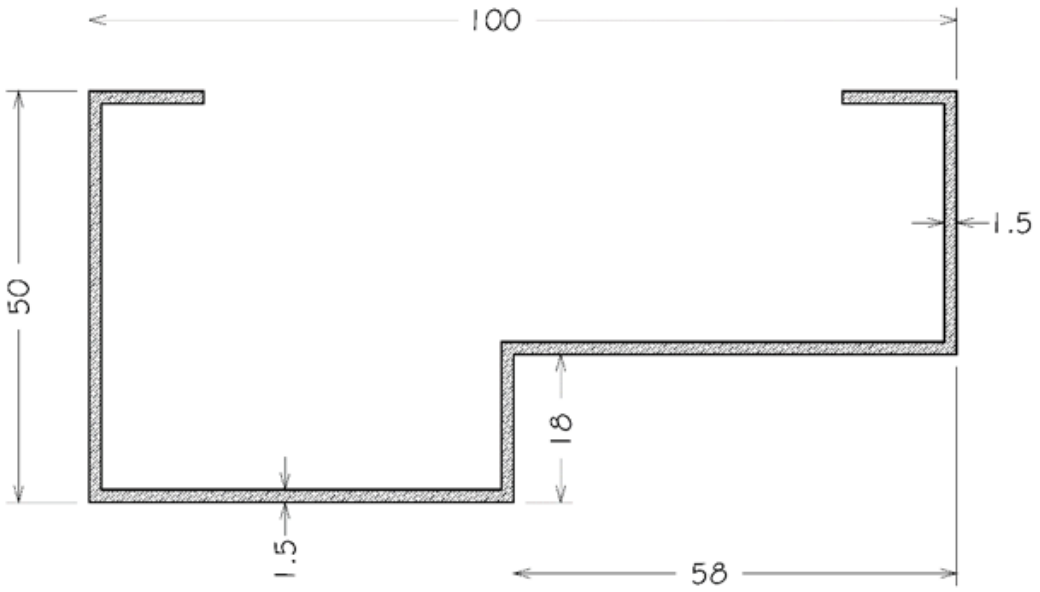
## 7.13.20 Timber Door Frames – Shadow Gap Option 1

| DIAGRAM |
| --- |
|  |
| Shadow gaps are ***not*** permitted under the scope of this Field of Application Report |

## 7.13.21 Timber Door Frames – Shadow Gap Option 2

| DIAGRAM |
| --- |
|  |
| Shadowgaps are ***not*** permitted under the scope of this Field of Application Report |

## 7.14 Steel Door Frames

| DIAGRAM |
|---|
|  |



| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| FRAME PROFILE | Box profile as detailed in the diagram above | |
| FRAME MATERIAL OPTIONS | Option 1 | 304 Grade Stainless Steel |
| | Option 2 | 316 Grade Stainless Steel |
| FRAME HEAD JOINT | Mitred with welded joints or bolted tabs | |
| OPTIONAL BACKFILLING REQUIREMENTS | The backfilling of steel frames is optional. Where backfilling is used the following criteria shall be followed.<br>• When backfilled with mortar it shall be ensured that no voids are present<br>• The backfilling of steel frames with plasterboard, mineral wool, glass fibre or ceramic wool is not permitted | |
| FIXING REQUIREMENTS | Full width 25mm high x 5mm thick steel straps must be welded to the rear of the steel door frames at each fixing position. See also Section 7.18.4 | |
| ADDITIONAL REQUIREMENTS/NOTES | Transom members, overpanels (transomed or flush) and underpanels are not permitted with steel frames | |

| DOOR CONFIGURATIONS | | | |
|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ |
| ULSASD | ✓ | ULSADD | ✓ |
| DASD | N/A | DADD | N/A |
| LSASD+OP | N/A | LSADD+OP | N/A |
| ULSASD+OP | N/A | ULSADD+OP | N/A |
| DASD+OP | N/A | DADD+OP | N/A |

| MAXIMUM LEAF SIZE |
|---|
| Refer to relevant figure in Appendix G-H, as applicable for the proposed door configuration |

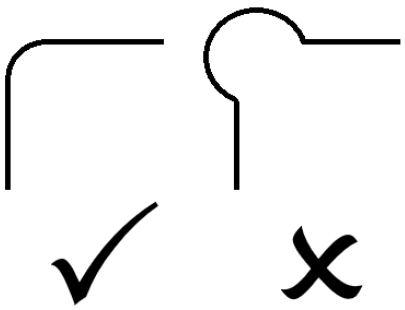
| DOOR CONSTRUCTION | |
|---|---|
| 54mm Optima | ✓ |
| 54mm Optima Bond-Up | N/A |

| FRAME CONSTRUCTION | |
|---|---|
| Timber Frame | N/A |
| Steel Frame | ✓ |

| PERIMETER INTUMESCENT SEAL SPECIFICATION |
|---|
| Refer to relevant figure in Appendix G-H, as applicable for the proposed door configuration |

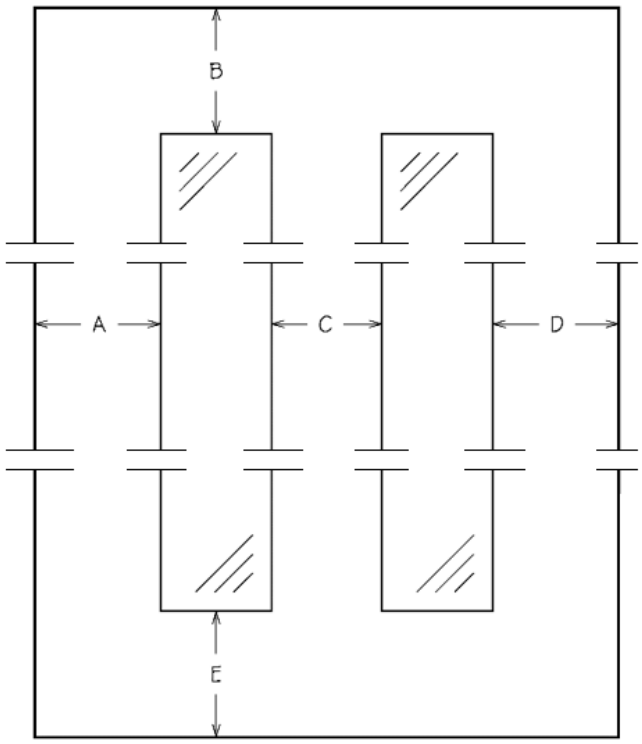
## 7.15 Glazed Apertures

### 7.15.1 General Requirements

<table>
<tr><th colspan="3">GENERAL REQUIREMENTS</th></tr>
<tr><td>GENERAL INSTALLATION</td><td colspan="2">All glass is to be installed in accordance with the manufacturer's instructions for expansion allowance, setting blocks, silicone pointing etc</td></tr>
<tr><td rowspan="2">APERTURE SIZE/AREA</td><td>Maximum Total Permitted Aperture Area (Per Door Leaf)</td><td>0.49m$^2$</td></tr>
<tr><td colspan="2">• The total permitted aperture area detailed above may comprise single or multiple apertures, subject to the maximum permitted glazed aperture dimensions for each glazing system, which are detailed in Section 7.15.3<br>• The total combined area of all glazed apertures, air transfer grilles and/or letter plates (where fitted) must not exceed the total aperture area detailed above</td></tr>
<tr><td>APERTURE SHAPE</td><td colspan="2">The approved aperture scope detailed herein is based on the use of square or rectangular apertures</td></tr>
<tr><td>ALTERNATIVE APERTURE SHAPES</td><td colspan="2">• Alternative aperture shapes (not square or rectangular) may be used, provided the glass and glazing system have been successfully fire tested in accordance with BS476: Part:1987 or BS EN 1634-1 for 60 minutes when fitted within a 54mm thick Halspan Optima door leaf in the same aperture shape as proposed<br>• All details of the glazed aperture, including but not limited to - size, glazing seals, bead profile/size, bead fixings and glass type/thickness must remain as fire tested<br>• Aperture margins and total permitted aperture area must be in accordance with that detailed herein<br>• Maximum 5mm radius corners/edges are permitted at the edges of the glass. This detail must have been successfully fire tested in accordance with BS476: Part:1987 or BS EN 1634-1 for 60 minutes, for the specific glass type. This is limited to a radius being used within the corner of the aperture and does not permit the use of a radius that protrudes from the aperture margin. See figure below.<br>  </td></tr>
<tr><td>APERTURE MARGINS</td><td colspan="2">Refer to Section 7.15.2</td></tr>
<tr><td rowspan="4">APERTURE LINER</td><td colspan="2">A hardwood liner meeting the specification below may be fitted to the perimeter of the glazed aperture. See Section 7.15.3 for guidance on when the use of a liner is mandatory.</td></tr>
<tr><td>Material</td><td>Hardwood – not Beech (Minimum density 640kg/m$^3$)</td></tr>
<tr><td>Thickness</td><td>6-8mm</td></tr>
<tr><td>Adhesive</td><td>Urea formaldehyde, Phenol formaldehyde or PU</td></tr>
</table>

| GENERAL REQUIREMENTS | |
|---|---|
| ETCHING, ENGRAVING & SANDBLASTING | Etching, engraving and sandblasting of glass faces is ***not*** permitted under the scope of this Field of Application Report |
| MANIFESTATIONS | The application of vinyl or screen-printed manifestations is ***not*** permitted under the scope of this Field of Application Report |
| SCREW CUPS | • Surface mounted or recessed/knurled screw cups manufactured from brass or steel, may be used in conjunction with the screw fixings<br>• When using recessed/knurled screw cups, the top of the screw head must sit flush with the top face of the glazing bead |
| PLUGS/PELLETS | Plugs/pellets are permitted, maximum plus/pellet size must not exceed 2mm deep, there must be no gap between the top of the fixing/bottom of the plugs/pellets. |

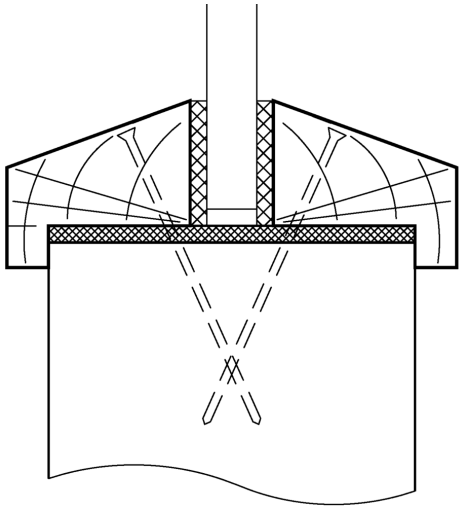
## 7.15.2 Glazed Aperture Margins

| DIAGRAM | KEY | | |
|---|---|---|---|
|  | A | Stile | 100mm |
| | B | Top Rail | *100mm |
| | C | Muntin / Intermediate Rail | **80mm |
| | D | Stile | 100mm |
| | E | Bottom Rail | 200mm |

| ADDITIONAL REQUIREMENTS/NOTES |
|---|
| • There must be a minimum 50mm margin between each glazed aperture and any hardware item, feature groove, recessed panel/area and/or concealed cableway. This minimum dimension must be measured edge-to-edge and not centre-to-centre. This may necessitate the increase of the minimum aperture margins detailed above<br>• *If a concealed overhead closer is included the head of the door leaf, the top rail (dimension B) must be a minimum of 200mm high<br>• **Maximum width/height of glazed aperture using an 80mm intermediate rail/muntin must not exceed 308mm, respectively |

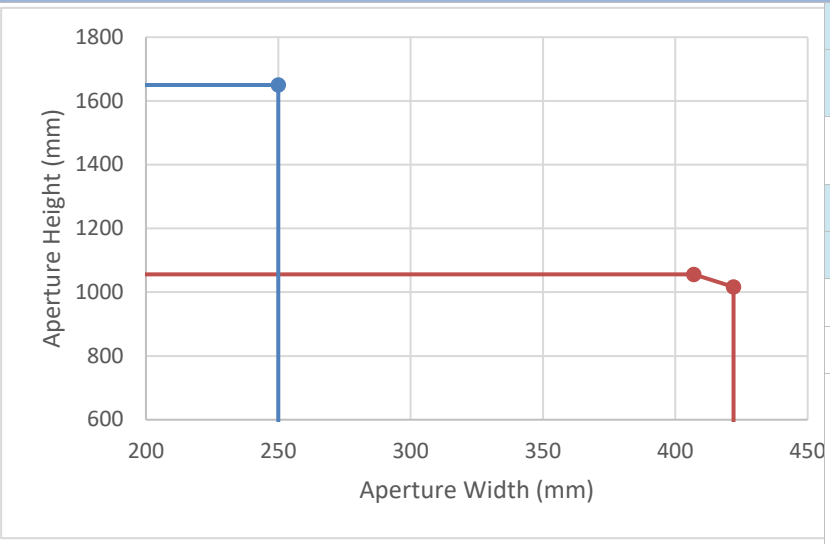
## 7.15.3 Standard Glazing Systems

### *7.15.3.1 6mm Pilkington Pyroshield*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Sealmaster Fireglaze 60 Mastic, 4mm thick bead between glass and bead | |
| 2 | GLAZING LINER | |
| | 54mm x 2mm thick Therm-A-Line<br>Or<br>GL60 glazing liner | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 6mm | Pilkington | Pyroshield | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

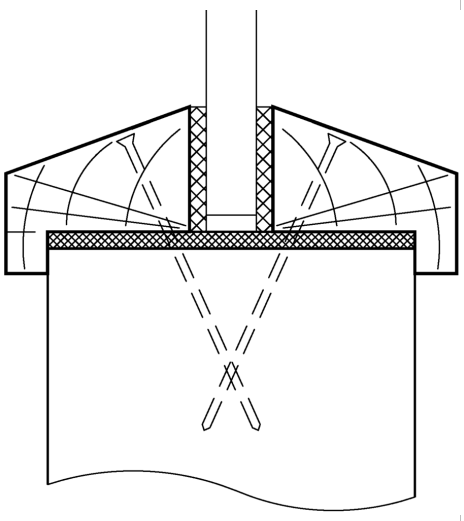



| Option 1 | |
|---|---|
| HEIGHT | WIDTH |
| 1650mm | 250mm |
| **Option 2** | |
| HEIGHT | WIDTH |
| 1017mm | 422mm |
| 1056mm | 407mm |

**FIRE TEST EVIDENCE**

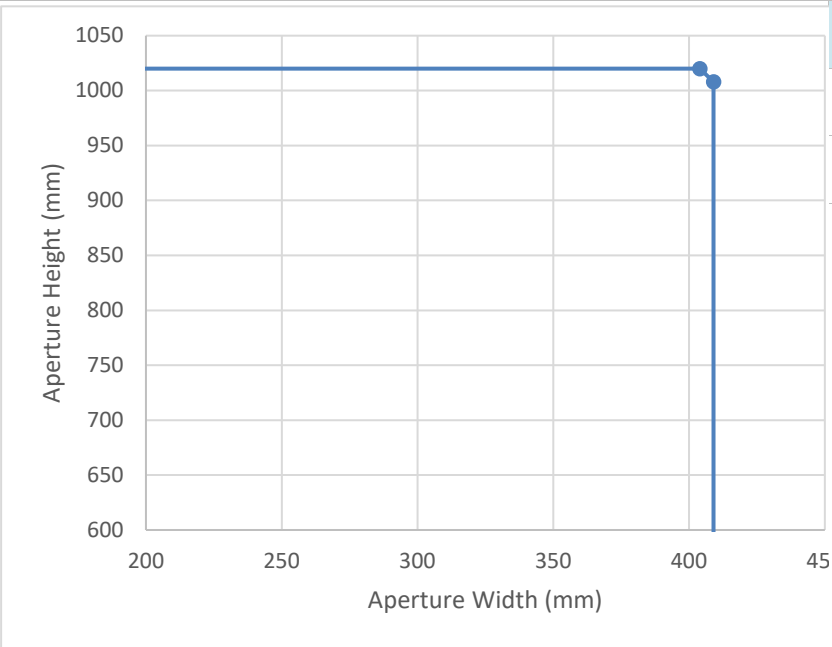
RF00006A, RF01104 - DOOR B

## *7.15.3.2 6mm Sureglaze*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Sealmaster Fireglaze 60 Mastic, 4mm thick bead between glass and bead | |
| 2 | GLAZING LINER | |
| | GL60 glazing liner | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 6mm | Halspan | Sureglaze | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

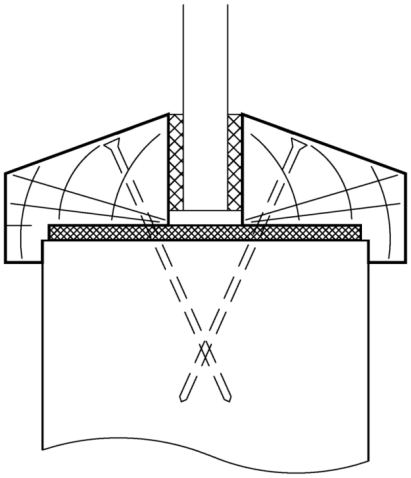



| HEIGHT | WIDTH |
|---|---|
| 1008mm | 409mm |
| 1020mm | 404mm |

**FIRE TEST EVIDENCE**

RF01056

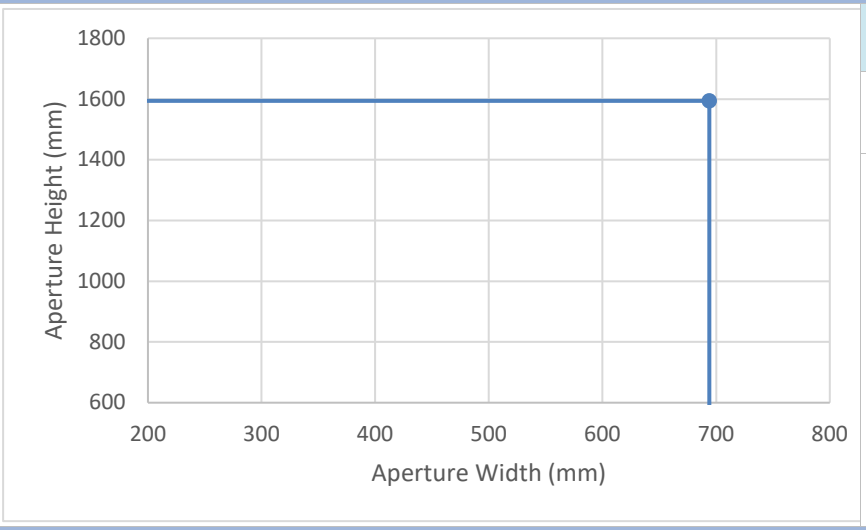
## *7.15.3.3 6mm Pyran S*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Pyroglaze 60 25mm x 3mm | |
| 2 | GLAZING LINER | |
| | Pyrostrip 100 ECSA 52mm x 2mm | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

**GLASS TYPE**

| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
|---|---|---|---|---|
| 6mm | Schott | Pyran S | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

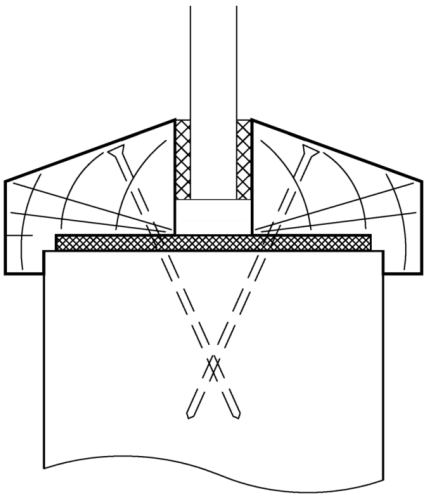



| HEIGHT | WIDTH |
|---|---|
| 1594mm | 694mm |

**FIRE TEST EVIDENCE**

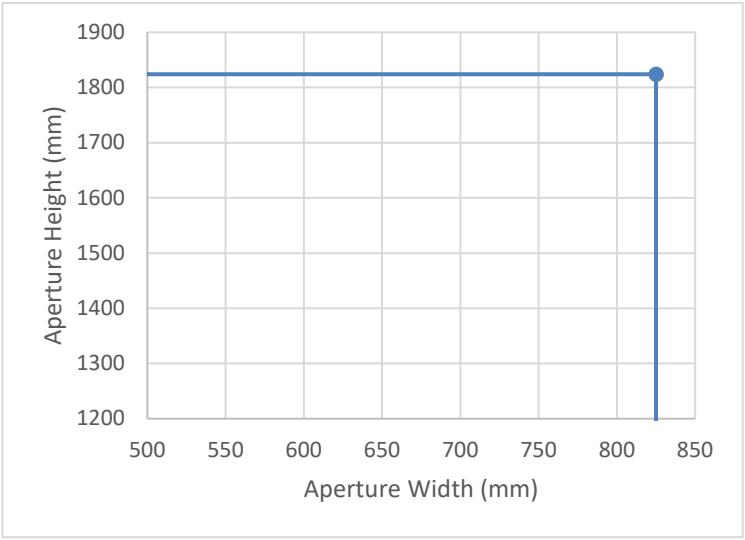
Chilt/RF08097

## *7.15.3.4 10mm Pyrodur*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Hodgeson Firestrip 60 20mm x 3mm | |
| 2 | GLAZING LINER | |
| | Norseal Flexible 50mm x 2mm | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 10mm | Pilkington | Pyrodur 60-10 | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

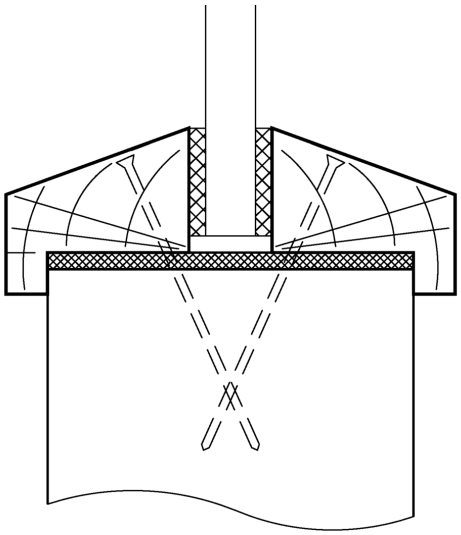



| HEIGHT | WIDTH |
|---|---|
| 1824mm | 825mm |

**FIRE TEST EVIDENCE**

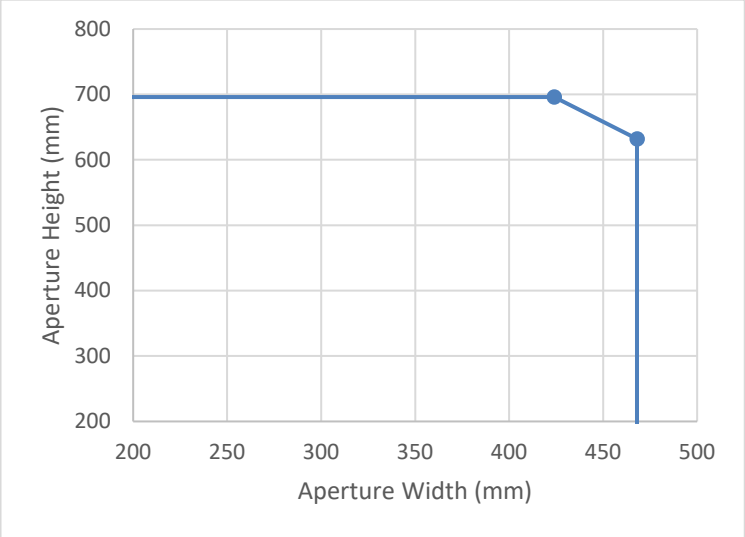
Chilt/RF05036

## *7.15.3.5 Pyrobelite 12 – Option 1*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | 25mm x 4mm Therm-A-Glaze 60 glazing system | |
| 2 | GLAZING LINER | |
| | 54mm x 2mm thick Therm-A-Glaze | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 12mm | AGC | Pyrobelite 12 | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

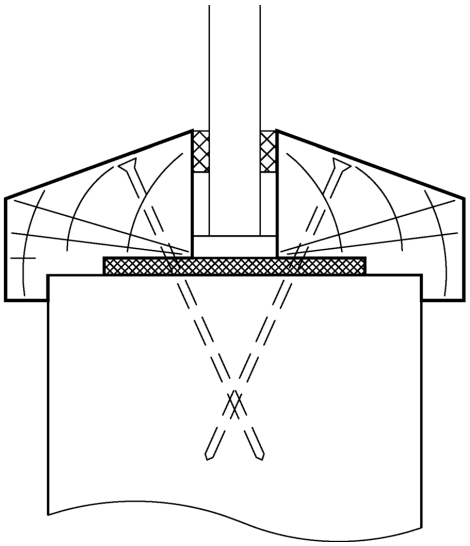



| HEIGHT | WIDTH |
|---|---|
| 632mm | 468mm |
| 696mm | 424mm |

**FIRE TEST EVIDENCE**

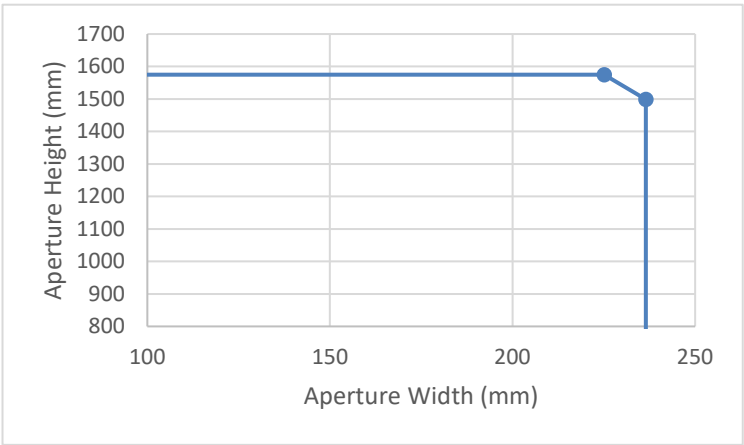
RF09010

## *7.15.3.6 Pyrobelite 12 – Option 2*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | 10mm x 5mm STS105GT (by Sealed Tight Solutions) | |
| 2 | GLAZING LINER | |
| | 30 x 2mm thick STS302 (by Sealed Tight Solutions) | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 12mm | AGC | Pyrobelite 12 | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

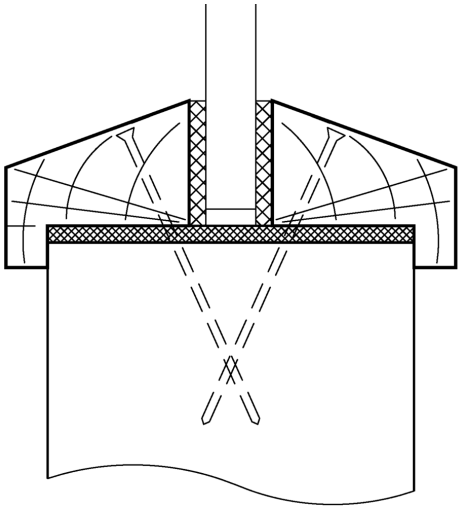



| HEIGHT | WIDTH |
|---|---|
| 1499mm | 237mm |
| 1574mm | 225mm |

**FIRE TEST EVIDENCE**

CFR2002051

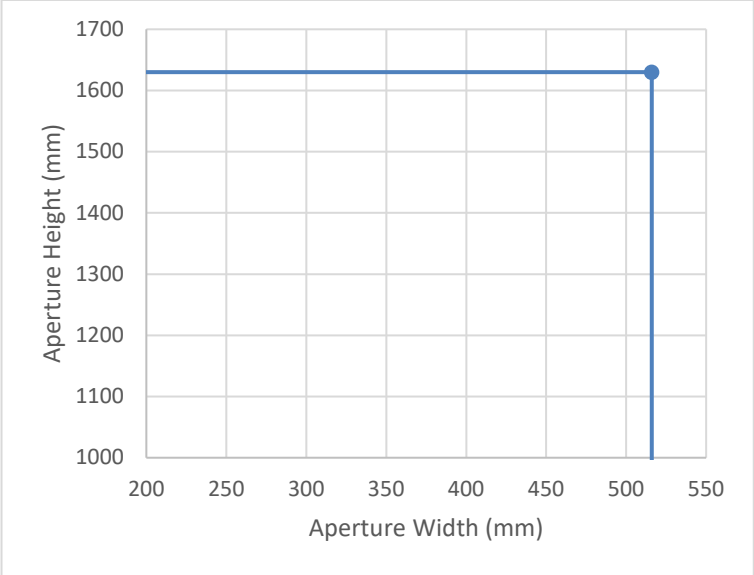
## *7.15.3.7 13mm Pyrodur*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Sealmaster Fireglaze Mastic | |
| 2 | GLAZING LINER | |
| | Sealmaster Fireglaze Liner | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

**GLASS TYPE**

| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
|---|---|---|---|---|
| 13mm | Pilkington | Pyrodur 60-20 | 60 | NPD |

**GLAZED APERTURE ENVELOPE**

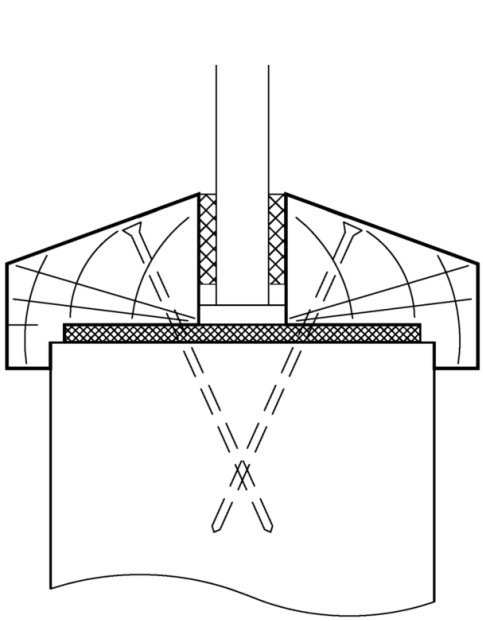



| HEIGHT | WIDTH |
|---|---|
| 1630mm | 516mm |

**FIRE TEST EVIDENCE**

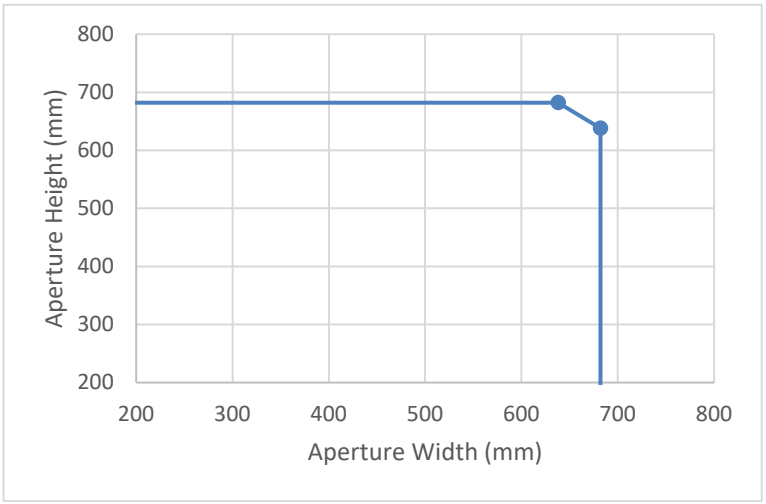
Chilt/RF04001

## *7.15.3.8 15mm Pyrostop*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | 20mm x 5mm Halspan Foam Tape | |
| 2 | GLAZING LINER | |
| | 54mm x 2mm thick Halspan Glazing Liner | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø1.6mm steel pins or 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 15mm | Pilkington | Pyrostop 30-10 | 60 | 30 |
| 18mm | Pilkington | Pyrostop | 60 | 30 |

**GLAZED APERTURE ENVELOPE**

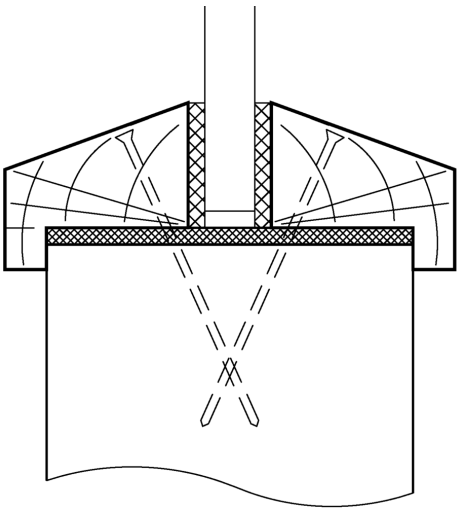



| HEIGHT | WIDTH |
|---|---|
| 634mm | 666mm |
| 666mm | 634mm |

**FIRE TEST EVIDENCE**

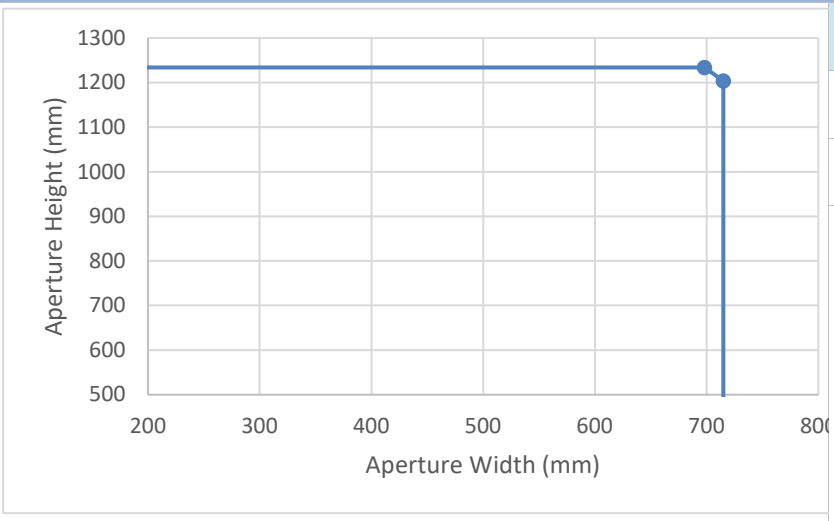
WF531368

## *7.15.3.9 Pyrobel 25*

| # | SPECIFICATION/QUANTITY/DIMENSIONS | DIAGRAM |
|---|---|---|
| 1 | GLAZING SEAL |  |
| | Fireglaze mastic | |
| 2 | GLAZING LINER | |
| | 54mm x 2mm thick Therm-A-Line | |
| 3 | GLAZING BEAD | |
| | • 30mm high bead including a 5x5mm bolection return<br>• 25mm glass edge cover<br>• 15-20 degree splayed top<br>• Hardwood – not Beech (minimum density 640kg/m$^3$) | |
| 4 | GLAZING BEAD FIXINGS | |
| | • 60mm x Ø4mm steel wood screws<br>• 50mm from each corner and on 150mm centres thereafter<br>• Fixed at an angle of 15-20 degrees relative to glass face<br>• Shank of the pin/screw as close as possible to the perimeter of the glass | |

| GLASS TYPE | | | | |
|---|---|---|---|---|
| THICKNESS | MANUFACTURER | TYPE | INTEGRITY | INSULATION |
| 25mm | AGC | Pyrobel 25 | 60 | 30 |

**GLAZED APERTURE ENVELOPE**




| HEIGHT | WIDTH |
|---|---|
| 1204mm | 715mm |
| 1234mm | 698mm |

**FIRE TEST EVIDENCE**

636.7/09

### 7.15.4 Privacy Glazing Systems

Privacy glazing systems are ***not*** permitted under the scope of this Field of Application Report

### 7.15.5 PVC Glazing Systems

PVC glazing systems are ***not*** permitted under the scope of this Field of Application Report

### 7.15.6 Decorative Glazing Bead Facings

The application of facings to glazing beads is ***not*** permitted under the scope of this Field of Application Report

### 7.15.7 Decorative Glazing Bead Finishes

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| DESCRIPTION | Decorative glazing bead finishes may be used in conjunction with any of the glazing systems detailed in Section 7.15 subject to compliance with that detailed below | | | |
| PERMITTED APPLICATION AREA | All faces of the glazing bead | | | |
| DECORATIVE FINISH OPTIONS | Option 1 | Paint | Option 4 | Stain |
| | Option 2 | Lacquer | Option 3 | Varnish |
| MAXIMUM FINISH THICKNESS | 0.5mm, or a maximum of 5 coats, whichever is greater, per leaf face | | | |
| ADDITIONAL REQUIREMENTS/NOTES | None | | | |

### 7.15.8 Mock Glazing Bars/Ladder Beads

Mock glazing bars/ladder beads are ***not*** permitted under the scope of this Field of Application Report

## 7.16 Air Transfer Grilles

Air transfer grilles are ***not*** permitted under the scope of this Field of Application Report

## 7.17 Fanlights, Sidelights and Glazed Screens

Fanlights, sidelight and glazed screens are ***not*** permitted under the scope of this Field of Application Report

## 7.18 Installation and Supporting Construction

### 7.18.1 Supporting Construction

| REQUIREMENTS/NOTES | | |
|---|---|---|
| • The supporting construction must have tested or assessed to provide in excess of 60 minutes fire resistance, at the required size, when incorporating door openings<br>• If fitted into timber or steel stud partitions, the method of forming the door assembly opening must be as tested by the partition and/or door assembly manufacturer<br>• When fitted into steel stud partitions, KFS recommends that the steel studs and steel head profile at the perimeter of the door assembly are reinforced with timber of a suitable section size to suit the steel profiles<br>*Note Any reference to steel stud partitions is in the context of permanent elements, such as those designed and proven by the plasterboard manufacturers – this report does not approve use of the proposed door assemblies in proprietary 'demountable' partitions* | | |
| **ELEMENT** | **SPECIFICATION/QUANTITY/DIMENSIONS** | |
| SUPPORTING CONSTRUCTION OPTIONS - TIMBER DOOR FRAMES | Option 1 | Timber stud plasterboard partition |
| | Option 2 | Steel stud plasterboard partition |
| | Option 3 | Masonry walls (Blockwork, brickwork & concrete) |
| SUPPORTING CONSTRUCTION OPTIONS - STEEL DOOR FRAMES | Masonry walls only (Blockwork, brickwork & concrete) | |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

## 7.18.2 Oversized Structural Openings

| REQUIREMENTS/NOTES | | |
|---|---|---|
| • Wherever possible, gaps between the rear of the door frame and structural opening should be controlled so that they meet the gap sealing requirements detailed in Section 7.19<br>• Where the gap between the rear of the door frame and the structural opening is larger than can be filled with an approved gap sealing system (as outlined in Section 7.19), then it is permitted to line the structural opening with one of the lining material options detailed below. | | |
| **ELEMENT** | **SPECIFICATION/QUANTITY/DIMENSIONS** | |
| LINING MATERIAL OPTIONS | Option 1 | Plasterboard |
| | Option 2 | Non-combustible board (e.g. Supalux) |
| MAXIMUM TOTAL THICKNESS OF LINING MATERIAL | 20mm | |
| FIXINGS/INSTALLATION | • Lining materials must be bedded on a proven intumescent mastic/sealant and fixed securely to the perimeter of the structural opening, or the rear of the door frame, using steel screws on maximum 400mm centres<br>• Screws must penetrate the lining material and engage into the perimeter of the structural opening or rear of the door frame. | |
| ADDITIONAL REQUIREMENTS/NOTES | • Lining materials must finish flush with the face of the structural opening<br>• No gaps should be present between the lining material and the structural opening. Appropriate fire stopping should be included between the lining and door frame. | |

### 7.18.3 Timber Door Frame Fixing Requirements

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| FIXING TYPE | The selected fixing must be suitable for use in the type of construction surrounding the door opening (refer to fixing manufacturer/supplier for guidance) |
| FIXING DIAMETER | Minimum 5mm |
| FIXING LENGTH | • When fixing to masonry walls, fixings must be of a sufficient length to penetrate the wall by at least 50mm<br>• When fixing to timber/steel stud partitions, fixings must be of a sufficient length to fully penetrate the timber stud or timber reinforcement within the metal studs |
| FIXING MATERIAL | Steel |
| FIXING POSITIONS | • There must be a minimum of 1no. line of fixings. All fixings must be inset from the edge of the door frame by a minimum of 20mm |
| FIXING FREQUENCY | • Fixings must be located at 150-200mm from the top and bottom of the jambs and on maximum 600mm centres thereafter<br>• A minimum of 1no. fixing must be fitted centrally across the width of the frame head in double doors |
| CONCEALING FIXINGS | • Fixings may be located behind the intumescent strips or door stops<br>• Alternatively, fixing holes may be countersunk to a maximum depth of 10-15mm and then plugged/pelleted<br>• Plugs/pellets must be of the same material as the door frame and glued in place using PVA, or PU adhesive |
| TWO-PART FRAMES | In frame profiles which comprise two or more sections, the primary frame section in the plane of the door must be fixed in accordance with the above details.<br>The secondary frame section/extension linings must be fixed with a minimum 1no. line of screws at the same horizontal positions as the primary frame section |
| EXTENSION LININGS | In frame configurations which require extension linings, the primary frame section in the plane of the door must be fixed in accordance with the above details |

## 7.18.4 Steel Door Frame Fixing Requirements

| ELEMENT | SPECIFICAITON/QUANTITY/DIMENSIONS |
|---|---|
| FIXING TYPE | The selected fixing must be suitable for use in the masonry wall surrounding the door opening (refer to fixing manufacturer/supplier for guidance) |
| FIXING DIAMETER | Minimum 5mm |
| FIXING LENGTH | • When fixing to masonry walls, fixings must be of a sufficient length to penetrate the wall by at least 50mm<br>• When fixing to timber/steel stud partitions, fixings must be of a sufficient length to fully penetrate the timber stud or timber reinforcement within the metal studs |
| FIXING MATERIAL | Steel |
| FIXING STRAPS | Full width 25mm high x 5mm thick steel straps must be welded to the rear of the steel door frames at each fixing position |
| FIXING POSITIONS | Fixings must be fitted through access holes in the door stop, passing through the steel straps described above, before engaging into the masonry supporting construction |
| FIXING FREQUENCY | • Fixings must be located at 150-200mm from the top and bottom of the jambs and on maximum 600mm centres thereafter<br>• A minimum of 1no. fixing must be fitted centrally across the width of the frame head in double doors |
| CONCEALING FIXINGS | Fixings are concealed behind flush metal discs |

## 7.18.5 Door Frame Packers

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| PACKER OPTIONS | Option 1 | Plastic shims/packers (Such as Broadfix) |
| | Option 2 | Timber (MDF, softwood, hardwood) |
| | Option 3 | Non-combustible board (Such as Supalux) |
| FIXINGS/INSTALLATION | • Door frame packers must be used at all fixing positions, but their use must be minimised beyond this, so as to avoid excessive interruption of the backfilling materials and gap sealant which are installed within the linear gap at the rear of the frame<br>• Typically, frame packers must be cut short of the gap sealant/wall face, unless the proposed gap sealing configuration/system has been successfully tested with frame packers which penetrate the gap sealant. Refer to Section 7.24 for further details | |
| ADDITIONAL REQUIREMENTS/NOTES | The use of metal frame packers is ***not*** permitted under the scope of this Field of Application Report | |

## 7.18.6 Projecting Door Frames/Door Leaves

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| DESCRIPTION | It is not permitted for the door frame or door leaf to project beyond the face of the fire rated supporting construction, so as to align with decorative cladding or plasterboard on dabs. Door frames and door leaves must be installed such that they are located entirely within the plane of the fire rated supporting construction. |
| ADDITIONAL REQUIREMENTS/NOTES | Projecting door frames may be considered on a case by case basis by KFS |

## 7.18.7 Door Stops

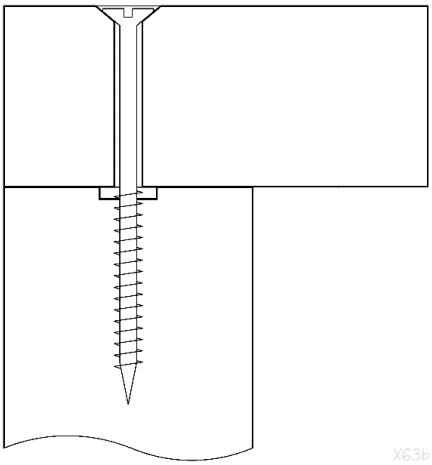
| ELEMENT | | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|---|
| POSITION | Fixed to the face of the door frame, set maximum 3mm from the closing leaf face | |
| FIXING | Standard stops | Mechanically fixed to the door frame with steel pins (minimum 38mm x 18swg) or screws on centres no greater than 400mm |
| | Stops with location tongue/groove | ***Not*** permitted under the scope of this Field of Application report |
| | Stops with groove and biscuits | ***Not*** permitted under the scope of this Field of Application report |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

## 7.18.8 Architraves

Where a gap sealing system requires architraves, they shall be installed in accordance with the following specification. When the gap sealing system has been successfully tested without architraves the following specifications do not apply, however, no frame material shall be removed for the installation of an optional/decorative architrave.

| ELEMENT | | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|---|
| POSITION | Architraves must overlap the edge of the frame and the face of the wall by a minimum of 15mm | |
| FIXING | Standard Architraves | Mechanically fixed to the door frame with steel pins or screws on centres no greater than 400mm |
| | Architraves with location tongue/groove | ***Not*** permitted under the scope of this Field of Application report |
| | Architraves with groove and biscuits | ***Not*** permitted under the scope of this Field of Application report |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

## 7.18.9 Overpanels

| DIAGRAM |
|---|
|  |

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| POSITION | The overpanel must be installed in the same plane as the door leaf below | |
| FIXINGS | Screw Size | Screws must be of suitable length to provide a minimum of 40mm penetration into each overpanel edge |
| | Fixing Quantity | Minimum 2no. screws per overpanel edge |
| | Fixing Position | Maximum 100mm from each corner and on maximum 400mm centres thereafter |
| ADDITIONAL REQUIREMENTS/NOTES | Intumescent protection is required around the panel perimeter. Refer to the correct Appendix Section for clarification | |

## 7.18.10 Door Edge Gaps

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| GAP BETWEEN LEAF & FRAME JAMBS/HEAD | 1.5mm to 4mm |
| GAP AT THE MEETING EDGE OF DOUBLE DOORS | 1.5mm to 4mm |
| GAP BETWEEN OVERPANEL EDGE/S & LEAF HEAD/FRAME/TRANSOM | 1.5mm to 4mm |
| GAP BETWEEN BOTTOM EDGE OF DOOR LEAF AND FINISHED FLOOR (FIRE ONLY) | Maximum 6mm |

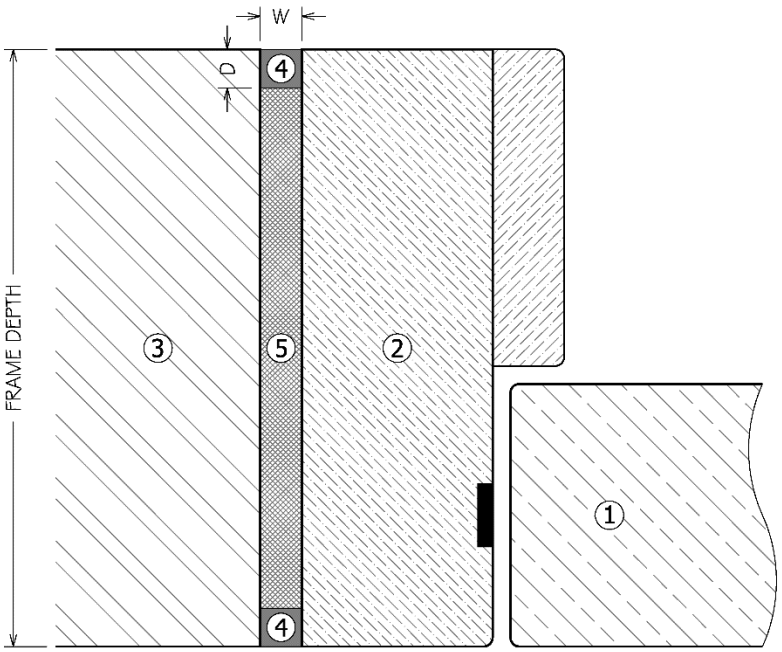
## 7.18.11 Door Leaf Alignment

| REQUIREMENTS/NOTES |
|---|
| • The door assembly design shall be such that when closed single acting leaves are fully flush within the frame and double acting doors must be centred on the frame depth (+/-1mm)<br>• The face of leaves in double door assemblies shall be flush with each other at meeting stiles (+/-1mm) when closed |

## 7.19 Gap Sealing to Door Frames

### 7.19.1 General

| GENERAL REQUIREMENTS/NOTES |
|---|
| • The gap sealing information detailed herein, relates to the linear gap between the door frame and surrounding construction, as depicted in the drawing below, and must not be used to support the sealing of other, unspecified gaps<br>• Any gap sealing systems used in conjunction with door assemblies manufactured under the scope of this report, must meet all of the requirements detailed in Section 7.19.2<br>• Guidance on the correct installation method for the individual components of the gap sealing system can be found in Section 7.19.3 |

| DIAGRAM | KEY | |
|---|---|---|
|  | 1 | Door leaf |
| | 2 | Door frame |
| | 3 | Supporting construction (Masonry, steel stud/timber stud partition) |
| | 4 | Gap sealant |
| | 5 | Backing material |
| | D | Depth of gap sealant |
| | W | Width of gap/gap sealant |

## 7.19.2 Requirements for Gap Sealing Systems

| GENERAL REQUIREMENTS |
|---|
| • Gap sealing products used in conjunction with Halspan Optima FD60 timber door assemblies, must have been successfully fire tested for 60 minutes fire resistance in accordance with BS476: Part 22: 1987 or BS EN 1634-1:2014 meeting all of the requirements detailed below<br>• Individual components of the proposed gap sealing system must be installed in accordance with Section 7.19.3 |

| 1 | DOOR ASSEMBLY CONFIGURATION |
|---|---|
| • Must have been successfully fire tested when sealing the linear gap between a door frame and the supporting construction (see restrictions on frame materials below), with the door assembly orientated so that the door leaf is opening towards the fire test furnace<br>• Gap sealing products which have been fire tested sealing linear gaps within blockwork walls are not permitted | |

| 2 | DOOR FRAME MATERIAL |
|---|---|

| Tested Frame Material | Permitted Frame Material |
|---|---|
| Timber | Timber (Refer to Section 7.13 for approved timber door frame scope) |
| Steel | Steel (Refer to Section 7.14 for approved steel door frame scope) |

| 3 | GAP WIDTH |
|---|---|
| Must have been successfully fire tested when sealing a linear gap width, equal to, or greater than, that proposed | |

| 4 | GAP SEALANT DEPTH |
|---|---|
| Must be applied to a minimum depth of 10mm<br>(or increased to match the depth which was fire tested with the proposed gap sealant) | |

| 5 | BACKING MATERIAL (FITTED WITHIN LINEAR GAP) |
|---|---|

| Tested Backing Material | Permitted Backing Material Options | | | |
|---|---|---|---|---|
| No backing material included | None | CC Polyethylene backing rod | Expanding FR PU foam* | Mineral rock fibre |
| Closed cell polyethylene backing rod | | CC Polyethylene backing rod | Expanding FR PU foam* | Mineral rock fibre |
| Expanded FR PU foam | | | Expanding FR PU foam* | Mineral rock fibre |
| Mineral rock fibre | | | | Mineral rock fibre |

* Must have been successfully fire tested when sealing a linear gap between the rear of a timber frame and a steel/timber stud partition

| 6 | ARCHITRAVES |
|---|---|

| Tested Architrave Configuration | Permitted Architrave Configuration |
|---|---|
| No architraves fitted | Architraves are optional |
| Architraves fitted | Architraves must be fitted |

| 7 | DOOR FRAME PACKERS |
|---|---|

| Tested Packer Configuration | Permitted Frame Packer Configuration | |
|---|---|---|
| Concealed<br>(Cut short of gap sealant) | ` Concealed<br>(cut short of gap sealant) | |
| Exposed<br>(Penetrating gap sealant) | Concealed<br>(cut short of gap sealant) | Exposed<br>(Penetrating gap sealant) |

## 7.19.3 Installation of Gap Sealing Components

### *7.19.3.1 General Requirements*

| GENERAL REQUIREMENTS |
|---|
| • Wherever possible, gaps between the rear of the door frame and structural opening should be controlled so that the gap width is consistent over the entire perimeter of the door frame, and is of a size which enables the installation of a suitable gap sealing system in accordance with Section 7.19.2<br>• If the linear gap width varies across the perimeter of the same door frame, then it is permitted to transition from one gap sealing system to another, provided each gap sealing system used is in accordance with Section 7.19.2, and is suitable for the gap width present at its installation location |

### *7.19.3.2 Gap Sealant*

| GAP SEALANT |
|---|
| • Gap sealant must be applied in a continuous bead over the entire length of the linear gap at the rear of the door frame there is intimate contact between the gap sealant and the adjacent surfaces<br>• The bead of gap sealant must finish flush with the door frame/adjacent wall<br>• The gap sealant must be applied to a minimum depth in accordance with Sections 7.19.2, but in linear gap widths up to 5mm, the gap may be too narrow, to apply, or measure, this minimum requirement. In this scenario, a continuous bead of gap sealant must be applied over the entire length of the linear gap to the maximum achievable depth, prior to the installation of architraves which meet the requirements of Section 7.18.8 |

### *7.19.3.3 Mineral Rock Fibre*

| MINERAL ROCK FIBRE |
|---|
| • The base density of the mineral rock fibre is not critical, provided the requirements detailed in the points below are met<br>• It must be ensured that mineral rock fibre is utilised. Insulation materials manufactured from, or comprising glass fibres, are not permitted<br>• Mineral rock fibre must be tightly packed for the full depth of the frame, over the entire length of the linear gap, with allowance made for the correct depth of gap sealant<br>• Interruption by the frame packers at each fixing location is permitted, but it must be ensured that the mineral rock fibre is fitted tightly packed against both sides of each packer<br>• There must be no large voids present within the mineral rock fibre |

### *7.19.3.4 Closed Cell Polyethylene Backing Rods*

| CLOSED CELL POLYETHYLENE BACKING RODS |
|---|
| • Closed cell polyethylene backing rods must be installed in continuous lengths, which must only be interrupted by the frame packers at each of the frame fixing positions<br>• Rods must be fitted within the linear gap using a tight friction fit. To enable this, rods must always be of a larger diameter than the linear gap width into which they are being installed<br>• Rods must be set back from the frame/wall face to a degree which allows the correct depth of gap sealant to be applied |

### *7.19.3.5 Expanding FR PU Foam*

| EXPANDING FR PU FOAM |
|---|
| • Expanding FR PU foam must fill the full depth of the frame, over the entire length of the linear gap, with allowance made for the correct depth of gap sealant<br>• There must be no large voids present within the expanding FR PU foam |

## 7.20 Perimeter Door Seals

### 7.20.1 Intumescent Seals

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | |
|---|---|---|---|---|
| INTUMESCENT SEAL TYPE/S | Option 1 | Graphite | | |
| | Option 2 | Palusol | | |
| | Option 3 | Lorient 617 | | |
| APPROVED MANUFACTURERS/SUPPLIERS | It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Fire Seals Association (IFSA) or that the product is included in a Third-Party Certification scheme, such as that provided by KFS Certification, to ensure product quality and consistency. A number of approved manufacturers/suppliers are detailed below | | | |
| | 1 | Sealed Tight Solutions | 4 | Mann McGowan Fabrications |
| | 2 | Lorient Polyproducts | 5 | Intumescent Seals |
| | 3 | Pyroplex | 6 | Halspan |
| INTUMESCENT SEAL SIZE/POSITION | Refer to relevant figures in Appendix A to H, as applicable | | | |
| ADDITIONAL REQUIREMENTS/NOTES | • All perimeter intumescent seals in a door assembly must be of the same type/model/manufacturer<br>• A Graphite based intumescent seal meeting the requirements detailed above may be included in the closing leaf edge/s for the purposes of DDA regulations. This intumescent seal must be in addition to those detailed for the relevant leaf configurations in Appendix A to H, as applicable.<br>• Where possible, intumescent seals must be fitted in 2100mm lengths. Intumescent seals may be fitted in multiple lengths, provided the smallest sections are no shorter than 150mm and all lengths of intumescent seal must tightly abut one another. | | | |

### 7.20.2 Ambient Temperature Smoke Seals

Smoke seals, or combined intumescent/smoke seals (using the specification approved in Appendix A to H), that have been tested in accordance with BS EN 1634-3: 2004 (ambient temperature) or BS476: Part 31: Section 31.1: 1983 and shown not to leak by more than $3m^3/m/hr$ at 25Pa may be used in conjunction with the proposed door assemblies to provide smoke control.

The orientation of the seals, door edge gaps, degree of hardware interruption, and leaf configuration, will need to be as tested in accordance with BS EN 1634-3: 2004 (ambient temperature) or BS476: Part 31: Section 31.1: 1983 to achieve the desired level of smoke control, unless these conflict with the intumescent seal widths and positions as described in Appendix A to H, in which case, the latter shall take precedence.

Test evidence to BS476: Part 22: 1987 shall be available to demonstrate that the smoke seals will not adversely affect the overall fire resistance of timber door assemblies, when fitted in the proposed arrangements.

This report does not provide comment or approval on the suitability of seals to achieve smoke sealing performance and it is the responsibility of others to ensure that appropriate test data is available where this specification is required.

### 7.20.3 Acoustic Seals

Acoustic seals or combined intumescent/acoustic seals which have been successfully fire tested in accordance with BS476: Part 22: 1987 or BS EN 1634-1:2014 may be used in conjunction with the proposed door assemblies.

Leaf thickness, leaf/frame construction and perimeter intumescent seal specification must remain as tested with the proposed acoustic seal or be in accordance with that detailed herein, whichever is greater.

Acoustic seals must be located as fire tested, or in a less onerous position unless these conflict with the intumescent seal widths and positions as described in Appendix A to H, in which case, the latter shall take precedence.

# 8. Conclusion

It is the evaluation of KFS that if the proposed door assemblies utilising Optima FD60 door leaves installed in timber door frames were manufactured 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 60 minutes.

Partially insulating door assemblies are determined using the criteria given in Section 7 of BS476: Part 22: 1987. These assemblies are evaluated as partially insulating door assemblies on the basis that the 'solid' part of the leaf satisfies the temperature criteria given in Section 10.4 of BS 476: Part 20: 1987 and any non-insulating features, such as glazing, are less than 20% of the surface area of the leaf.

The assemblies outlined, herein, are permitted to have glazed areas, and so could, therefore, be evaluated to this standard if the maximum total aperture area is less than 20% of the leaf size.

The leaves may include small apertures, up to a maximum of 20% of the leaf size and can be evaluated to Section 7 in BS 476: Part 22: 1987 as partially insulating door assemblies for 60 minutes fire resistance.

The doors can also be assessed to Section 6 of BS476: Part 22: 1987 for a 60 minute performance rating for both integrity and insulation, without apertures in the or with apertures incorporating fully insulating glass.

# 9. 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.

It is the responsibility of others to establish whether the proposed product meets any other relevant requirements, including any other requirements for fire performance and life safety, as defined in documents such as the Building Regulations, and the Fire Strategy/Risk Assessment for the project.

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 assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Kiwa Fire Safety Compliance 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.

As per the guidance outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*, appropriate action has been taken to mitigate the risk of a conflict of interest arising during the preparation of this report. All individuals involved in the production, or subsequent review, of this assessment have declared any perceived conflicts of interest, with regards to the sponsor or subject(s) of this report, prior to working on this project.

The assessor and reviewer have been deemed suitable for involvement in the production of this assessment in accordance with the guidance outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*.

Where the constructional information in this report is taken from details provided to Kiwa Fire Safety Compliance 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 KFS, 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 KFS.

This report is not intended to be a complete specification for the proposed assemblies and it is the responsibility of others to ensure that the assemblies are suitable for the intended purpose; whilst incorporating the requirements of this report. Further, the assemblies must be manufactured/installed by experienced/trained personnel using appropriate and established working practices/techniques.

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, KFS have a duty of care to advise that introduction of CE Marking may become compulsory for fire resisting doorsets marketed in the EU, during the validity period of this report; in which case, users should contact KFS for further details/advice.

Where the assessed constructions have not been subject to an on-site audit by Kiwa Fire Safety Compliance, 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. KFS 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; either retained by the latch, or self-closing device, or locked shut, as applicable. 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 evaluation as to what the fire performance of the construction/system would be should it to be tested to the named standard. It is KFS's experience that such an evaluation 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 KFS have been commissioned to liaise with the Authorities that have jurisdiction for the building in question for the purpose of obtaining the necessary approvals, KFS 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 KFS 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.

# 10. Validity

This Field of Application Report has been prepared based on Kiwa Fire Safety Compliance's present knowledge of the products described, the stated testing regime and the submitted test evidence.

The assessment is valid initially for a period of five years after which time it is recommended that it be submitted to Kiwa Fire Safety Compliance for re-evaluation. For this reason, anyone using this document after 6 March 2030 should confirm its ongoing validity.

This assessment report is not valid unless it incorporates the declaration, in Section 5, duly signed by the applicant.

## Prepared by:

Chris Avery
TIFireE ACABE
Senior Fire Safety Engineer
Kiwa Fire Safety Compliance
(part of the Kiwa UK Group)

## Reviewed by:

Will Lightfoot
BEng (Hons) MSc C.Build E MCABE AIFireE
Associate Director of Product Evaluation
Kiwa Fire Safety Compliance
(part of the Kiwa UK Group)

# 11. Declaration by the Applicant

| | |
|---|---|
| KFS Engineering Assessment Report | PAR/10341/02 Revision C |
| Client | Halspan Ltd |
| | |
| We the undersigned confirm that we have read and complied with the obligations placed on us by the | |

**Passive Fire Protection Forum (PFPF) - Industry Standard Procedure 2021**

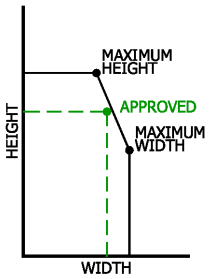
'Guide to Undertaking Technical Assessments of Fire Performance of Construction Products Based on Fire Test Evidence'

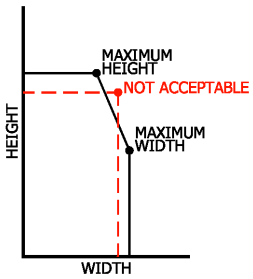
- We confirm that any changes which are subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.
- We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.
- 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.
- 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.

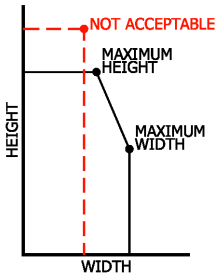
| | |
|---|---|
| | |
| Signature |  |
| Name | Andy Davies |
| Position | Technical Manager |
| Company Name | Halspan Ltd |
| Date | 02/04/2025 |

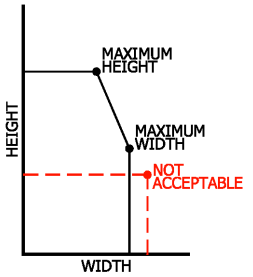
# Appendix A – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick Optima FD60 Doors in HARDWOOD Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



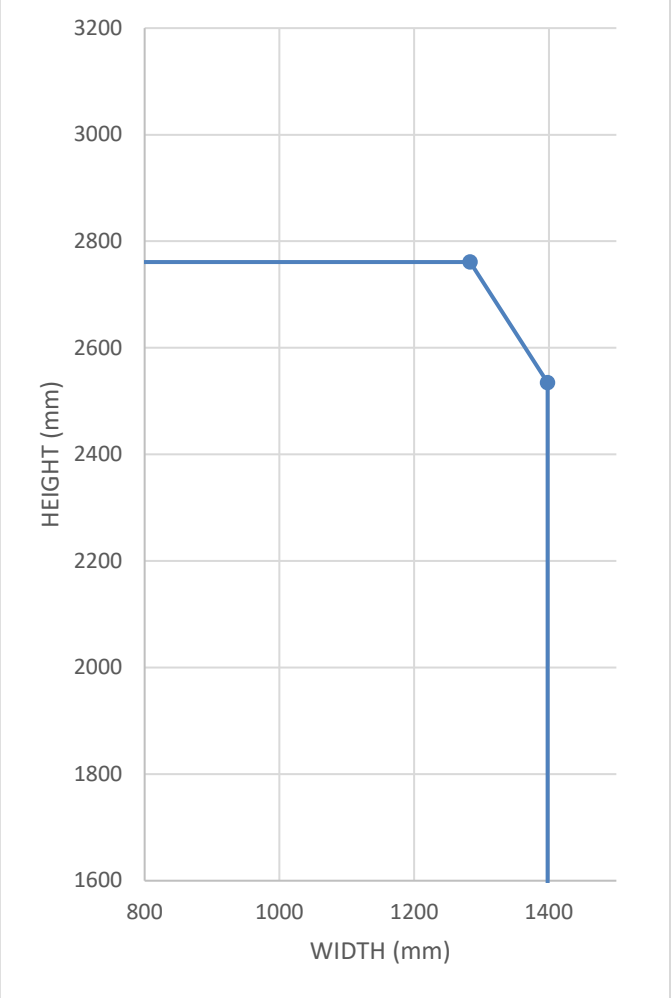
## A.1 Approved Leaf Envelope A.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2535mm | 1398mm |
| 2761mm | 1283mm |

| FIRE TEST EVIDENCE |
|---|
| #RF07128 |

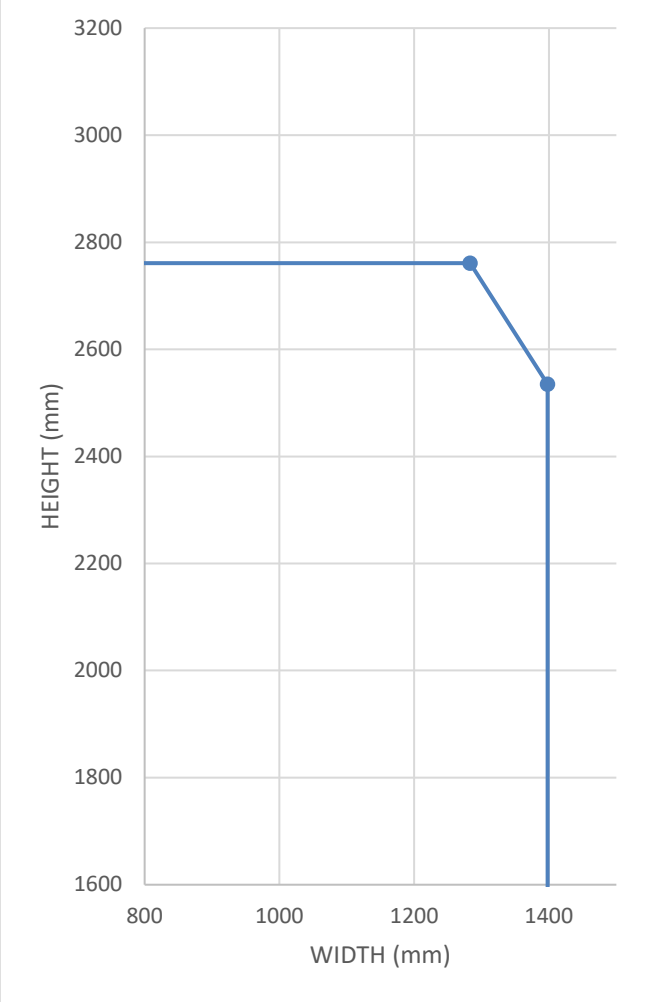



| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |

## A.2 Approved Leaf Envelope A.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/8 | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| N/A | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2535mm | 1398mm |
| 2761mm | 1283mm |
| FIRE TEST EVIDENCE | |
| #RF07128 | |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |

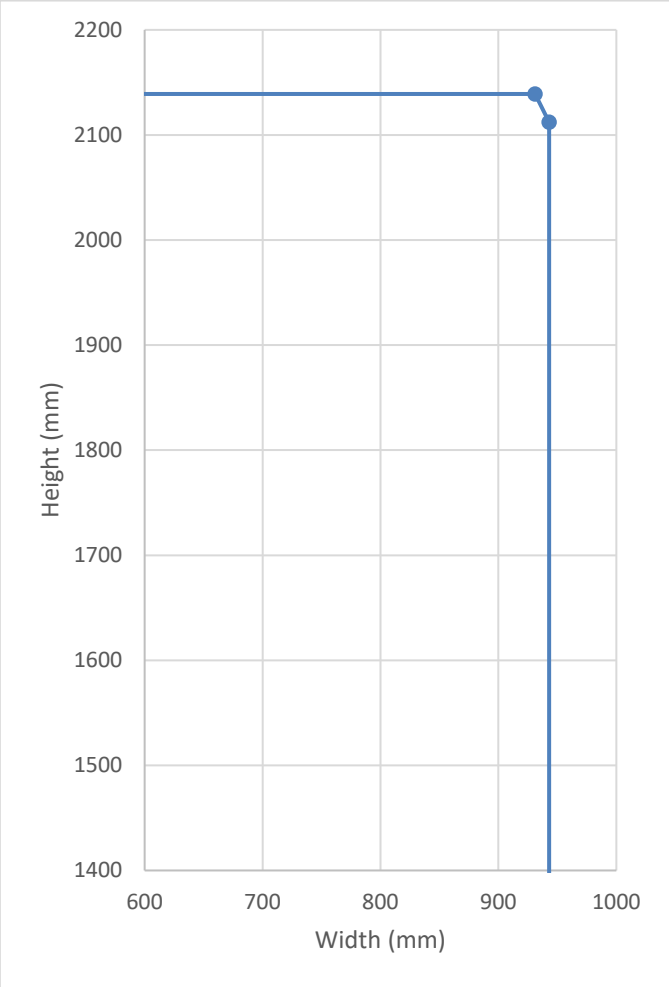
## A.3 Approved Leaf Envelope A.03

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.03 | DOUBLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3, L60/4, L60/7 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2112mm | 943mm |
| 2139mm | 931mm |

| FIRE TEST EVIDENCE |
|---|
| #WF504390 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 1no 20 x 4mm thick intumescent seal fitted in the frame reveal, central to the leaf thickness |
| | LEAF | 2no 20 x 4mm thick intumescent seals fitted in the leaf head, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME – HANGING EGDE | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the scallop and spaced 10mm apart |
| | FRAME – LEADING EGDE | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 2no 15 x 4mm thick intumescent seals fitted in the bottom edge of the leaf, central to the leaf thickness and spaced 10mm apart |

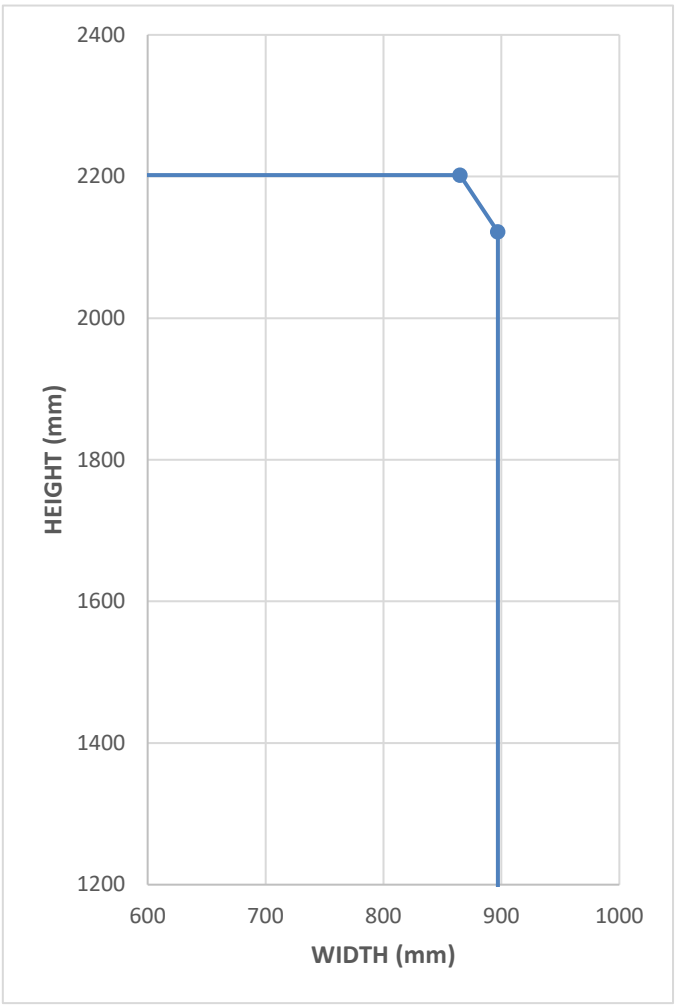
## A.4 Approved Leaf Envelope A.04

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.04 | LATCHED SINGLE ACTING, DOUBLE DOORS WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2122mm | 897mm |
| 2202mm | 865mm |

| FIRE TEST EVIDENCE |
|---|
| RF01104 – DOOR B |

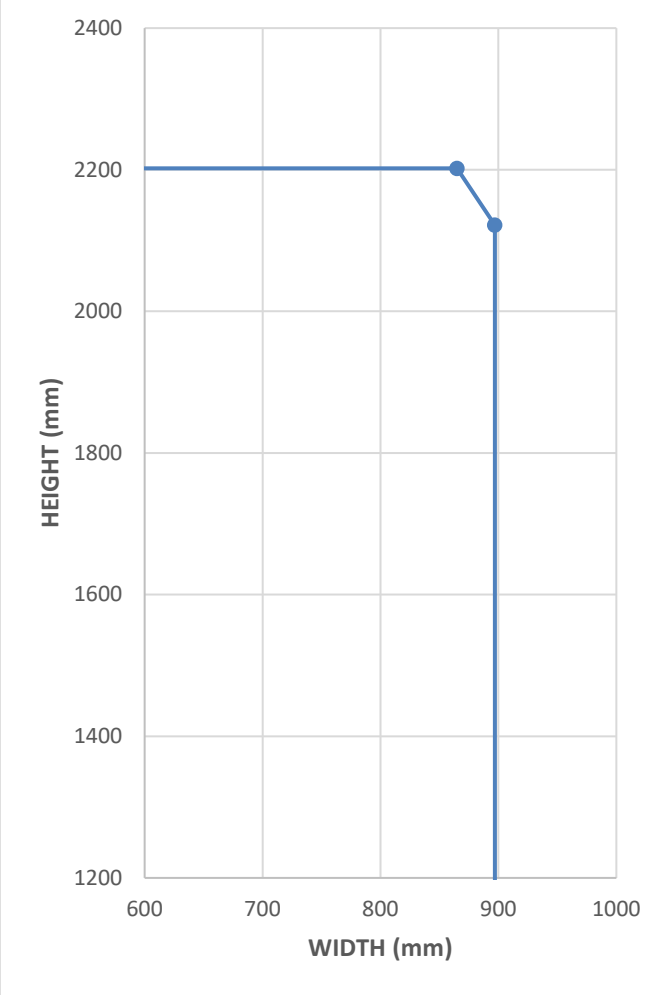



| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted in the active leaf edge, central to the leaf thickness and spaced 10mm apart |

## A.5 Approved Leaf Envelope A.05

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.05 | UNLATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/3 | |
| MEETING STILE JUNCTION | |
| Square | |
| OVERPANEL JUNCTION | |
| N/A | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2122mm | 897mm |
| 2202mm | 865mm |
| FIRE TEST EVIDENCE | |
| RF01104 – DOOR B | |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted in the active leaf edge, central to the leaf thickness and spaced 10mm apart |

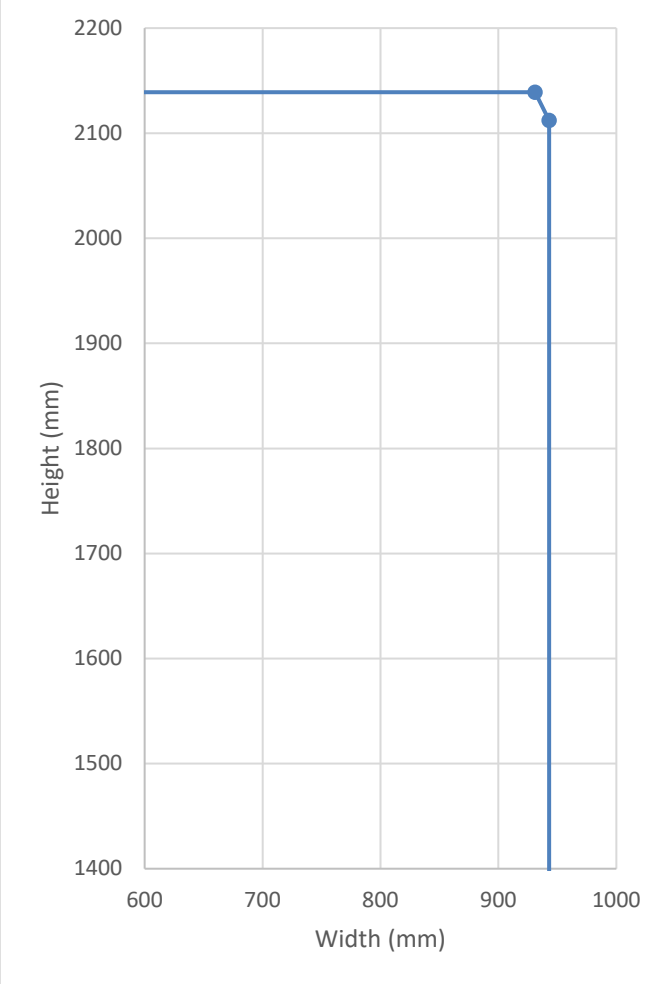
## A.6 Approved Leaf Envelope A.06

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.06 | DOUBLE ACTING, DOUBLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3, L60/4, L60/7 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2112mm | 943mm |
| 2139mm | 931mm |

| FIRE TEST EVIDENCE |
|---|
| #WF504390 |

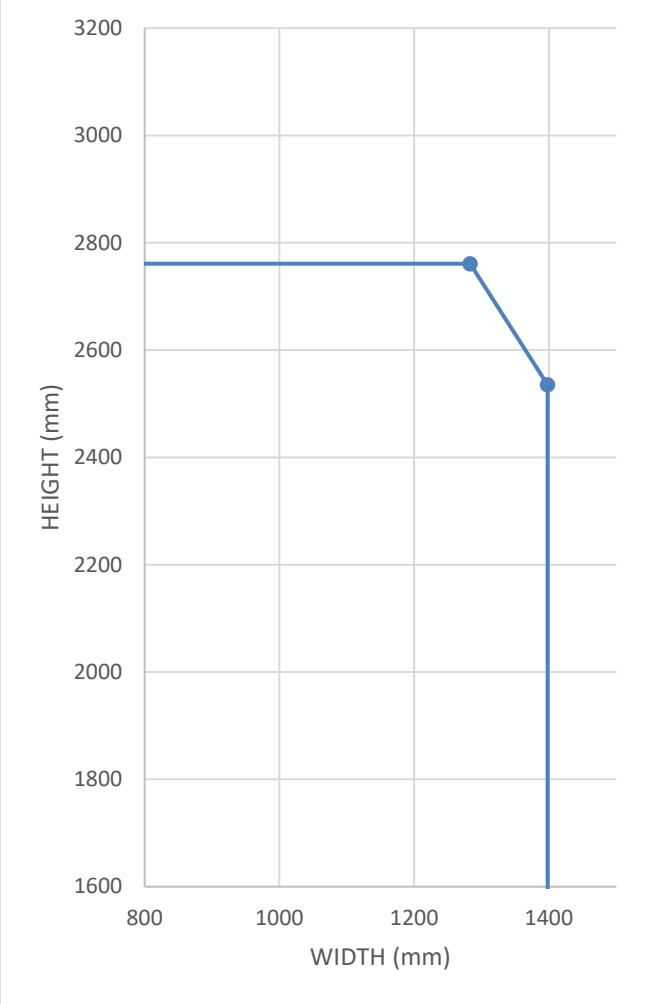



| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 1no 20 x 4mm thick intumescent seal fitted in the frame reveal, central to the leaf thickness |
| | LEAF | 2no 20 x 4mm thick intumescent seals fitted in the leaf head, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME – HANGING EGDES | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the scallop and spaced 10mm apart |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted in the active leaf edge, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 2no 15 x 4mm thick intumescent seals fitted in the bottom edge of the leaf, central to the leaf thickness and spaced 10mm apart |

## A.7 Approved Leaf Envelope A.07

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.07 | LATCHED, SINGLE ACTING, SINGLE DOOR WITH TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/8 | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| Transom | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2535mm | 1398mm |
| 2761mm | 1283mm |
| FIRE TEST EVIDENCE | |
| #RF07128 | |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| OVERPANEL | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

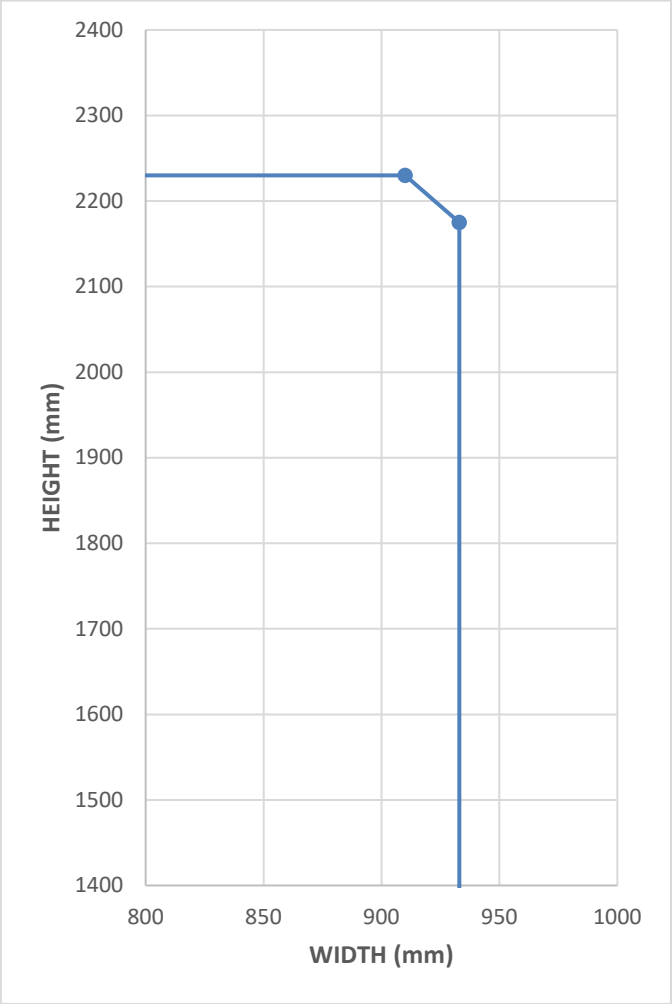
## A.8 Approved Leaf Envelope A.08

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.08 | LATCHED, SINGLE ACTING, SINGLE DOOR WITH SQUARE OR EQUALLY REBATED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/2, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| Square or Equally Rebated |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2175mm | 933mm |
| 2230mm | 910mm |

| FIRE TEST EVIDENCE |
|---|
| RF98051 |



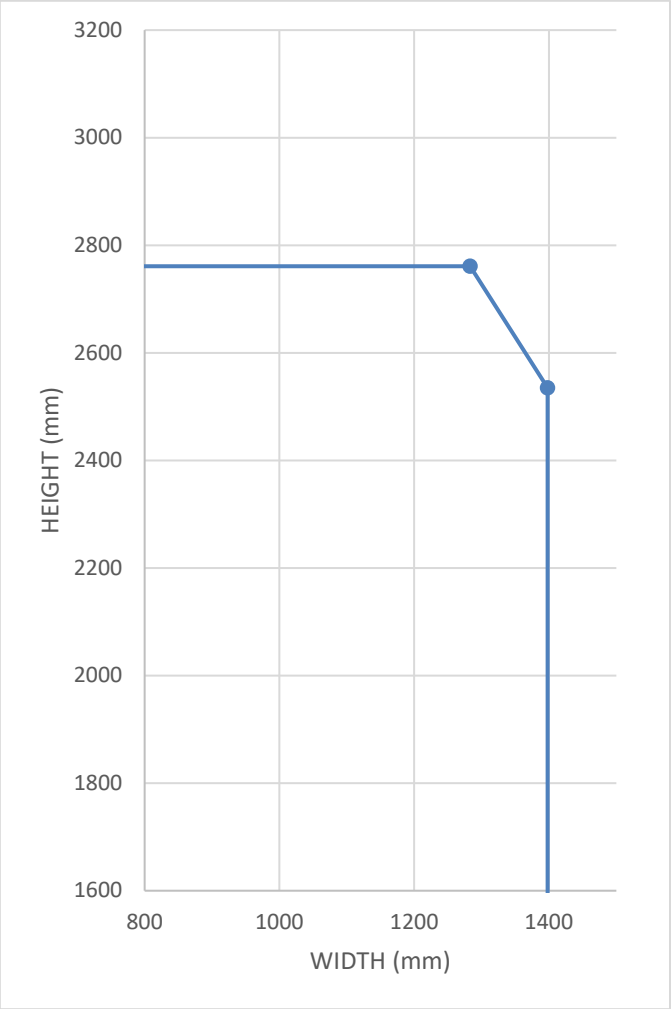

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | LEAF | 1no 10 x 4mm intumescent seal fitted central to the leaf thickness |
| | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| OVERPANEL JUNCTION | EQUALLY REBATED EDGE | 2no 15 x 4mm intumescent seals fitted into the underside of the overpanel, **and** 1no 10 x 4mm intumescent seal fitted in the rebate at the head of the leaf fitted 16mm back from the face of the leaf |

| | | |
|---|---|---|
| | SQUARE | 2no 15 x 4mm intumescent seals fitted centrally to the head of the leaf and spaced 10mm apart **and** 1no 10 x 4mm intumescent seal fitted centrally to the bottom edge of the overpanel. |
| | OVERPANEL EDGES – TOP AND VERTICAL | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

## A.9 Approved Leaf Envelope A.09

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.09 | UNLATCHED, SINGLE ACTING, SINGLE DOOR WITH TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/8 | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| Transom | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2535mm | 1398mm |
| 2761mm | 1283mm |
| FIRE TEST EVIDENCE | |
| #RF07128 | |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

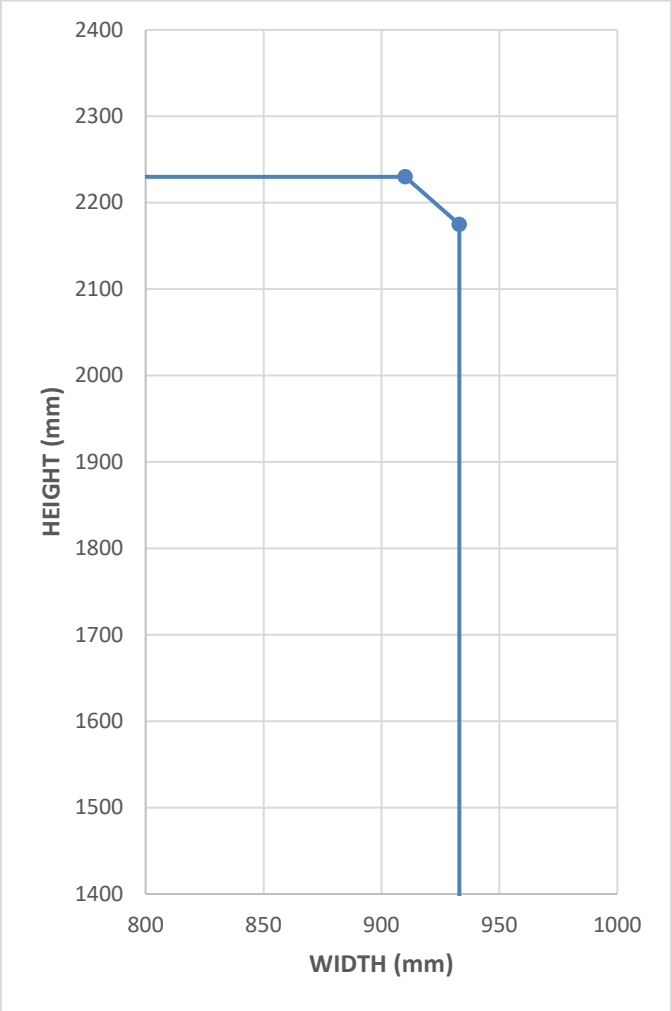
## A.10 Approved Leaf Envelope A.10

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.10 | UNLATCHED, SINGLE ACTING, SINGLE DOOR, WITH SQUARE OR EQUALLY REBATED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/2, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| Square or Equally Rebated |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2175mm | 933mm |
| 2230mm | 910mm |

| FIRE TEST EVIDENCE |
|---|
| RF98051 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | LEAF | 1no 10 x 4mm intumescent seal fitted central to the leaf thickness |
| | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| OVERPANEL JUNCTION | EQUALLY REBATED EDGE | 2no 15 x 4mm intumescent seals fitted into the underside of the overpanel, **and** 1no 10 x 4mm intumescent seal fitted in the rebate at the head of the leaf fitted 16mm back from the face of the leaf. |

| | | |
|---|---|---|
| | SQUARE | 2no 15 x 4mm intumescent seals fitted centrally to the head of the leaf and spaced 10mm apart **and** 1no 10 x 4mm intumescent seal fitted centrally to the bottom edge of the overpanel. |
| | OVERPANEL EDGES – TOP AND VERTICAL | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

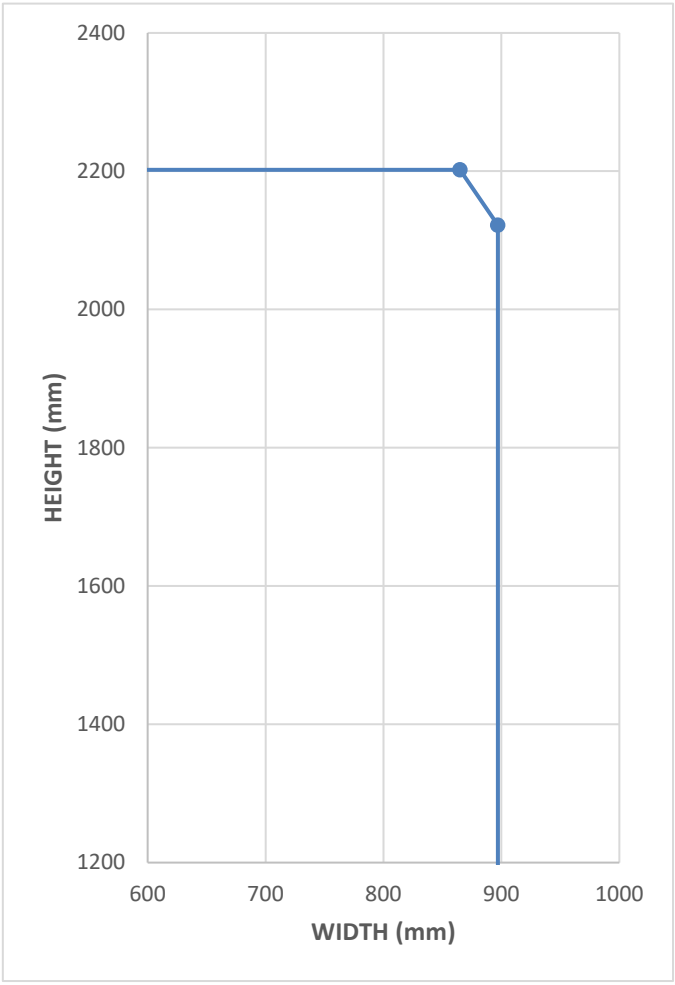
## A.11 Approved Leaf Envelope A.11

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.11 | LATCHED, SINGLE ACTING, DOUBLE DOORS WITH SQUARE MEETING STILES AND TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Transom |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2122mm | 897mm |
| 2202mm | 865mm |

| FIRE TEST EVIDENCE |
|---|
| RF01104 – DOOR B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted in the active leaf edge, central to the leaf thickness and spaced 10mm apart |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

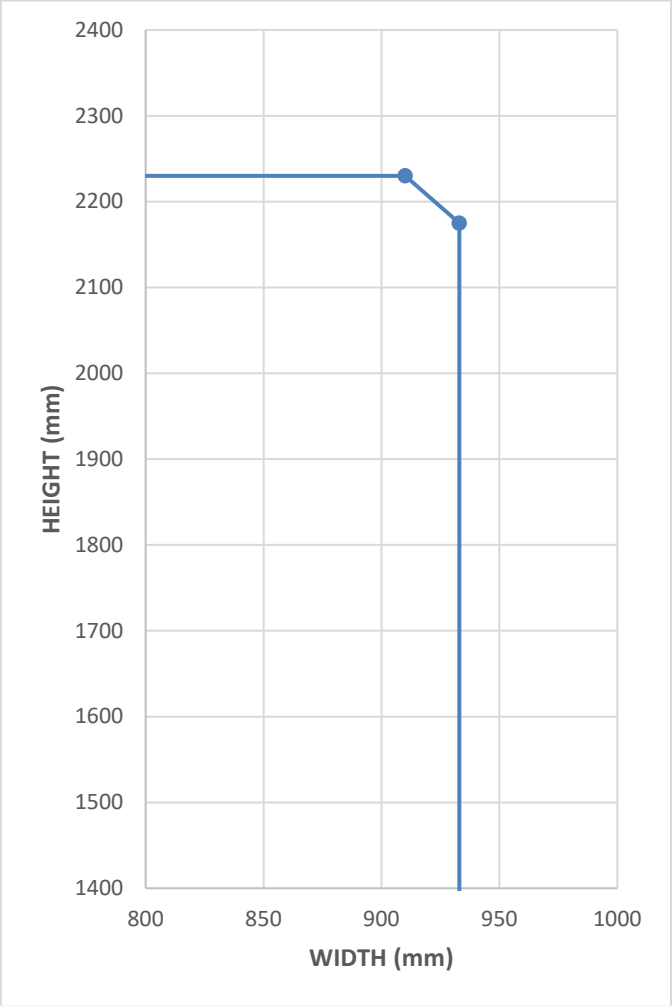
## A.12 Approved Leaf Envelope A.12

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.12 | LATCHED, SINGLE ACTING, DOUBLE DOORS WITH SQUARE MEETING EDGES AND EQUALLY REBATED OVERPANELS |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/2, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Equally Rebated |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2175mm | 933mm |
| 2230mm | 910mm |

| FIRE TEST EVIDENCE |
|---|
| RF98051 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | LEAF | 1no 10 x 4mm intumescent seal fitted central to the leaf thickness at the hanging edges |
| | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm intumescent seals in the active leaf, central to the leaf thickness and spaced 10mm apart, **and**, 1no 10 x 4mm thick intumescent seal in the passive leaf |

| | | |
|---|---|---|
| OVERPANEL JUNCTION | EQUALLY REBATED EDGE | 2no 15 x 4mm intumescent seals fitted into the underside of the overpanel, **and** 1no 10 x 4mm intumescent seal fitted in the rebate at the head of the leaf fitted 16mm back from the face of the leaf |
| | OVERPANEL EDGES – TOP AND VERTICAL | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

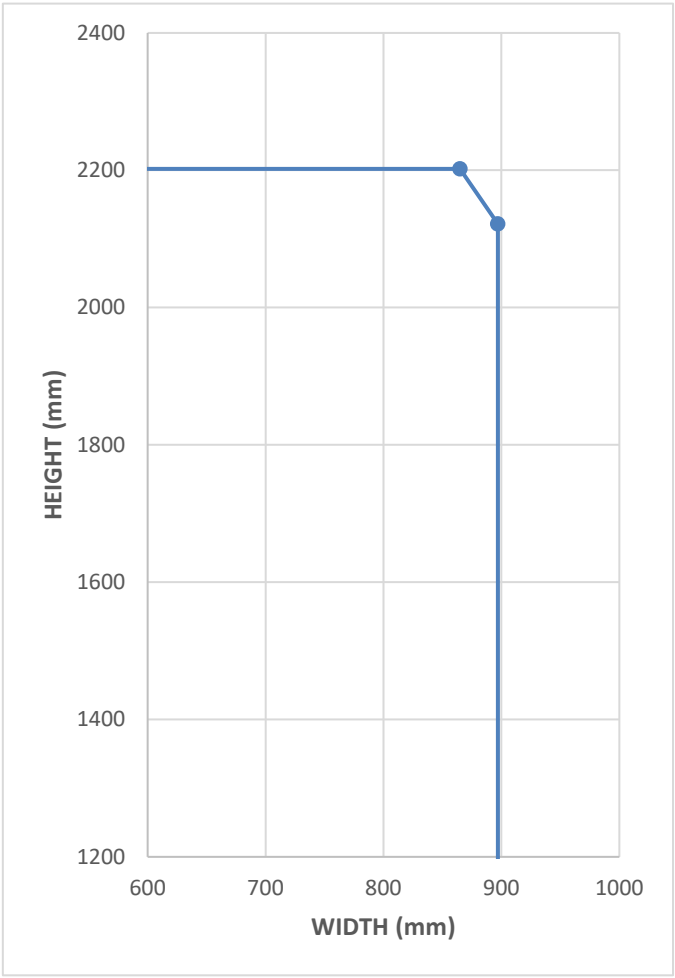
## A.13 Approved Leaf Envelope A.13

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.13 | UNLATCHED, SINGLE ACTING, DOUBLE DOORS WITH SQUARE MEETING STILES AND TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Transom |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2122mm | 897mm |
| 2202mm | 865mm |

| FIRE TEST EVIDENCE |
|---|
| RF01104 – DOOR B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME - DOOR | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted in the active leaf edge, central to the leaf thickness and spaced 10mm apart |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

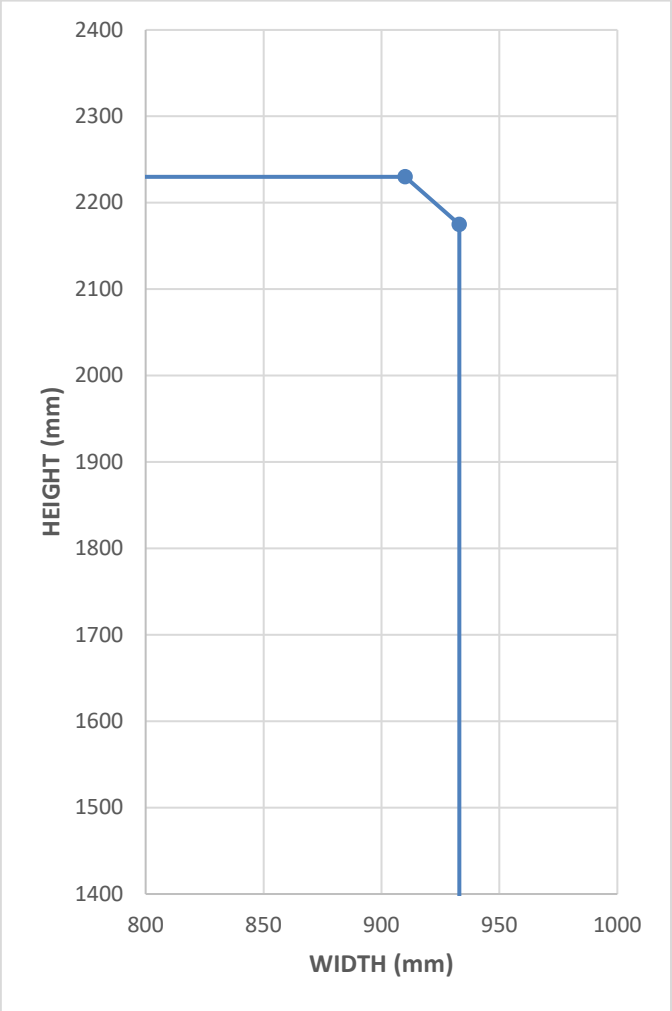
## A.14 Approved Leaf Envelope A.14

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| A.14 | UNLATCHED, SINGLE ACTING, DOUBLE DOORS WITH SQUARE MEETING EDGES AND EQUALLY REBATED OVERPANELS |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/2, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Equally Rebated |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2175mm | 933mm |
| 2230mm | 910mm |

| FIRE TEST EVIDENCE |
|---|
| RF98051 |

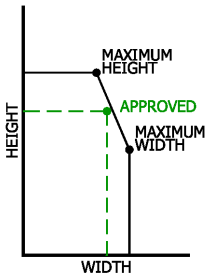


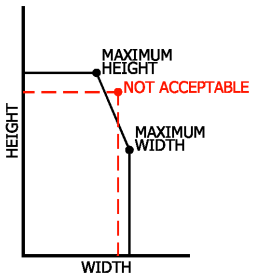

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | LEAF | 1no 10 x 4mm intumescent seal fitted central to the leaf thickness at the hanging edges |
| | FRAME | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 15 x 4mm intumescent seals in the active leaf, central to the leaf thickness and spaced 10mm apart, **and**, 1no 10 x 4mm thick intumescent seal in the passive leaf |

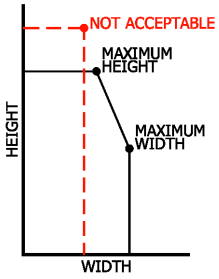
| | | |
|---|---|---|
| OVERPANEL JUNCTION | EQUALLY REBATED EDGE | 2no 15 x 4mm intumescent seals fitted into the underside of the overpanel, **and** 1no 10 x 4mm intumescent seal fitted in the rebate at the head of the leaf fitted 16mm back from the face of the leaf |
| | OVERPANEL EDGES – TOP AND VERTICAL | 2no 15 x 4mm thick intumescent seals fitted in the frame reveal, central to the overpanel thickness and spaced 10mm apart |

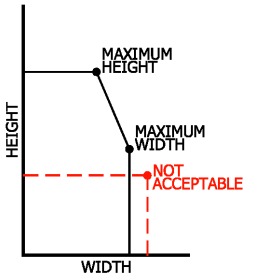
# Appendix B – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick Optima FD60 Doors in MDF Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



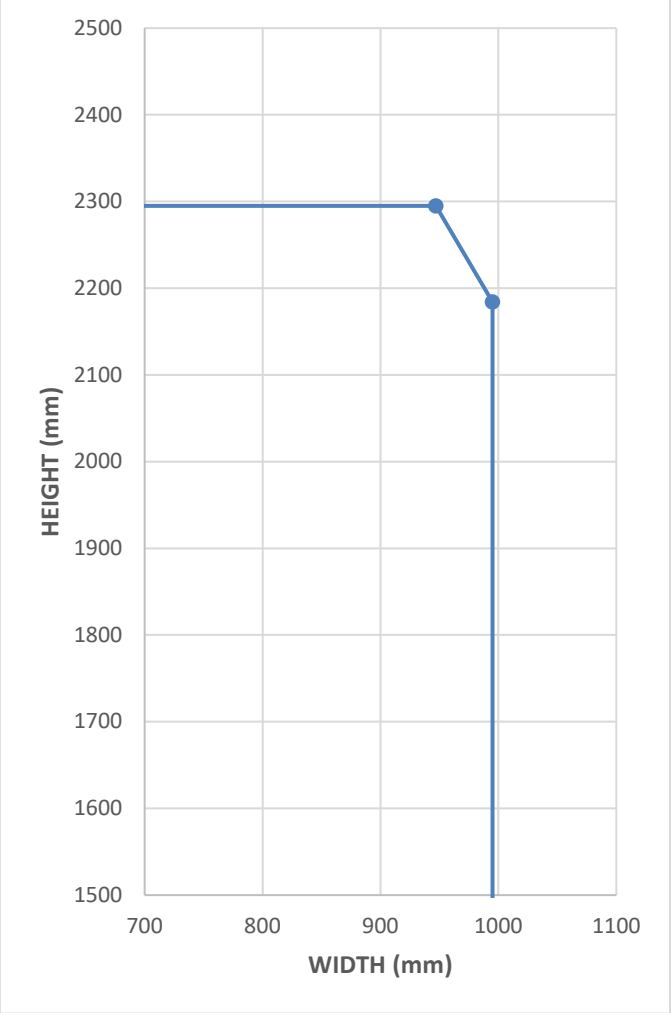
## B.1 Approved Leaf Envelope B.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| B.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| MDF |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2184mm | 995mm |
| 2295mm | 947mm |

| FIRE TEST EVIDENCE |
|---|
| BMT/FEP/F15012B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| BOTTOM EDGE | LEAF | None fitted |

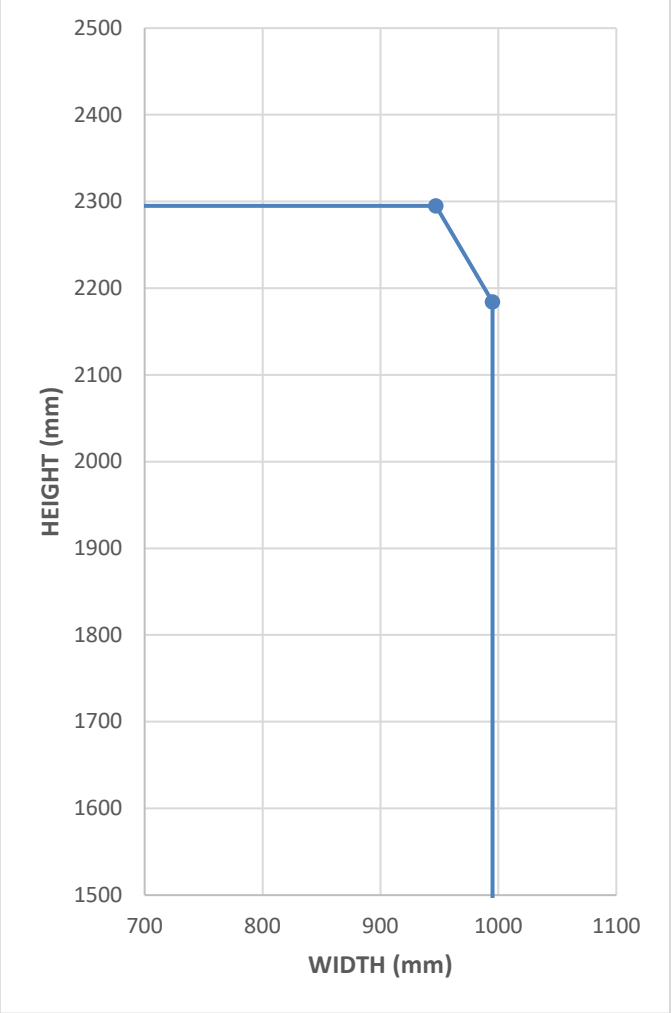
## B.2 Approved Leaf Envelope B.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| B.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| MDF |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2184mm | 995mm |
| 2295mm | 947mm |

| FIRE TEST EVIDENCE |
|---|
| BMT/FEP/F15012B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| BOTTOM EDGE | LEAF | None fitted |

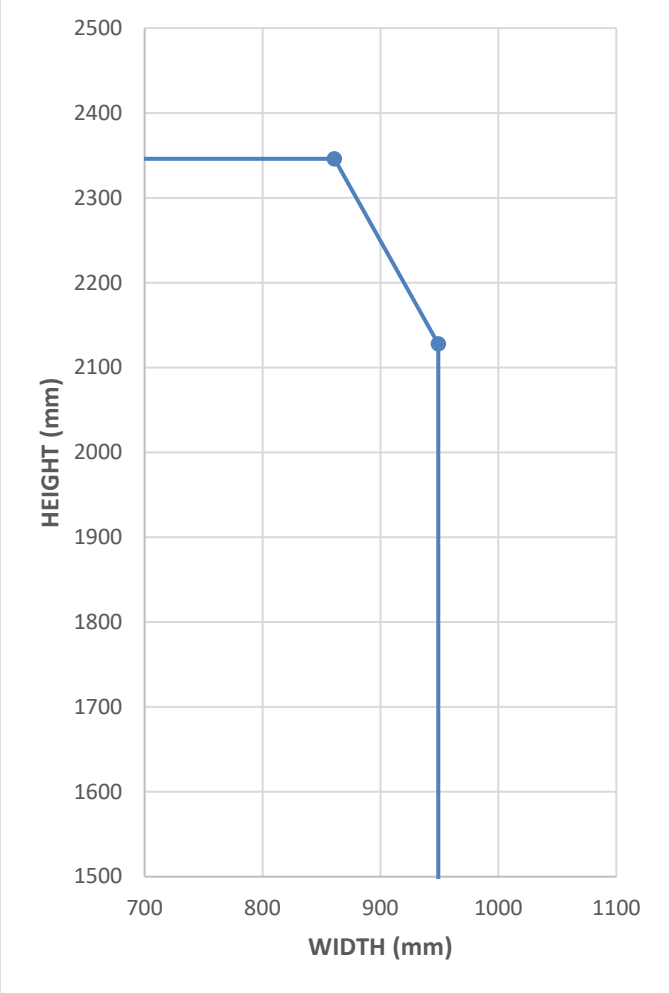
## B.3 Approved Leaf Envelope B.03

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| B.03 | LATCHED, SINGLE ACTING, DOUBLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| MDF |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2128mm | 949mm |
| 2346mm | 861mm |

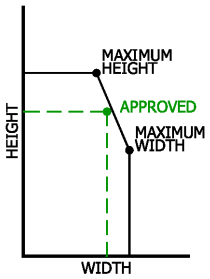
| FIRE TEST EVIDENCE |
|---|
| CFR2211141 – Door A |

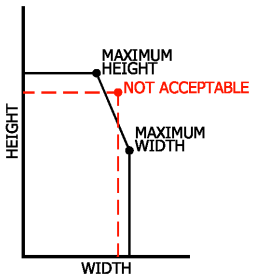


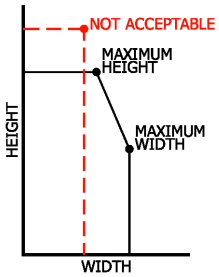

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| | LEAF | 1no 15 x 4mm thick intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to leaf thickness of the active leaf, spaced 10mm apart **and** 1no 15 x 4mm thick intumescent seal fitted centrally to the passive leaf |
| BOTTOM EDGE | LEAF | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |

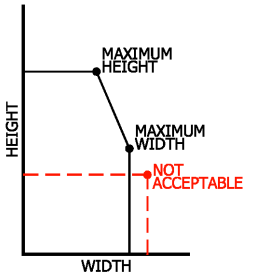
# Appendix C – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick Optima FD60 Doors in HOLLOW STEEL Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



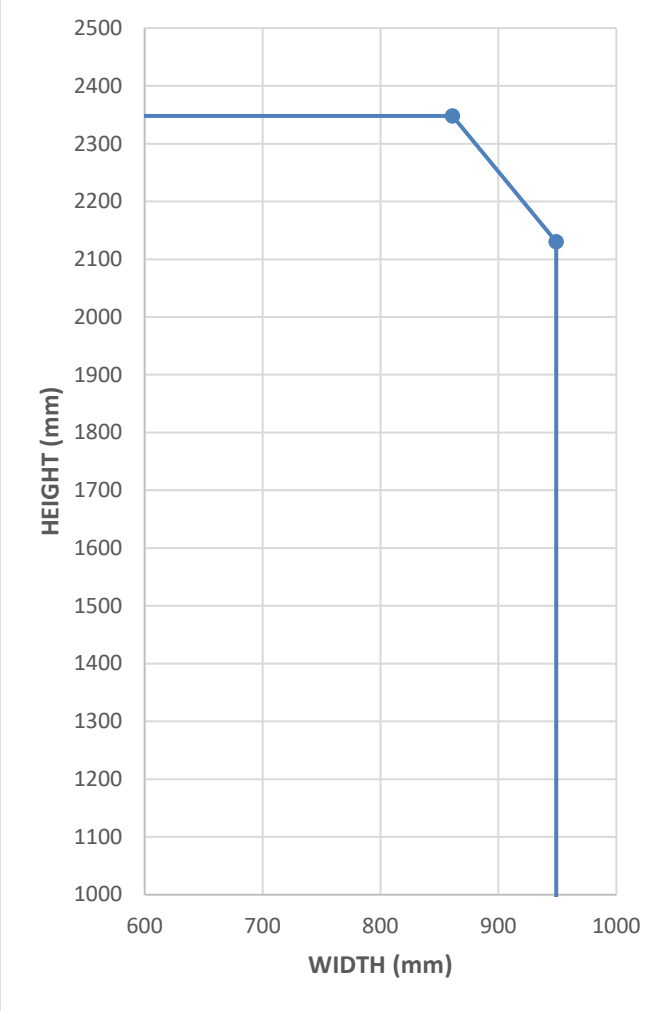
## C.1 Approved Leaf Envelope C.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| C.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hollow Steel |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2130mm | 949mm |
| 2348mm | 861mm |

| FIRE TEST EVIDENCE |
|---|
| WARRES 111202 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 1no 38 x 4mm thick Palusol intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 2no 10 x 4mm thick intumescent seals fitted central to the leaf thickness spaced 18mm apart |
| BOTTOM EDGE | LEAF | None fitted |

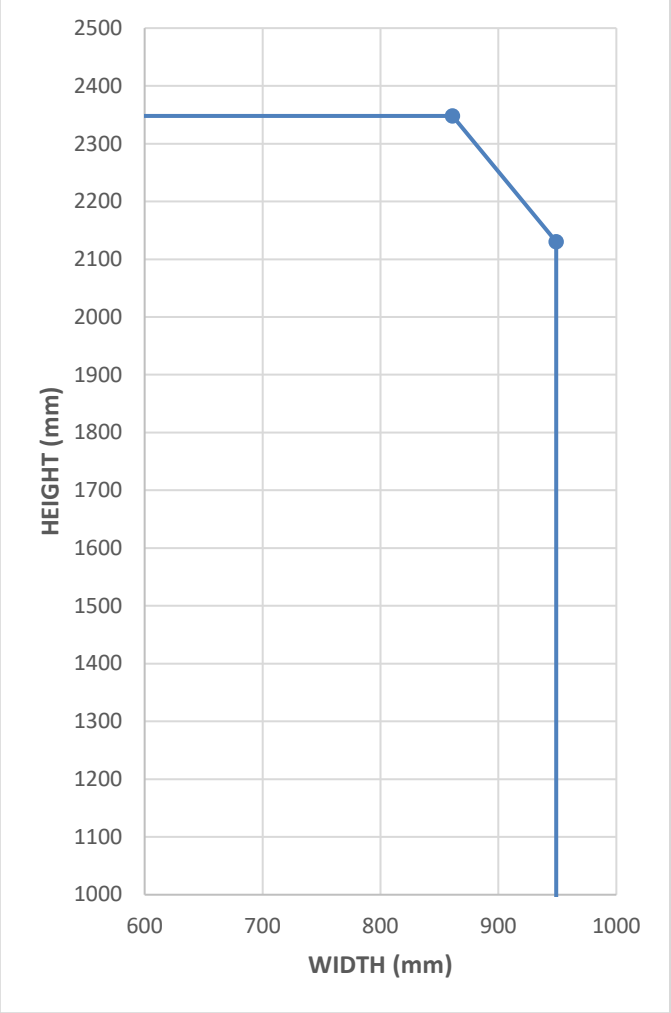
## C.2 Approved Leaf Envelope C.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| C.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hollow Steel |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2130mm | 949mm |
| 2348mm | 861mm |

| FIRE TEST EVIDENCE |
|---|
| WARRES 111202 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 1no 38 x 4mm thick Palusol intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 2no 10 x 4mm thick intumescent seals fitted central to the leaf thickness spaced 18mm apart |
| BOTTOM EDGE | LEAF | None fitted |

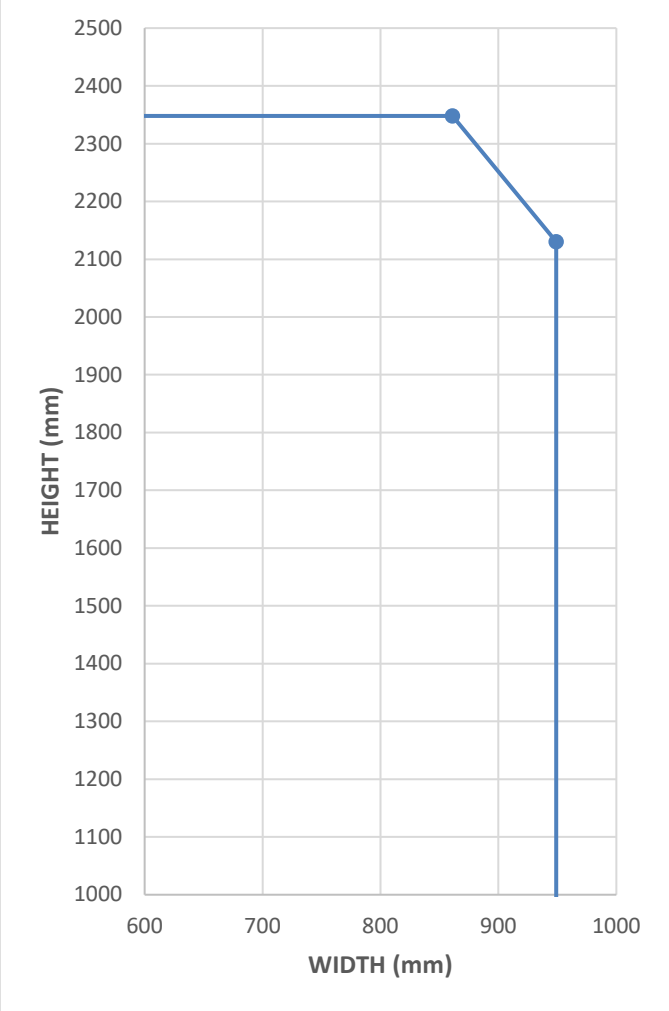
## C.3 Approved Leaf Envelope C.03

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| C.03 | LATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hollow Steel |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2130mm | 949mm |
| 2348mm | 861mm |

| FIRE TEST EVIDENCE |
|---|
| WARRES 111202 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 1no 38 x 4mm thick Palusol intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 2no 10 x 4mm thick intumescent seals fitted central to the leaf thickness spaced 18mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 10 x 4mm thick intumescent seals, fitted centrally and spaced 10mm apart in the active leaf and 1no 10 x 4mm thick intumescent seal fitted centrally to the leaf thickness in the passive leaf |

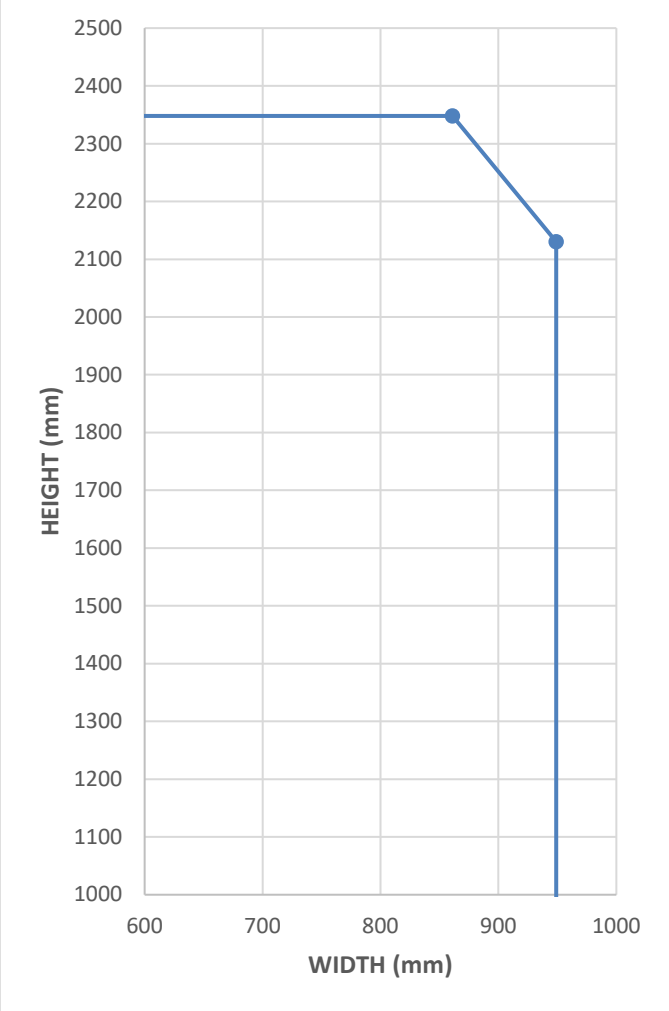
## C.4 Approved Leaf Envelope C.04

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| C.04 | UNLATCHED SINGLE ACTING, DOUBLE DOOR, WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Hollow Steel |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2130mm | 949mm |
| 2348mm | 861mm |

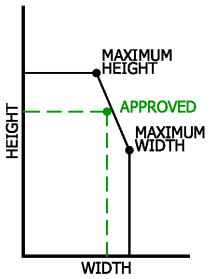
| FIRE TEST EVIDENCE |
|---|
| WARRES 111202 |

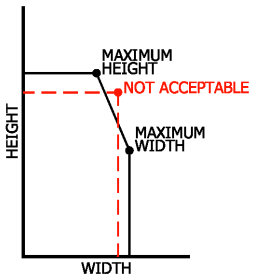


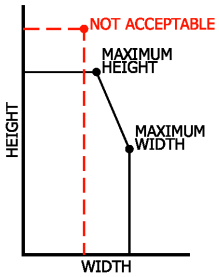

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 1no 38 x 4mm thick Palusol intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 2mm thick graphite based intumescent seal used as a backing sheet **and** 2no 10 x 4mm thick intumescent seals fitted central to the leaf thickness spaced 18mm apart |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 10 x 4mm thick intumescent seals, fitted centrally and spaced 10mm apart in the active leaf and 1no 10 x 4mm thick intumescent seal fitted centrally to the leaf thickness in the passive leaf |

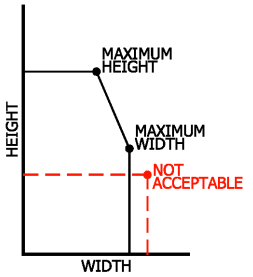
# Appendix D – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick Optima FD60 Doors in BACKFILLED STEEL Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



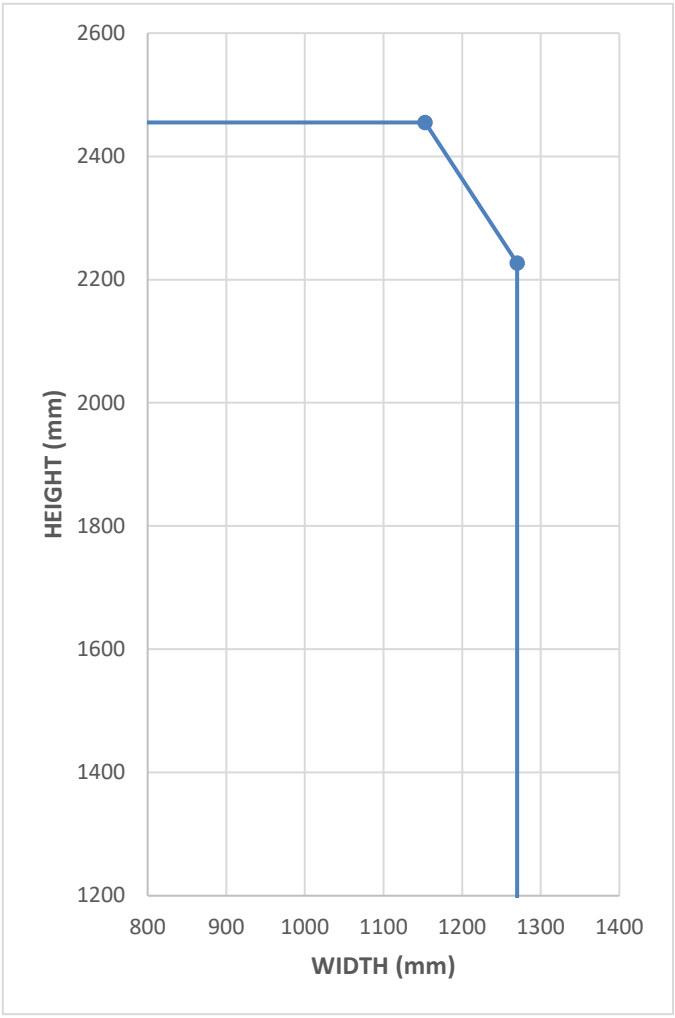
## D.1 Approved Leaf Envelope D.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| D.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Backfilled Steel |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2227mm | 1270mm |
| 2455mm | 1153mm |

| FIRE TEST EVIDENCE |
|---|
| RF01073 – Door B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| BOTTOM EDGE | LEAF | None fitted |

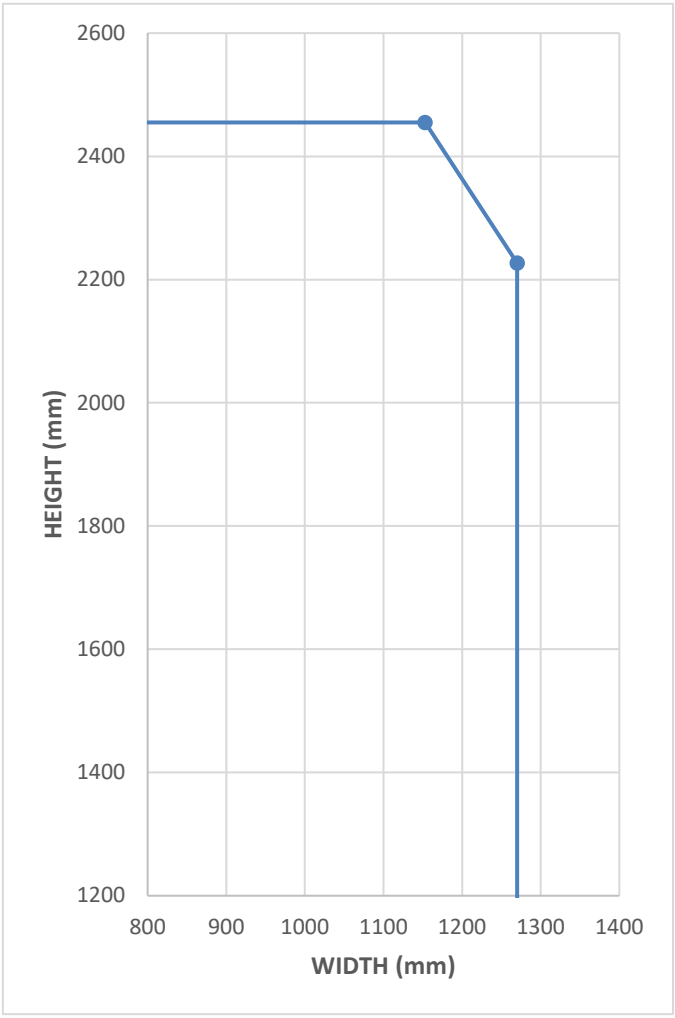
## D.2 Approved Leaf Envelope D.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| D.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Backfilled Steel |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2227mm | 1270mm |
| 2455mm | 1153mm |

| FIRE TEST EVIDENCE |
|---|
| RF01073 – Door B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| VERTICAL EDGES | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| BOTTOM EDGE | LEAF | None fitted |

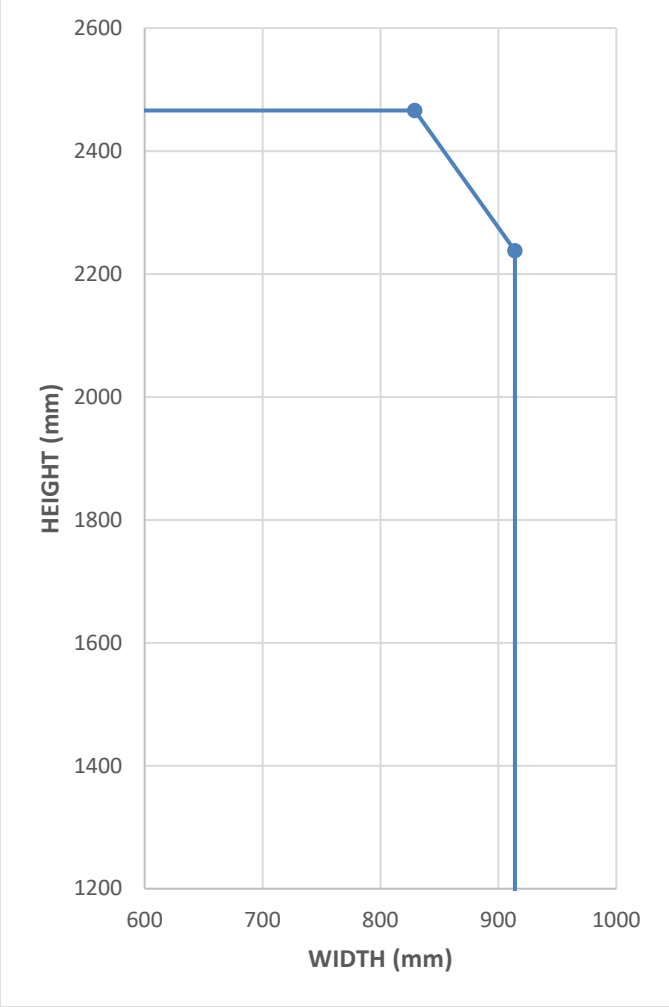
## D.3 Approved Leaf Envelope D.03

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| D.03 | LATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Backfilled Steel |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2238mm | 914mm |
| 2466mm | 829mm |

| FIRE TEST EVIDENCE |
|---|
| RF01074 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| VERTICAL EDGES | LEAF - HANGING | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 10 x 4mm intumescent seals in the active leaf fitted centrally and spaced 10mm apart<br>and<br>1no 10 x 4mm intumescent seal fitted centrally in the passive leaf |

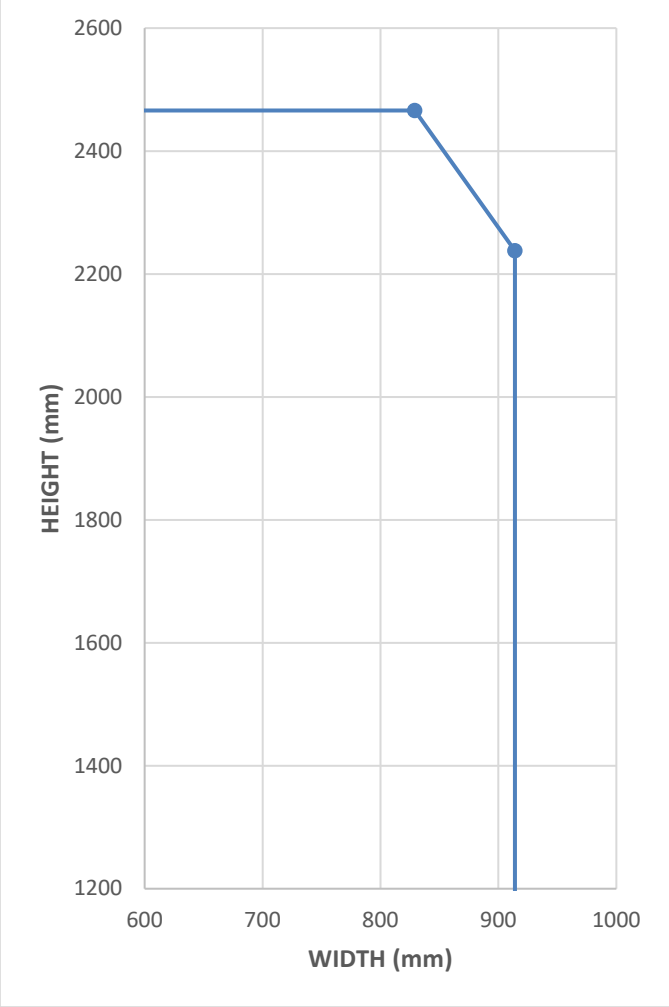
## D.4 Approved Leaf Envelope D.04

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| D.04 | UNLATCHED SINGLE ACTING, DOUBLE DOOR, WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima |
| FRAME MATERIAL |
| Backfilled Steel |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2238mm | 914mm |
| 2466mm | 829mm |

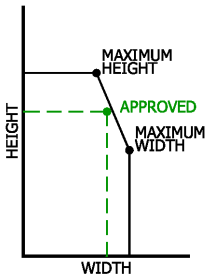
| FIRE TEST EVIDENCE |
|---|
| RF01074 |

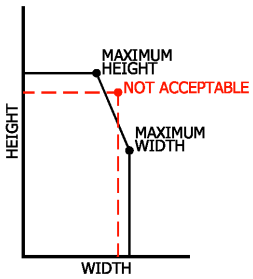


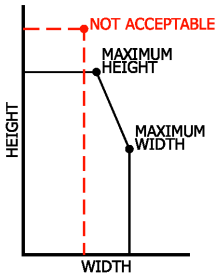

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | LEAF | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| VERTICAL EDGES | LEAF - HANGING | 1no 38 x 4mm thick intumescent seal centrally fitted to the leaf thickness |
| BOTTOM EDGE | LEAF | None fitted |
| MEETING STILES | SQUARE | 2no 10 x 4mm intumescent seals in the active leaf fitted centrally and spaced 10mm apart<br>and<br>1no 10 x 4mm intumescent seal fitted centrally in the passive leaf |

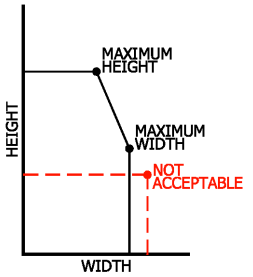
# Appendix E – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick BOND-UP FD60 Doors in HARDWOOD Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



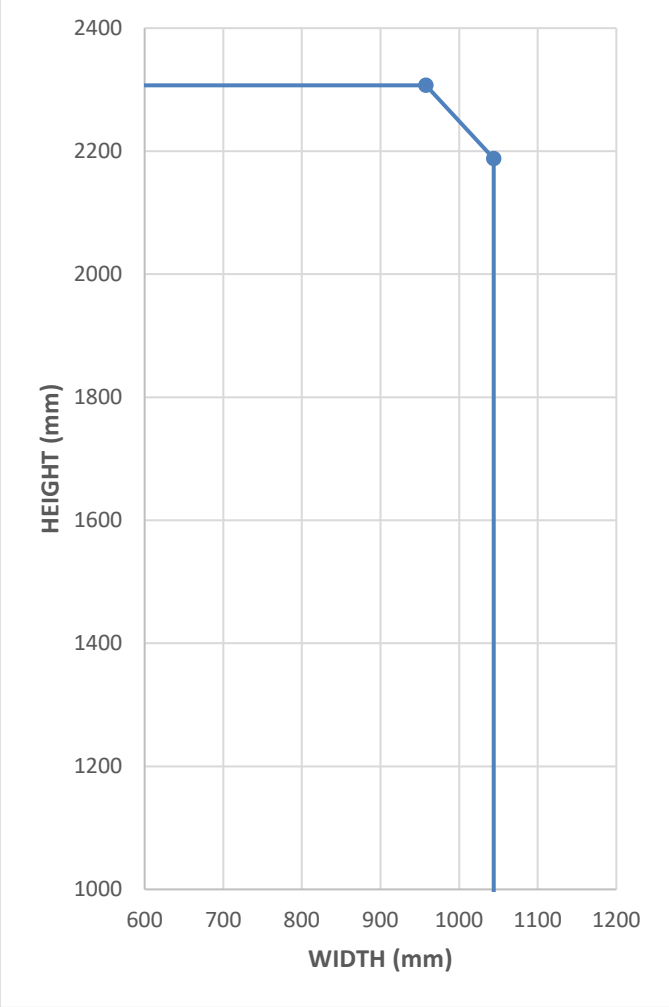
## E.1 Approved Leaf Envelope E.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2118mm | 1044mm |
| 2307mm | 958mm |

| FIRE TEST EVIDENCE |
|---|
| RF04074 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 1no 25 x 4mm thick intumescent seal fitted centrally to the leaf thickness |
| VERTICAL EDGES | FRAME | 1no 25 x 4mm thick intumescent seal fitted centrally to the leaf thickness |
| BOTTOM EDGE | LEAF | None fitted |

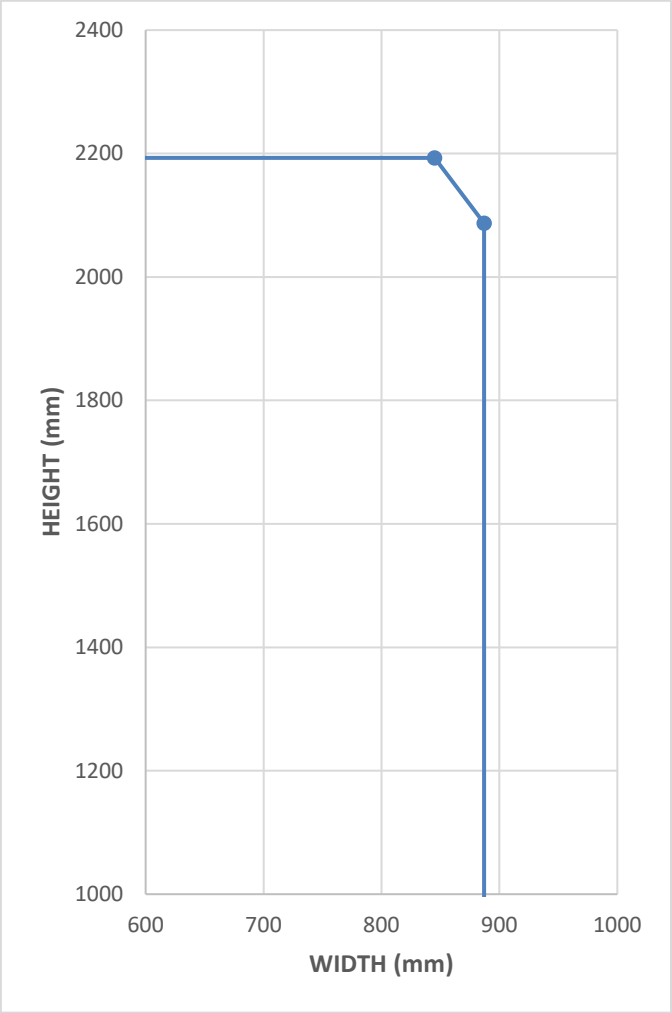
## E.2 Approved Leaf Envelope E.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |

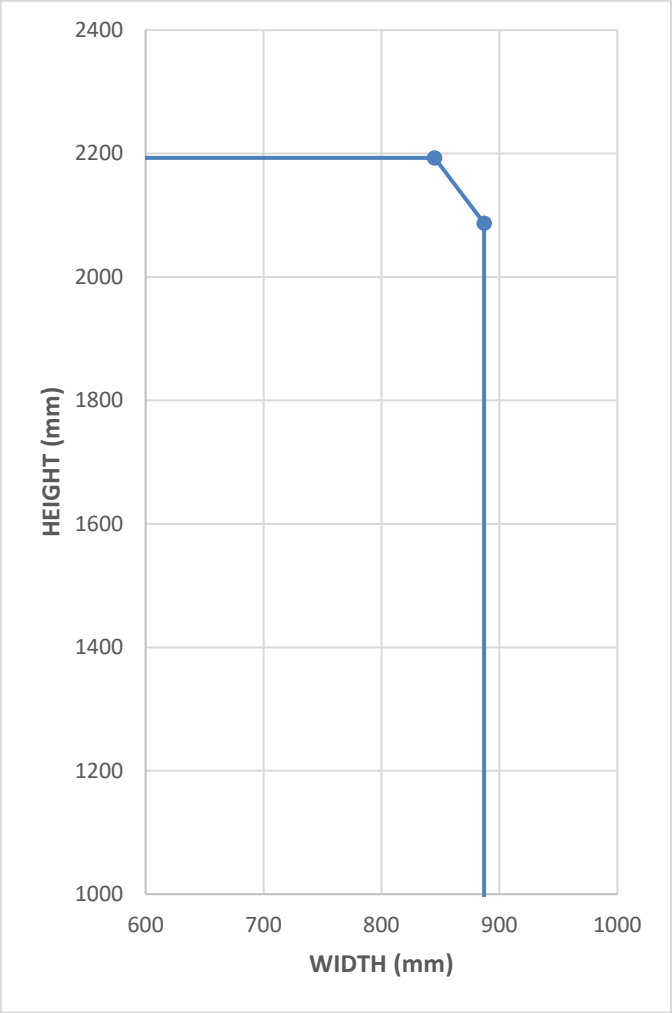
## E.3 Approved Leaf Envelope E.03

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.03 | LATCHED, SINGLE ACTING, DOUBLE DOOR, WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| **FRAME MATERIAL** |
| Hardwood |
| **LIPPING TYPES** |
| L60/1, L60/3 |
| **MEETING STILE JUNCTION** |
| Square |
| **OVERPANEL JUNCTION** |
| N/A |
| **LEAF ENVELOPE** |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to the active leaf and spaced 10mm apart |

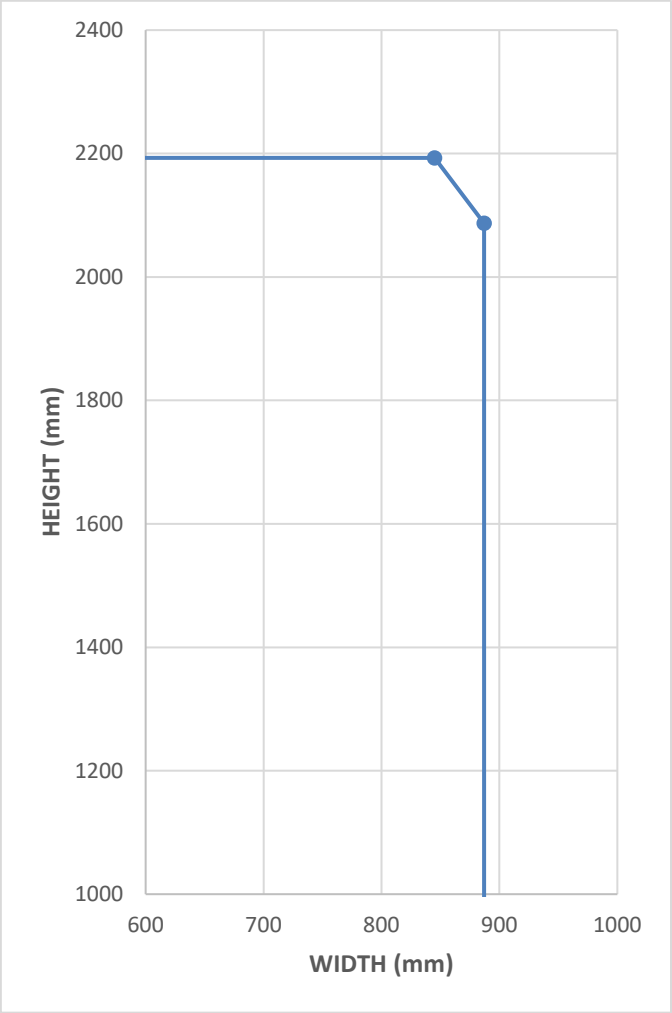
## E.4 Approved Leaf Envelope E.04

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.04 | UNLATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to the active leaf and spaced 10mm apart |

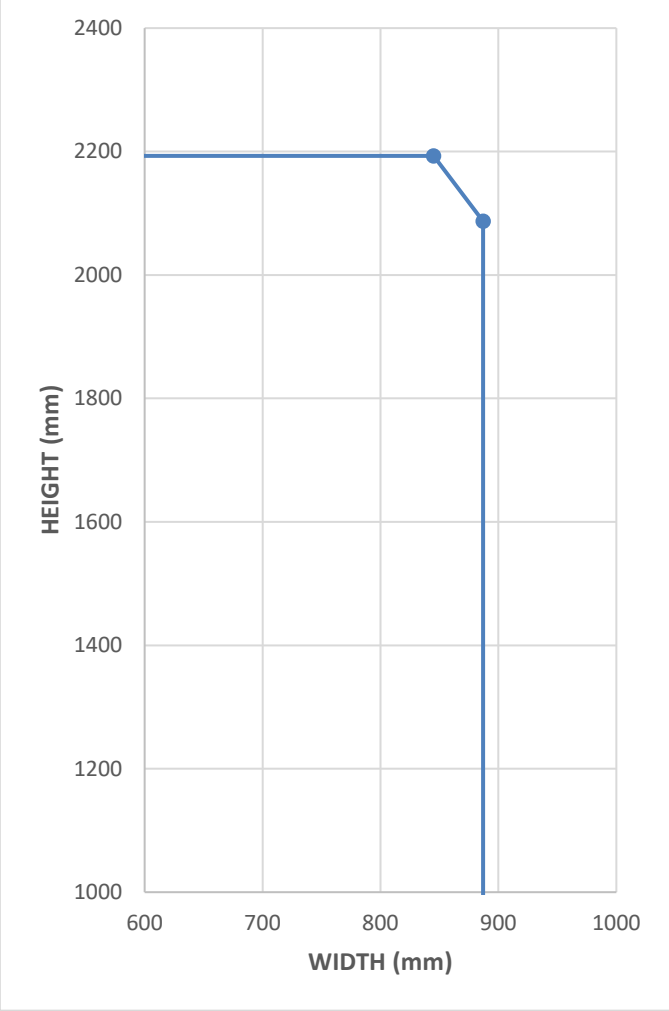
## E.5 Approved Leaf Envelope E.05

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.05 | DOUBLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3, L60/4, L60/7 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |

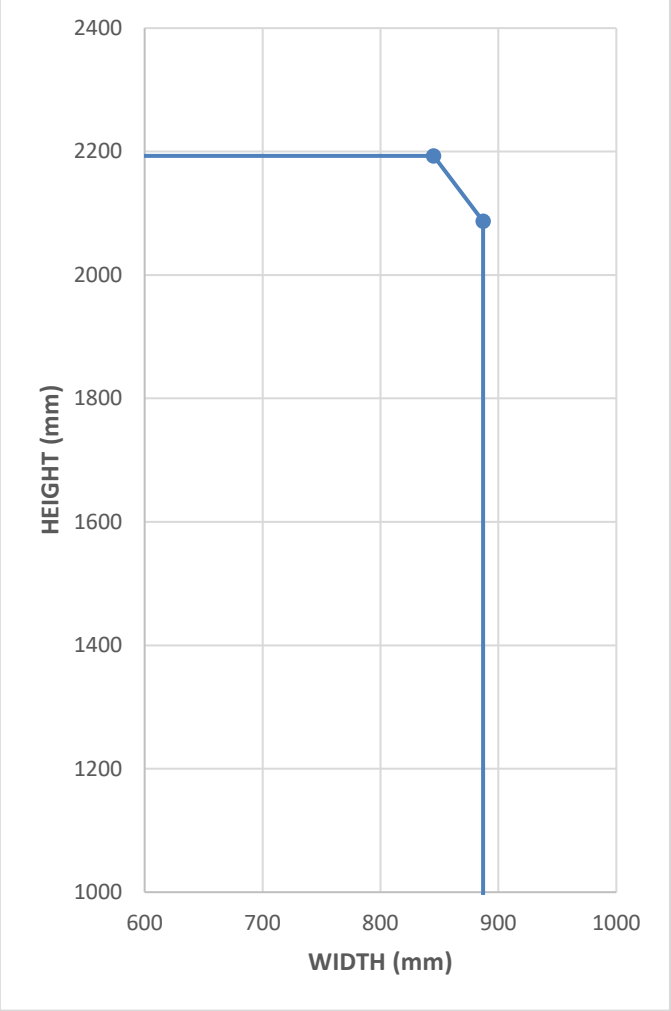
## E.6 Approved Leaf Envelope E.06

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.06 | DOUBLE ACTING, DOUBLE DOOR, WITH SQUARE MEETING STILES |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/2, L60/3, L60/4, L60/7 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |

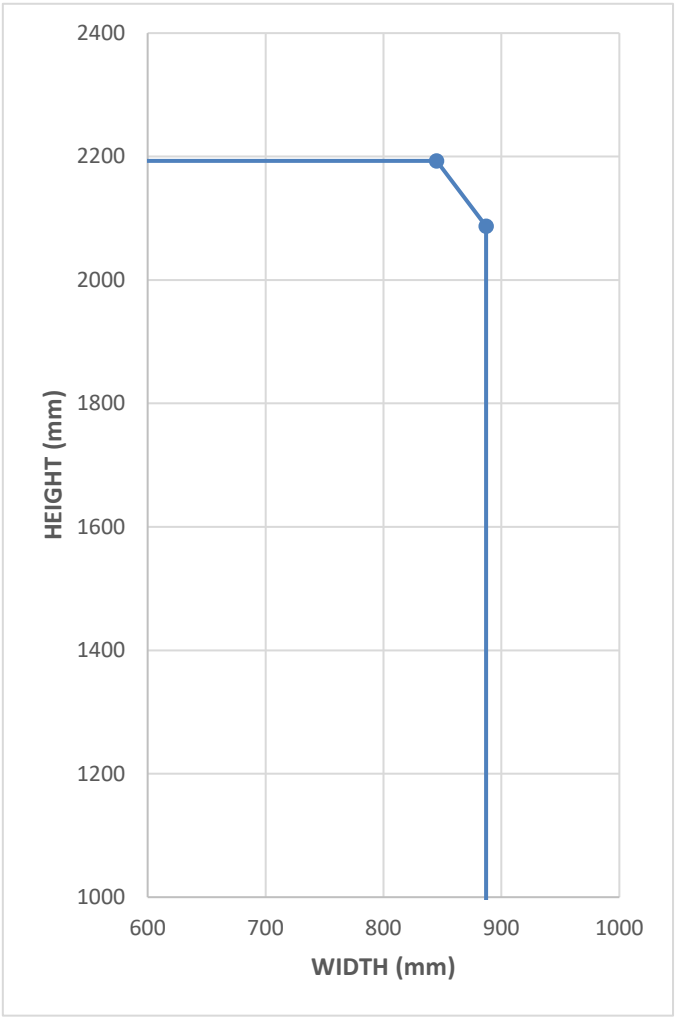



| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to the active leaf and spaced 10mm apart |

## E.7 Approved Leaf Envelope E.07

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.07 | LATCHED, SINGLE ACTING, SINGLE DOOR WITH TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima Bond-up | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/8 | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| Transom | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2087mm | 887mm |
| 2193mm | 845mm |
| FIRE TEST EVIDENCE | |
| RF96062 | |

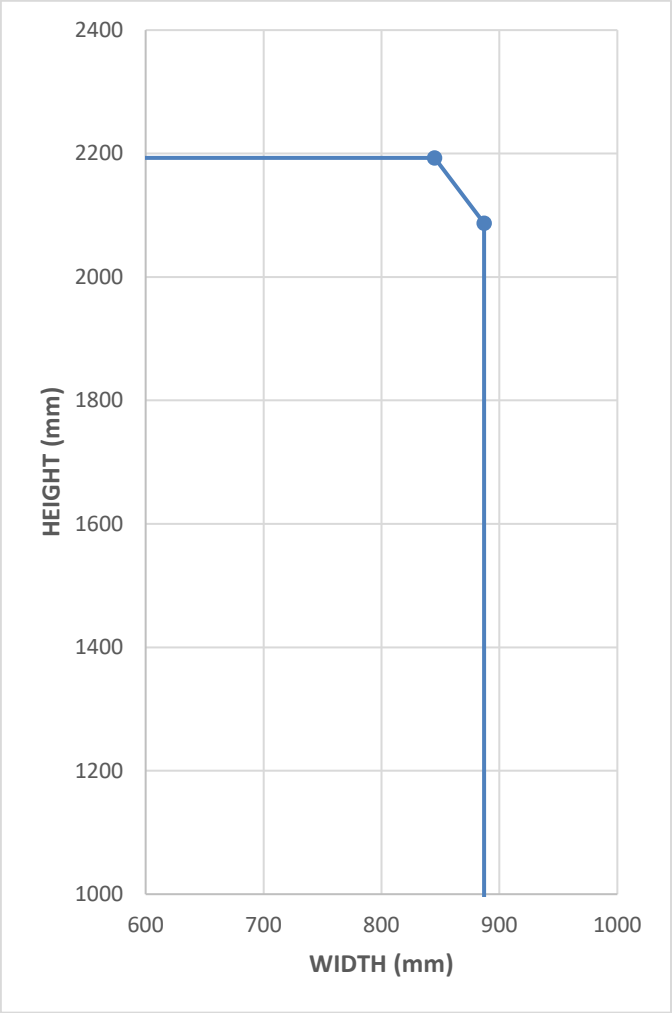



| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME – LEAF | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME – LEAF | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted centrally to the overpanel thickness and spaced 10mm apart |

## E.8 Approved Leaf Envelope E.08

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.08 | UNLATCHED, SINGLE ACTING, SINGLE DOOR WITH TRANSOMED OVERPANEL |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima Bond-up | |
| FRAME MATERIAL | |
| Hardwood | |
| LIPPING TYPES | |
| L60/1, L60/8 | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| Transom | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| 2087mm | 887mm |
| 2193mm | 845mm |
| FIRE TEST EVIDENCE | |
| RF96062 | |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted centrally to the overpanel thickness and spaced 10mm apart |

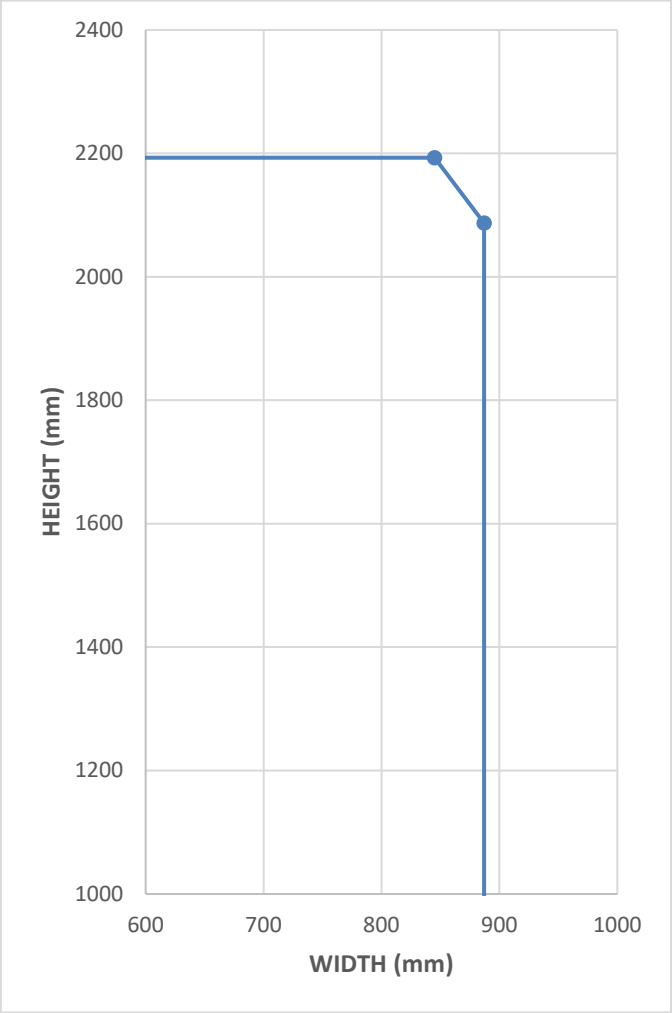
## E.9 Approved Leaf Envelope E.09

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.09 | LATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES AND TRANSOMED OVER PANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Transom |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

| FIRE TEST EVIDENCE |
|---|
| RF96062 |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to the active leaf and spaced 10mm apart |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted centrally to the overpanel thickness and spaced 10mm apart |

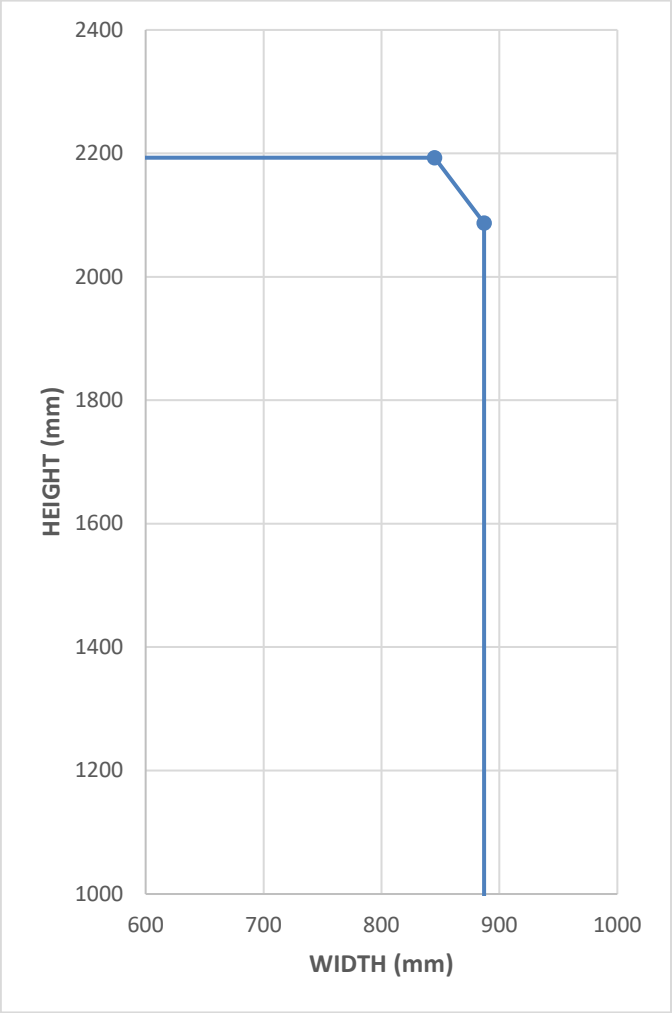
## E.10 Approved Leaf Envelope E.10

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| E.10 | UNLATCHED, SINGLE ACTING, DOUBLE DOOR WITH SQUARE MEETING STILES AND TRANSOMED OVER PANEL |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| Hardwood |
| LIPPING TYPES |
| L60/1, L60/3 |
| MEETING STILE JUNCTION |
| Square |
| OVERPANEL JUNCTION |
| Transom |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2087mm | 887mm |
| 2193mm | 845mm |

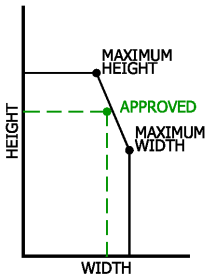
| FIRE TEST EVIDENCE |
|---|
| RF96062 |

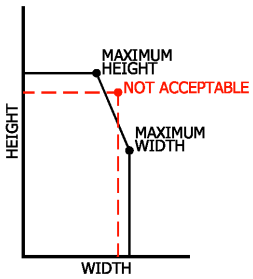


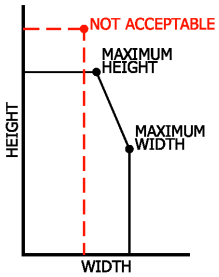

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart |
| BOTTOM EDGE | LEAF | 1no 15 x 4mm thick intumescent seal fitted central to the leaf thickness |
| MEETING STILES | SQUARE | 2no 15 x 4mm thick intumescent seals fitted centrally to the active leaf and spaced 10mm apart |
| OVERPANEL JUNCTION | OVERPANEL PERIMETER – ALL EDGES | 2no 15 x 4mm thick intumescent seals fitted centrally to the overpanel thickness and spaced 10mm apart |

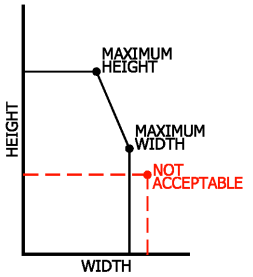
# Appendix F – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick BOND-UP FD60 Doors in MDF Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



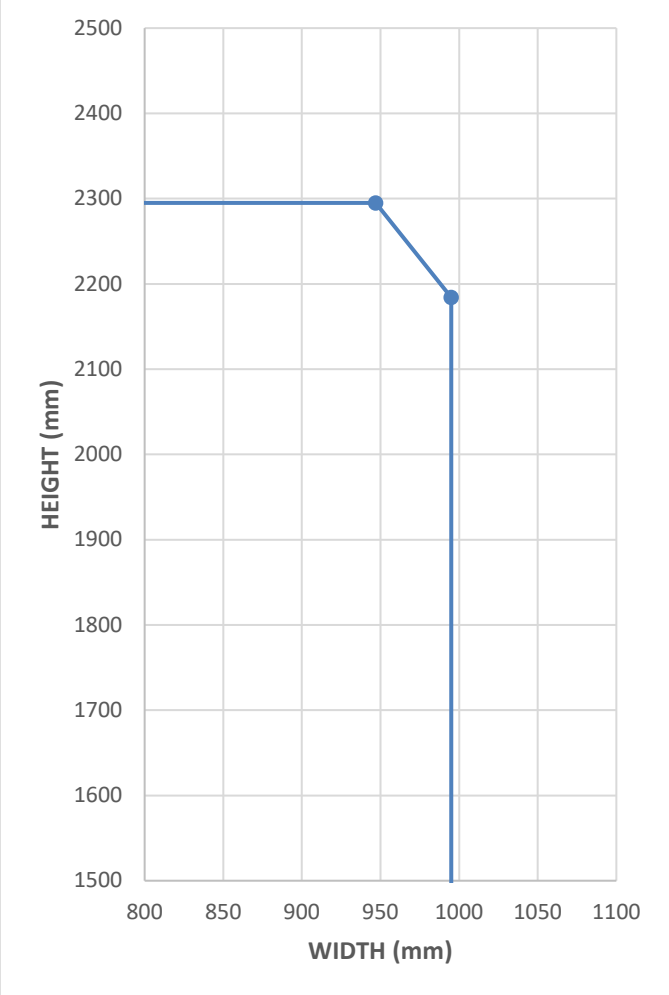
## F.1 Approved Leaf Envelope F.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| F.01 | LATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| **FRAME MATERIAL** |
| MDF |
| **LIPPING TYPES** |
| L60/1, L60/8 |
| **MEETING STILE JUNCTION** |
| N/A |
| **OVERPANEL JUNCTION** |
| N/A |
| **LEAF ENVELOPE** |

| HEIGHT | WIDTH |
|---|---|
| 2184mm | 995mm |
| 2295mm | 947mm |

| FIRE TEST EVIDENCE |
|---|
| BMT/FEP/F15012B |




| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| BOTTOM EDGE | LEAF | None fitted |

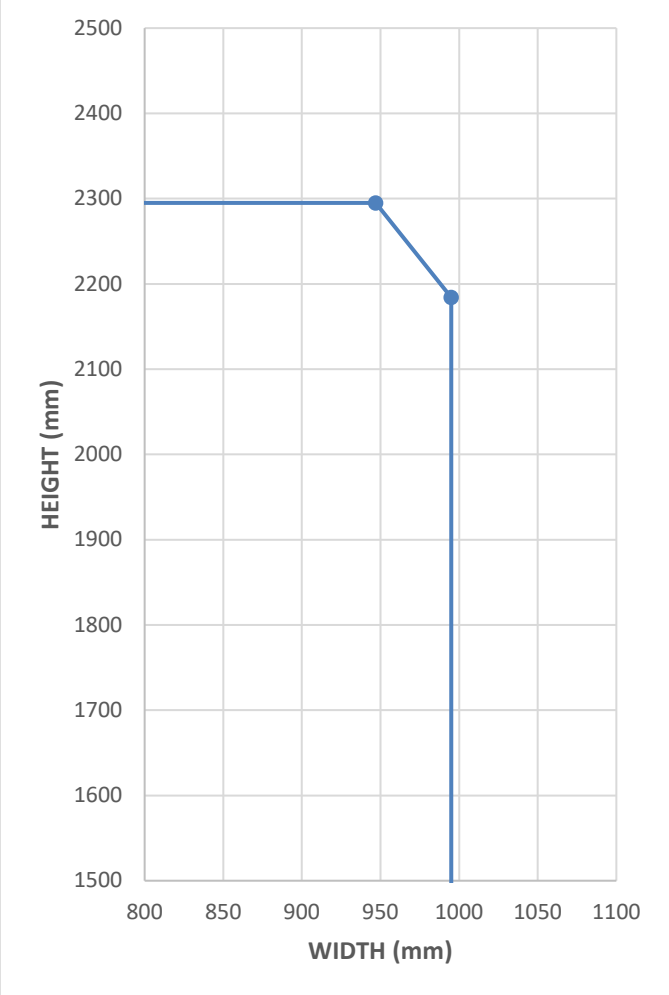
## F.2 Approved Leaf Envelope F.02

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| F.02 | UNLATCHED, SINGLE ACTING, SINGLE DOOR |

| DOOR CONSTRUCTION OPTIONS |
|---|
| 54mm Halspan Optima Bond-up |
| FRAME MATERIAL |
| MDF |
| LIPPING TYPES |
| L60/1, L60/8 |
| MEETING STILE JUNCTION |
| N/A |
| OVERPANEL JUNCTION |
| N/A |
| LEAF ENVELOPE |

| HEIGHT | WIDTH |
|---|---|
| 2184mm | 995mm |
| 2295mm | 947mm |

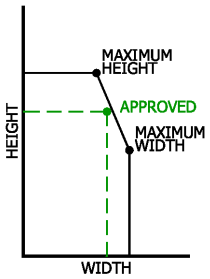
| FIRE TEST EVIDENCE |
|---|
| BMT/FEP/F15012B |

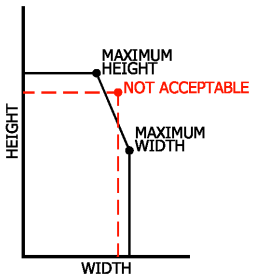


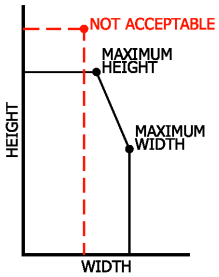

| INTUMESCENT SPECIFICATION | | |
|---|---|---|
| HEAD | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| VERTICAL EDGES | FRAME | 2no 15 x 4mm thick intumescent seals fitted centrally to the leaf thickness and spaced 10mm apart. |
| BOTTOM EDGE | LEAF | None fitted |

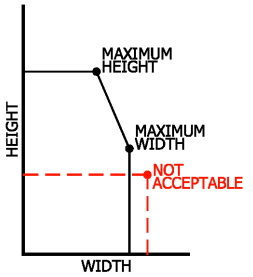
# Appendix G – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick BOND-UP FD60 Doors in HOLLOW STEEL Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



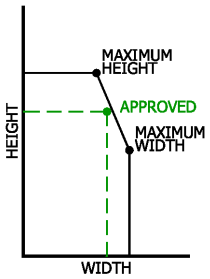



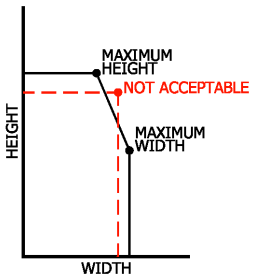
## G.1 Approved Leaf Envelope G.01

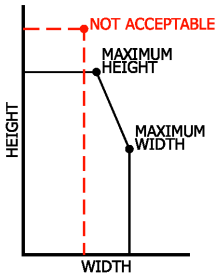
<table>
<tr><td>FIGURE:<br>G.01</td><td colspan="2">LEAF CONFIGURATION:<br>ALL</td></tr>
<tr><td colspan="2">DOOR CONSTRUCTION OPTIONS</td><td rowspan="14">The use of the 54mm thick Halspan Optima Bond-Up Door Design is not approved for use with hollow steel frames</td></tr>
<tr><td colspan="2">54mm Halspan Optima Bond-up</td></tr>
<tr><td colspan="2">FRAME MATERIAL</td></tr>
<tr><td colspan="2">Backfilled Steel</td></tr>
<tr><td colspan="2">LIPPING TYPES</td></tr>
<tr><td colspan="2">N/A</td></tr>
<tr><td colspan="2">MEETING STILE JUNCTION</td></tr>
<tr><td colspan="2">N/A</td></tr>
<tr><td colspan="2">OVERPANEL JUNCTION</td></tr>
<tr><td colspan="2">N/A</td></tr>
<tr><td colspan="2">LEAF ENVELOPE</td></tr>
<tr><td>HEIGHT</td><td>WIDTH</td></tr>
<tr><td>N/A</td><td>N/A</td></tr>
<tr><td>N/A</td><td>N/A</td></tr>
<tr><td colspan="2">FIRE TEST EVIDENCE</td></tr>
<tr><td colspan="2">N/A</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="3">INTUMESCENT SPECIFICATION</td></tr>
<tr><td colspan="3">N/A</td></tr>
</table>

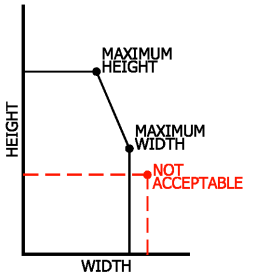
# Appendix H – Approved Leaf Envelopes and Intumescent Seal Specifications for 54mm Thick BOND-UP FD60 Doors in BACKFILLED STEEL Frames

| CONFIGURATION DESCRIPTION | CONFIGURATION CODE |
|---|---|
| Latched, Single Acting, Single Leaf / Optional transomed overpanel only | LSASD |
| Unlatched, Single Acting, Single Leaf / Optional transomed overpanel only | ULSASD |
| Double Acting, Single Leaf / Optional transomed overpanel only | DASD |
| Latched, Single Acting, Single Leaf with Flush Overpanel | LSASD+OP |
| Unlatched, Single Acting, Single Leaf with Flush Overpanel | ULSASD+OP |
| Double Acting, Single Leaf with Flush Overpanel | DASD+OP |
| Latched, Single Acting, Double Leaf / Optional transomed overpanel only | LSADD |
| Unlatched, Single Acting, Double Leaf / Optional transomed overpanel only | ULSADD |
| Double Acting, Double Leaf / Optional transomed overpanel only | DADD |
| Latched, Single Acting, Double Leaf with Flush Overpanel | LSADD+OP |
| Unlatched, Single Acting, Double Leaf with Flush Overpanel | ULSADD+OP |
| Double Acting, Double Leaf with Flush Overpanel | DADD+OP |



## H.1 Approved Leaf Envelope H.01

| FIGURE: | LEAF CONFIGURATION: |
|---|---|
| H.01 | ALL |

| DOOR CONSTRUCTION OPTIONS | |
|---|---|
| 54mm Halspan Optima Bond-up | |
| FRAME MATERIAL | |
| Backfilled Steel | |
| LIPPING TYPES | |
| N/A | |
| MEETING STILE JUNCTION | |
| N/A | |
| OVERPANEL JUNCTION | |
| N/A | |
| LEAF ENVELOPE | |
| HEIGHT | WIDTH |
| N/A | N/A |
| N/A | N/A |
| FIRE TEST EVIDENCE | |
| N/A | |

The use of the 54mm thick Halspan Optima Bond-Up Door Design is **not approved** for use with backfilled steel frames

| INTUMESCENT SPECIFICATION |
|---|
| N/A |

# Appendix I – Approved Hardware Items

| GENERAL REQUIREMENTS | |
|---|---|
| GENERAL INSTALLATION | • All hardware items must be installed in accordance with the manufacturer's instructions, except where specific installation requirements or limitations have been detailed herein by KFS<br>• Mortices and holes must be cut/drilled tightly, such that there are the minimum possible to allow full function of the hardware when they are installed |
| APPROVED SCOPE | Each section within this Appendix includes a table detailing the leaf configurations, maximum leaf size, door construction options, frame options and perimeter intumescent seal specifications which are approved with each item of hardware.<br><br>Where these requirements differ across multiple hardware items and/or other items or details approved within this report, then the lowest common denominators must be selected for the proposed configuration (i.e. the smallest leaf size, the greatest intumescent specification etc) |
| DOOR CLOSING DEVICES | Except in those situations where Approved Document B Note or the project fire strategy permits the omission of self-closing devices, every hinged fire door (both leaves in double doors), including flat entrance doors and doors between a dwelling and an integral garage, must be fitted with a self-closing device.<br><br>However, it is a requirement of this Field of Application Report, that when not in use, any Fire door ***not*** fitted with a self-closing device, must be closed fully into the frame reveal and retained shut by an engaged latch or lock.<br><br>Door closing devices must also meeting all of the following requirements:<br><br>• Meet the requirements of BS EN 1154:1997<br>• Be adjusted so that they are capable of fully closing the door leaf, against any friction imposed by the latch, perimeter seals and/or an other items of hardware, from any position of opening.<br>• Where the door closing device is motor driven, it must be capable of fulfilling the above requirements in the event of electrical power loss.<br><br>Note *Approved Document B permits Fire doors to cupboards and Fire doors within flats or dwellings to be installed without self-closing devices* |
| HARDWARE MARGINS | Unless specified otherwise herein, there must be:<br>• A minimum 100mm margin between each hardware item<br>• A minimum 50mm margin between each item of hardware and any glazed apertures, feature grooves, recessed panels/areas and/or concealed cableways<br>• The above dimensions must be measured edge-to-edge not centre-to-centre |
| HARDWARE QUANTITY | Unless specifically noted otherwise herein, it is only permitted to fit 1no. of each approved hardware item per door leaf |
| INTUMESCENT PROTECTION | • The type/size/quantity of intumescent protection detailed, herein, may differ from that contained within the standard intumescent protection kit/s supplied by the hardware manufacturer/s. If this is the case, the intumescent protection specified by KFS, herein, takes precedence and must be used<br>• If no intumescent protection requirement is stipulated by KFS herein, then standard intumescent protection kits supplied by the hardware manufacturer may still be fitted |

## I.1 Single Axis Hinges

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| HINGE TYPES | Fixed pin, washered butt, ball bearing butt, lift-off type or journal supported | | | | | |
| HINGE DIMENSIONS | Height | 89-115mm | Width | 30-36mm | Thickness | 2.5-3.5mm |
| MATERIAL | Phosphor Bronze, Steel or Stainless Steel | | | | | |
| FIXINGS | Minimum 4no. 30mm long x 4mm diameter steel screws | | | | | |
| MINIMUM NUMBER | Leaves up to 2399mm high leaves | 3no. hinges | | | | |
| | Leaves over 2400mm high | 4no. hinges | | | | |
| | Two hinges may be used where the maximum spacing between the hinges does not exceed 800mm | | | | | |
| POSITIONS | Top | 120 - 180mm down from the leaf head to the top of the hinge | | | | |
| | Middle (Option 1) | Equi-spaced between the top and bottom hinges | | | | |
| | Middle (Option 2) | 2nd hinge positioned 200 – 250mm below the top hinge, with remaining intermediate hinges equi-spaced | | | | |
| | Bottom | 150 - 225mm up from the bottom of the leaf to the bottom of the hinge blade | | | | |
| INTUMESCENT PROTECTION | • Hinge blades must be bedded on 1mm thick MAP, Therm-A-Strip or graphite intumescent sheet<br>• When using steel door frames, the above intumescent material is required under the hinge blade in the door leaf only | | | | | |
| ADDITIONAL REQUIREMENTS/NOTES | • Rising butts, cranked butts and spring hinges (single or double action) are not approved under the scope of this Assessment<br>• Single axis hinges must have been successfully type tested for conformity to all the requirements of BS EN 1935: 2002 including the additional requirements for fire/smoke door use<br>• Single axis hinges must have a Door Mass Grade, as defined in BS EN 1935: 2002, which demonstrates the hinge is capable of supporting a door leaf weight, equal to, or greater than, that proposed. | | | | | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

### I.1.1 Single Axis Hinges – Projection Butt hinges

| GENERAL REQUIREMENTS | | | | | | |
|---|---|---|---|---|---|---|
| HINGE BLADE DIMENSIONS | Height | 102mm | Width | 42mm | Thickness | 2.5 - 3.5mm |

- Hinge blade mortices must remain at 30-36mm deep
- Screw fixing holes in the hinge blades must be positioned in the same locations as those used in the single axis butt hinges described in Section I.1 (relative to the edge of each hinge blade)
- This approval only applies to projection butt hinges. Parliament hinges are not permitted under the scope of this Field of Application Report
- Aside from the above, projection butt hinges must meet all the requirements detailed in Section I.1

### I.1.2 Single Axis Hinges – Security Butt Hinges

| GENERAL REQUIREMENTS |
|---|

- Permitted to incorporate a single pin/bolt on either, one, or both blades, with a corresponding hole/s on the opposing blade
- Aside from the above, security butt hinges must meet all the requirements detailed in Section I.1

### I.1.3 Single Axis Hinges – Conductor Butt Hinges

Conductor butt hinges are ***not*** permitted under the scope of this Field of Application Report

## I.2 Concealed Hinges

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MINIMUM NUMBER | As detailed in the following sections for specific hinge types | |
| POSITIONS | Top | 120 - 180mm down from the leaf head to the top of the hinge |
| | Middle (Option 1) | Equi-spaced between the top and bottom hinges |
| | Middle (Option 2) | 2nd hinge positioned 200 – 250mm below the top hinge, with remaining intermediate hinges equi-spaced |
| | Bottom | 120 - 225mm up from the bottom of the leaf to the bottom of the hinge blade |
| INTUMESCENT PROTECTION | Refer to Section I.2.1 | |
| ADDITIONAL REQUIREMENTS/NOTES | The door frame hanging jamb must be a minimum 44mm thick | |

| DOOR CONFIGURATIONS | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|
| See Hinge Specification Table below | | 54mm Optima | ✓ |
| | | 54mm Optima Bond-Up | ✓ |
| **PERIMETER INTUMESCENT SEAL SPECIFICATION** | | **FRAME OPTIONS** | |
| Refer to relevant Figure in Appendix A or E, as applicable for the proposed door configuration | | Timber Frame | ✓ |
| | | MDF Frame | × |
| | | Infilled Steel Frame | × |
| | | Hollow Steel Frame | × |

### I.2.1 Soss 418 Stainless Steel Concealed Hinge

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| HINGE BODY (FRAME) | 117mm high x 29mm wide x 42mm deep |
| HINGE BODY (DOOR) | 117mm high x 29mm wide x 42mm deep |
| MATERIAL | Stainless Steel |
| FIXINGS | Steel screws - 60mm long x 5mm diameter |
| INTUMESCENT PROTECTION | Hinge bodies (leaf and frames) must be encased in 2mm thick MAP intumescent sheet |
| ADDITIONAL REQUIREMENTS/NOTES | For use with latched single acting single doors only.<br>3no hinges required<br>Maximum leaf dimensions permitted 2040mm high x 923mm wide<br>18mm high hardwood stop required<br>Minimum frame thickness, 44mm thick |
| TEST REPORT | RF04074 |

### I.2.2 Halspan CEAM 1131 Concealed Hinges

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| BLADE SIZE | 160mm high x 32mm wide x 4mm deep |
| BODY SIZE | 129mm high x 32mm wide x 25mm deep |
| MATERIAL | Stainless Steel |
| FIXINGS TO LEAF | Stainless Steel screws - 50mm long x 4.8mm diameter |
| FIXINGS TO FRAME | Steel screws - 31mm long x 4.8mm diameter |
| INTUMESCENT PROTECTION | Hinge bodies (leaf and frames) must be encased in 1mm thick graphite based intumescent sheet |
| ADDITIONAL REQUIREMENTS/NOTES | For use with latched single acting single, or latched, double door leaves<br>4no. hinges per leaf<br>Maximum leaf dimension permitted 2136mm high x 915mm wide<br>Minimum 15mm high hardwood stop required<br>Minimum frame thickness, 44mm thick |
| TEST REPORT | CFR1909241 |

## I.3 Finger Safe Protection Hinges

This hardware item is ***not*** permitted under the scope of this Field of Application Report

## I.4 Floor Spring and Accessories

| GENERAL REQUIREMENTS/NOTES |
|---|
| • If the floor spring is to be used as the door closing device, it must be adjusted so that it is capable of fully closing the door leaf against any friction imposed by the latch (and smoke seals, if fitted), from any position of opening<br>• No removal of timber or intumescent strip (where fitted) is permitted at the hanging leaf edge, except for a 6-8mm diameter access hole for the top strap adjustment screw<br>• Frame heads must be a minimum of 44mm thick<br>• Transomed or flush overpanels are not permitted with floor springs |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | × | LSADD | × | Refer to relevant Figure in Appendix A or E, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | × | ULSADD | × | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A or E, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | × |
| | Hollow Steel Frame | × |

### I.4.1 Floor Spring/Accessories Set 1 – Dorma BTS 75

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| FLOOR SPRING MODEL/S | Dorma BTS 75V ad BTS75R | |
| DIMENSIONS | 285mm long x 82mm wide x 50mm deep | |
| POSITION | Recessed into the floor on the centre line of the leaf thickness | |
| MATERIAL | Aluminium (body) and Steel (cover plate, spindle and spring) | |
| | | |
| TOP CENTRE MODEL/S | Dorma 8066 | |
| DIMENSIONS | 165mm long x 25mm wide x 42mm deep | |
| POSITION | Fitted on the centre line of the leaf thickness in the frame head | |
| MATERIAL | Steel | |
| | | |
| TOP STRAP MODEL/S | Dorma 8066 | |
| DIMENSIONS | 122mm long x 29mm wide x 15mm deep | |
| POSITION | Fitted on the centre line of the leaf thickness in the top leaf edge | |
| MATERIAL | Steel | |
| | | |
| BOTTOM STRAP MODEL/S | Dorma 7421 | |
| DIMENSIONS | 235mm long x 24mm wide x 20mm deep | |
| POSITION | Fitted on the centre line of the leaf thickness in the bottom leaf edge | |
| MATERIAL | Steel | |
| INTUMESCENT PROTECTION | Top Centre | Mortice to be lined with, and face plate to be bedded on 2mm thick graphite intumescent sheet |
| | Top Strap | • Mortice to be lined with, and face plate to be bedded on, 1mm thick graphite intumescent sheet<br>• 1mm thick graphite intumescent sheet covering the top plate |
| | Bottom Strap | Mortice lined with 1mm thick graphite intumescent sheet |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

## I.5 Mechanical Single-Point Mortice Locks/Latches

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM FOREND DIMENSIONS | 235mm high x 25mm wide x 3mm thick | |
| MAXIMUM STRIKE PLATE DIMENSIONS | 175mm high x 22mm wide (excluding tongue) | |
| MAXIMUM BODY DIMENSIONS | 168.5mm high x 108mm wide x 20mm thick | |
| MATERIAL | Steel based with no essential part of the lock/latch to comprise polymeric or other low melting point (<800°C) materials and must not contain any flammable materials | |
| POSITION | • Centred at 1000mm (± 200mm) above the bottom of the door leaf in the closing leaf edge<br>• Fitted on the centreline of the leaf thickness | |
| INTUMESCENT PROTECTION | Single and Double Leaf Door Assemblies | |
| | Forend Plate | Bedded on 1mm thick MAP intumescent sheet or Halspan Graphite |
| | Strike Plate/Keep | Bedded on 1mm thick MAP intumescent sheet or Halspan Graphite |
| | Lock Body | Wrapped in 1mm thick MAP intumescent sheet or Halspan Graphite |
| ADDITIONAL REQUIREMENTS/NOTES | • Morticed locks/latches must have been successfully type tested for conformity to all the requirements of BS EN 12209: 2016 including the additional requirements for fire/smoke door use<br>• Latch nibs are not permitted to be replaced with roller balls unless all elements of the proposed door assembly are approved herein for use in unlatched configurations<br>• PVC 'dust boxes' may be used in conjunction with strike plates | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | ✓ | DADD+OP | ✓ | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

### I.5.1 Secondary Mortice Locks/Latches

The use of a second mortice lock, to the specifications, other than the lock dimensions and location, detailed in Section 5, is permitted herein; subject to the following limitations:

- Approved for use in timber frames only
- Approved for use in single acting, single door assemblies only
- The centre of any lock body must be a minimum of 320mm from the top of the leaf, or a minimum of 600mm from the bottom of the leaf.
- There shall be a minimum of 300mm between hardware item

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM FOREND DIMENSIONS | 235mm high x 24mm wide x 3mm thick | |
| MAXIMUM STRIKE PLATE DIMENSIONS | 155 high x 22mm wide (excluding tongue) | |
| MAXIMUM BODY DIMENSIONS | 155mm high x 75mm wide x 16mm thick | |
| MATERIAL | Steel based with no essential part of the lock/latch to comprise polymeric or other low melting point (<800°C) materials and must not contain any flammable materials | |
| POSITION | • Centred at 1200mm (± 200mm) above the bottom of the door leaf in the closing leaf edge<br>• Fitted on the centreline of the leaf thickness | |
| INTUMESCENT PROTECTION | Single Leaf Door Assemblies | |
| | Forend Plate | Bedded on 1mm thick MAP intumescent sheet or Halspan Graphite |
| | Strike Plate/Keep | Bedded on 1mm thick MAP intumescent sheet or Halspan Graphite |
| | Lock Body | Wrapped in 1mm thick MAP intumescent sheet or Halspan Graphite |
| ADDITIONAL REQUIREMENTS/NOTES | • Morticed locks/latches must have been successfully type tested for conformity to all the requirements of BS EN 12209: 2016 including the additional requirements for fire/smoke door use<br>• Latch nibs are not permitted to be replaced with roller balls unless all elements of the proposed door assembly are approved herein for use in unlatched configurations<br>• PVC 'dust boxes' may be used in conjunction with strike plates | |

## I.6 Morticed Roller Latches

Morticed roller latches are ***not*** permitted under the scope of this Field of Application Report when considered as point of restraint for a latched door. Door assemblies that have a specification completely approved for an unlatched configuration may utilise a roller latch as per the specification in Section C.5.

## I.7 Multipoint Locks

Multipoint locks are ***not*** permitted under the scope of this Field of Application Report

## I.8 Electronic Locks/Latches and Handlesets – Battery Operated

Battery operated electronic locks/latches and handlesets are ***not*** permitted under the scope of this Field of Application Report

## I.9 Electronic Locks/Latches – Hardwired

Hardwired electronic locks/latches are ***not*** permitted under the scope of this Field of Application Report

## I.10 Surface Mounted Mag Locks

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM MAG LOCK OVERALL DIMENSIONS | 266mm wide x 73mm high x 40mm thick | |
| MAXIMUM ARMATURE PLATE | 183mm wide x 60mm high x 15mm thick | |
| MAXIMUM L/Z BRACKET | 2no. 60mm x 70mm x 266mm long | |
| POSITION | L Bracket | Fitted to the edge of the frame head |
| | Mag Lock | Fitted to the underside of the L bracket's horizontal leg |
| | Armature Plate | Fitted to the vertical leg of the Z bracket |
| | Z Bracket | Fixed to the face of the door leaf to suit the mag lock position |
| FIXINGS | L Bracket | 4no. steel screws |
| | Z Bracket | 4no. steel screws plus 1no. M8 steel bolt through the leaf thickness |
| MATERIAL | Steel | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | • Minimum 19mm high hardwood stops<br>• Must be installed on the fire risk face and opening leaf face only<br>• Drill holes for the bolt through fixings must be as tight as possible to the bolt<br>• Door stops may be fully interrupted for the full length of the magnet in the frame head<br>• With the exception of drill holes for the bolt through fixings, and the removal of the door stop as detailed in the point above, no material must be removed from the door leaf or door frame when installing surface mounted mag locks<br>• A cableway may be drilled through the frame thickness to allow the passage of cables to the magnet, The cableway must not pass from one face of the compartment to the other. | |
| FIRE RESISTANCE TEST DATA | • WF404075 | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | × | Refer to relevant Figure in Appendix A, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | × | | 54mm Optima Bond-Up | × |
| DASD | × | DADD | × | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A, for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | × |
| | Hollow Steel Frame | × |

## I.11 Electric Strikes

Electric strikes are ***not*** permitted under the scope of this Field of Application Report

## I.12 Concealed Cableways

### I.12.1 Concealed Cableway in Door Leaf

Concealed cableways in the door leaf are ***not*** permitted under the scope of this Field of Application Report

## I.12.2 Concealed Cableway in Door Frame

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| DESCRIPTION | A cableway may be drilled through the frame thickness to allow the passage of cables to hardware items such as door operators, morticed mag locks, electric locks etc. |
| CABLEWAY DIMENSIONS | The cableway diameter must be as small as possible to suit the cable/s |
| POSITION | • Drilled through the frame thickness at the rear of the mortice for the relevant hardware item<br>• The cableway must be located on the centreline of the leaf thickness |
| INTUMESCENT PROTECTION | None required |
| ADDITIONAL REQUIREMENTS/NOTES | • Must not be drilled across the depth/width of the frame<br>• The cable must be routed in the gap between the rear of the frame and the surrounding construction. Other than the cableway, material must not be removed from the frame to house the cable/s |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A and E, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A and E, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | × |
| | Hollow Steel Frame | × |

# I.13 Concealed Cable Loop

Concealed cable loops are ***not*** permitted under the scope of this Field of Application Report

# I.14 Magnetic Door Contacts

Magnetic door contacts are ***not*** permitted under the scope of this Field of Application Report

# I.15 Door Closing Devices

## I.15.1 Surface Mounted Door Closers

| GENERAL REQUIREMENTS/NOTES |
|---|
| • Surface mounted door closers must have been successfully fire tested for 60 minutes in accordance with BS476: Part22: 1987 or BS EN 1634-1:2014, when fitted to timber door leaves hung within timber frames or steel frames, as applicable. Surface mounted closers which have been assessed by KFS for use with FD60 timber door leaves hung without timber frames or steel frames, as applicable, may also be used.<br>• Surface mounted closer must not be installed directly above a glazed aperture containing non-insulating glass, unless they have been successfully fire tested when: (a) fitted on the unexposed face of an uninsulated steel door (b) fitted above an aperture which contained non-insulating glass in a fully glazed door. If no fire test evidence is available to demonstrate this, the surface mounted closer must be offset by a minimum of 100mm from the side of the glazed aperture |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.15.2 Concealed Overhead Door Closers

| GENERAL REQUIREMENTS/NOTES | |
|---|---|
| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
| POSITION | • The closer body is located in the leaf head and the closer slide arm channel is located in the frame head<br>• Must be located on the centreline of the leaf thickness |
| ADDITIONAL REQUIREMENTS/NOTES | • Where concealed overhead door closers are installed in the 'top rail' between a glazed aperture and a door edge, the 'top rail' must be at least 200mm high<br>• Concealed overhead door closers are not permitted to be fitted in conjunction with other morticed hardware items in the leaf head e.g. morticed mag-locks<br>• Concealed closers are not permitted with flush or transomed overpanels |

### *I.15.2.1 Dorma ITS96 Concealed Door Closer - 2-4 Model*

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| SLIDE ARM MODELS | Dorma G96 N | 440mm long x 31mm wide x 20mm deep |
| | Dorma G96 N20 | 440mm long x 20mm wide x 12mm deep |
| CLOSER BODY TOP PLATE | 338mm long x 32mm wide x 3mm thick | |
| CLOSER BODY | 277mm long x 32mm wide x 42mm deep | |
| INTUMESCENT PROTECTION | Slide Arm Channel Mortice | All faces lined with 2mm thick MAP intumescent sheet |
| | Closer Body Mortice | All faces lined with 2mm thick MAP intumescent sheet |
| | Top of Closer Body | None required |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | × |
| DASD | × | DADD | × | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| 2no. 15x4mm perimeter intumescent seals, fitted centrally in the frame reveal, spaced 10mm apart **OR** that detailed in the relevant leaf envelope in Appendix A, whichever is greater | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | × |
| | Hollow Steel Frame | × |

## I.15.3 Transom Door Closers

Transom door closers are ***not*** permitted under the scope of this Field of Application Report

## I.15.4 Jamb Mounted Door Closers

Jamb mounted door closers are ***not*** permitted under the scope of this Field of Application Report

## I.16 Door Operators

### I.16.1 Geze Powerturn Door Operator

This hardware item is ***not*** permitted under the scope of this Field of Application Report

## I.17 Flush Bolts

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM SIZE | Top Flush Bolt | 250mm long x 20mm wide x 19mm deep |
| | Bottom Flush Bolt | 250mm long x 20mm wide x 19mm deep |
| MATERIAL | Steel based with no essential part of the flush bolt to comprise polymeric or other low melting point (<800°C) materials and must not contain any flammable materials | |
| POSITION | • Positioned at the top and bottom of the vertical meeting edge in the passive leaf only<br>• Must be located on the centre line of the leaf thickness | |
| INTUMESCENT PROTECTION | All faces lined of flush bolt mortice must be lined with 2mm thick MAP intumescent sheet | |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | × | LSADD | ✓ | Refer to relevant Figure in Appendix A, B, E or G, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | × | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A, B, E or G, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | × |

## I.18 Surface Mounted Barrel Bolts

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MAXIMUM DIMENSIONS | 400mm long x 50mm wide |
| MATERIAL | Steel or aluminium |
| POSITION | Fixed to the top and bottom of the door leaf face |
| INTUMESCENT PROTECTION | None required |
| ADDITIONAL REQUIREMENTS/NOTES | • Must be located a minimum of 50mm away from the vertical leaf edge<br>• Barrel bolts must be fixed using 25mm long steel screws which are threaded over the whole length of the screw<br>• The use of surface mounted bolts without a mortice lock sits in the configuration of an unlatched door |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.19 Letter Plates

| ELEMENT | SPECIFICATION |
|---|---|
| MODEL | Halspan TS008 |
| MATERIAL | Aluminium and steel |
| INSTALLATION | Bolt through |
| ADDITIONAL PROTECTION | Halspan letter plate kit, 42mm wide x 6mm thick graphite fitted to the groove in the top and bottom of the letter plate.<br>25mm wide x 3mm thick graphite seal fitted internally in the letter plate body<br>1mm graphite wrapped around each bolt through fixing |
| LOCATION | Centred at 1000mm (± 200mm)<br>Minimum 150mm from leaf edges and other apertures through the leaf |
| FIRE RESISTANCE TEST DATA | WF531368 |

# I.20 Push/Kick Plates

## I.20.1 Push/Kick Plates – Screw Fixed

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM DIMENSIONS | Thickness | 2mm |
| | Area | • Maximum 1m$^2$ per leaf face but must comply with size restrictions detailed below<br>• Vertical and horizontal plates may be combined, provided maximum area stated above is not exceeded |
| | Vertical Plates | Maximum 200mm wide x full height of door leaf |
| | Horizontal Plates | Maximum 500mm high x full width of door leaf |
| FIXING | Mechanically fixed with maximum 25mm long screws on minimum 200mm centres | |
| MATERIAL | Steel or aluminium | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | • Plates must be cut short of door stops and glazing beads but may be located under handle rose/escutcheons<br>• Push/kick plates must be surface fixed only. These items must not be recessed | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.20.2 Push/Kick Plates – Glued

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MAXIMUM DIMENSIONS | Thickness | 2mm |
| | Area | No limitation |
| | Vertical Plates | No limitation |
| | Horizontal Plates | No limitation |
| FIXING | Adhered to the leaf using a thermally softening adhesive e.g. contact adhesive | |
| MATERIAL | Steel or aluminium | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | • Plates must be cut short of door stops and glazing beads but may be located under handle rose/escutcheons<br>• Push/kick plates must be surface fixed only. These items must not be recessed | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.20.3 Push Plates with Return Edges

This hardware item is ***not*** permitted under the scope of this Field of Application Report

## I.20.4 Kick Plates with Return Edges

This hardware item is ***not*** permitted under the scope of this Field of Application Report

## I.21 Surface Mounted Pull Handles

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MAXIMUM DIMENSIONS | Fixing points must be no greater than 1200mm apart |
| MATERIAL | Brass, Steel or aluminium |
| INTUMESCENT PROTECTION | Bolt through fixings must be wrapped in 1mm thick graphite based intumescent sheet |
| ADDITIONAL REQUIREMENTS/NOTES | • Pull handles that are fixed through the leaf shall use clearance holes as close fitting as possible to the bolt<br>• A margin of 50mm must be retained between the bolt positions and leaf edges, glazed apertures, feature grooves, recessed panels and all other hardware items<br>• Brass handles must have a melting point higher than 800°C |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.22 Flush/Recessed Pull Handles

Flush/recessed pull handles are ***not*** permitted under the scope of this Field of Application Report

## I.23 Door Viewers

Door viewers are ***not*** permitted under the scope of this Field of Application Report

## I.24 Panic Hardware

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MAXIMUM DIMENSIONS | No restrictions |
| MATERIAL | Steel or aluminium |
| POSITION | Surface mounted to the door leaf or frame |
| INTUMESCENT PROTECTION | None required |
| ADDITIONAL REQUIREMENTS/NOTES | • Doors fitted with panic hardware must be treated as unlatched<br>• The installation of panic hardware must not involve the removal of any material from the door leaf or door frame<br>• The installation of panic hardware which includes a battery pack or requires the addition of a cableway through the door or frame is not approved |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | × | LSADD | × | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | × | LSADD+OP | × | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.25 Door Selectors

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS |
|---|---|
| MAXIMUM DIMENSIONS | No restrictions |
| MATERIAL | Steel or aluminium |
| POSITION | Surface mounted to the door leaf or frame |
| INTUMESCENT PROTECTION | None required |
| ADDITIONAL REQUIREMENTS/NOTES | • The installation of the door selector must not involve the removal of any material from the door leaf or door frame<br>• The installation of door selectors which require the addition of a cableway through the door or frame are not approved |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | × | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | × | ULSADD | × | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | × | LSADD+OP | ✓ | | | |
| ULSASD+OP | × | ULSADD+OP | × | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | × |
| | Hollow Steel Frame | × |

# I.26 Acoustic and Smoke Seals

## I.26.1 Drop Seals

| GENERAL REQUIREMENS/NOTES | | |
|---|---|---|
| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
| DROP SEAL MODELS | Option 1 | Lorient LAS8001 SI (Lorient Polyproducts Ltd) |
| | Option 2 | RP8Si (Raven Products) |
| | Option 3 | STS 422 (Sealed Tight Solutions) |
| | Option 4 | STS 422GT (Sealed Tight Solutions) |
| | Option 5 | NOR810S (Norseal) |
| | Option 6 | NOR810 (Norseal) |
| | Option 7 | SLS-DRP-Series (Halspan) |
| MAXIMUM DIMENSIONS | 35mm high x 14mm thick x full width of door leaf | |
| POSITION | Fitted in the bottom leaf edge, located on the centreline of the leaf thickness | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | • It is not permitted to offset the drop seal in the leaf thickness to accommodate a lower flush bolt | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | × | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | × | DADD | × | | | |
| LSASD+OP | ✓ | LSADD+OP | × | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | × |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.26.2 Threshold Plates

Threshold plates are ***not*** permitted under the scope of this Field of Application Report

## I.27 Steel Angle Door Stops

Steel angle door stops are ***not*** permitted under the scope of this Field of Application Report

## I.28 Steel Security Astragals

This hardware item is ***not*** permitted under the scope of this Field of Application Report

## I.29 Mechanical Door Stops – Retractable

Retractable mechanical door stops are ***not*** permitted under the scope of this Field of Application Report

## I.30 Mechanical Door Stops – Hinged

Hinged mechanical door stops are ***not*** permitted under the scope of this Field of Application Report

## I.31 Coat Hooks

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Metal/alloy – must not contain, or be wrapped in, flammable materials | |
| FIXING | Option 1 | Mechanically fixed with maximum 20mm long screws |
| | Option 2 | Glued |
| POSITION | Surface mounted to one, or both faces, of the door leaf | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.32 Door Numbers/Letters

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Metal/alloy – must not contain, or be wrapped in, flammable materials | |
| FIXING | Option 1 | Mechanically fixed with maximum 20mm long screws |
| | Option 2 | Glued |
| POSITION | Surface mounted to one, or both faces, of the door leaf | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

## I.33 Lever Handles

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| MATERIAL | Spindle | Metal/alloy |
| | Handle Body | Metal/alloy – may be clad/wrapped in leather/timber |
| POSITION | Faced fixed to one, or both faces, of the door leaf to suit the lock/latch position | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | • This generic approval only applies to traditional 'mechanical' lever handles and does not apply to electro-mechanical handle sets<br>• Handles must not contain, or be wrapped in, flammable materials (other than leather/timber as stipulated above) | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

# I.34 Fire Door Signage

## I.34.1 Fire Door Discs

| ELEMENT | SPECIFICATION/QUANTITY/DIMENSIONS | |
|---|---|---|
| DIMENSIONS | 100mm diameter x 2mm thick | |
| FIXING | Option 1 | Mechanically fixed with maximum 20mm long screws |
| | Option 2 | Adhered to the leaf face using a thermally softening adhesive e.g. contact adhesive or PVA |
| POSITION | • Fitted to one, or both, leaf faces<br>• Surface mounted | |
| MATERIAL | Steel, aluminium, PVC, High Pressure Laminate or Acrylic | |
| INTUMESCENT PROTECTION | None required | |
| ADDITIONAL REQUIREMENTS/NOTES | None | |

| DOOR CONFIGURATIONS | | | | MAXIMUM LEAF SIZE | DOOR CONSTRUCTION | |
|---|---|---|---|---|---|---|
| LSASD | ✓ | LSADD | ✓ | Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | 54mm Optima | ✓ |
| ULSASD | ✓ | ULSADD | ✓ | | 54mm Optima Bond-Up | ✓ |
| DASD | ✓ | DADD | ✓ | | | |
| LSASD+OP | ✓ | LSADD+OP | ✓ | | | |
| ULSASD+OP | ✓ | ULSADD+OP | ✓ | | | |
| DASD+OP | × | DADD+OP | × | | | |

| PERIMETER INTUMESCENT SEAL SPECIFICATION | FRAME OPTIONS | |
|---|---|---|
| Refer to relevant Figure in Appendix A to H, as applicable for the proposed door configuration | Timber Frame | ✓ |
| | MDF Frame | ✓ |
| | Infilled Steel Frame | ✓ |
| | Hollow Steel Frame | ✓ |

# Appendix J – Summary of Fire Test Evidence

## J.1 Primary Fire Test Data

| TEST REPORT | TEST SPONSOR | TEST LAB | TEST DATE | CONFIGURATION | LEAF SIZE | TEST STANDARD | RESULT | ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE |
|---|---|---|---|---|---|---|---|---|
| RF07128 (Doorset A) | Halspan Ltd | Chiltern International Fire | 13.09.2007 | ULSASD | 2441mm x 1236mm x 54mm | BS476: Part 22: 1987 | 75 minutes | • 54mm Halspan door construction in timber frame |
| RF96062 | Halspan Ltd | Chiltern International Fire | 17.07.1996 | DADD | 2040mm x 826mm x 54mm | BS476: Part 22: 1987 | 64 minutes | • 54mm Halspan Bond-Up door construction in timber frame<br>• Dorma BTS75 floor spring, 8066 top pivot/strap and 7421 bottom strap |
| RF98051 | Timber & Door Products | Chiltern International Fire | 20.07.1998 | ULSADD+OP | 2150mm x 900mm x 54mm | BS476: Part 22: 1987 | 59 minutes * | • 54mm Halspan Optima door construction in timber frame |
| * Premature integrity failure occurred at 59 minutes due to continuous flaming at the top of the glazed aperture. No subsequent failures occurred until 62 minutes. Since the initial failure was unrelated to the door perimeter, KFS have concluded the test data can still be used in support of the leaf size envelopes, leaf configurations and intumescent specifications detailed in Figures A.5 and A.X | | | | | | | | |
| RF01104 (Doorset B) | Halspan Ltd | Chiltern International Fire | 23.10.2001 | ULSADD | 2085mm x 850/442mm x 54mm | BS476: Part 22: 1987 | 63 minutes | • 54mm Halspan Optima door construction in timber frame<br>• Reduced top rail |
| RF01073 (Doorset B) | Halspan Ltd | Chiltern International Fire | 01.08.2001 | ULSASD | 2135mm x 1105mm x 54mm | BS476: Part 22: 1987 | 76 minutes | • 54mm Halspan door construction in backfilled steel frame |
| RF01074 (Doorset A) | Halspan Ltd | Chiltern International Fire | 09.08.2001 | ULSADD | 2145mm x 795/300mm x 54mm | BS476: Part 22: 1987 | 78 minutes | • 54mm Halspan door construction in backfilled steel frame |
| WF531368 | Halspan Ltd | Warringtonfire | 18.04.2023 | LSASD | 2100mm x 926mm x 54mm | BS EN 1634-1: 2014+A1:2018 | 64 minutes | • PUR adhesive for frame construction |
| WF509421 | Halspan Ltd | Warringtonfire | 30.11.2021 | ULDADD | 2280 x 826/826 x 58mm | BS EN 1634-1: 2014+A1:2018 | 71 minutes | • MDF Frame<br>• PVC cladding |
| Chilt/RF00165 | Halspan Ltd | Chiltern International Fire | 22.11.2000 | ULSADD | 2042 x 826/826 x 54mm | BS476: Part 22: 1987 | 66 minutes | • Recessed panels/Grooves |

| TEST REPORT | TEST SPONSOR | TEST LAB | TEST DATE | CONFIGURATION | LEAF SIZE | TEST STANDARD | RESULT | ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE |
|---|---|---|---|---|---|---|---|---|
| BMT/FEP/F15012B | Halspan Ltd | BM Trada | 06.02.2015 | ULSASD | 2135 x 926 x 54mm | BS EN 1634-1: 2014 and BS 1363-1:2012 | 64 minutes | • MDF Frames |
| WF415117 | Gianni Industries Inc | Warringtonfire | 01.10.2019 | LSASD | 2045 x 924 x 54mm | BS EN 1634-1: 2014+A1:2018 | 63 minutes | • 2no Mortice locks |
| RF00006 | Halspan Ltd | Chiltern International Fire | 14.01.2000 | ULSASD | 2100mm x 900mm x 54mm | BS476: Part 22: 1987 | 60 minutes | • 6mm Pyroshield Glazing |
| RF01056 | Halspan Ltd | Chiltern International Fire | 09.07.2001 | ULSASD | 2040mm x 825mm x 54mm | BS476: Part 22: 1987 | 61 minutes | • 6mm Sureglaze glazing |
| RF06005 | Halspan Ltd | Chiltern International Fire | 04.04.2006 | A: ULSASD<br>B: ULSASD | A: 2125mm x 915mm x 54mm<br>B: 2125mm x 915mm x 54mm | BS476: Part 22: 1987 | A: 75 minutes<br>B: 75 minutes | • Leaf configurations and envelopes |
| RF09010 | Halspan Ltd | Chiltern International Fire | 16.01.2009 | LSASD | 2136mm x 916mm x 54mm | BS476: Part 22: 1987 | 68 minutes | • Leaf configurations and envelopes |
| 636.7/09 | Halspan Ltd | Building Research Institute | 22.06.2010 | LSADD | 2300mm x 1000/1000mm x 54mm | BE EN 1634-1: 2008 | 62 minutes | • Leaf configurations and envelopes |
| CFR2211141 | Halspan Ltd | Cambridge Fire Research | 14.11.2022 | A: LSADD | A: 2040mm x 826/243mm x 54mm | BS EN 1634-1:2014+A1: 2018 | A: 78 minutes | • Leaf configurations, frame configurations<br>• MDF frames<br>• MDF door stops |

## J.2 Secondary Fire Test Data

| TEST REPORT | TEST SPONSOR | TEST LAB | TEST DATE | CONFIGURATION | LEAF SIZE | TEST STANDARD | RESULT | ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE |
|---|---|---|---|---|---|---|---|---|
| CFR1909241 | Halspan Ltd | Cabridge Fire Research | 24.09.2019 | LSADD | 2136mm x 915/915mm x 54mm | BS EN 1634: 2014+A1: 2018 | 31 minutes | • CEAM 1131 concealed hinges |
| RF04074 | Halspan Ltd | Chiltern International Fire | 31.08.2004 | LSASD | 2040mm x 923mm x 54mm | BS 476: Part 22: 1987 | 67 minutes | • Soss 418 concealed hinges<br>• Bond-up specification |
| CFR2209201 | Halspan Ltd | Cabridge Fire Research | 20.09.2022 | LSASD, with fan and side lights | 2100mm x 926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 56 minutes | • 3mm gaps between leaf and stop |
| Warres 111202 | Halspan Ltd | Warrington Fire Reseach | 12.01.2000 | ULSADD | 2042mm x 826/826mm x 54mm | BS 476: Part 22: 1987 | 69 minutes | • hollow steel frames |
| F15012B | Halspan Ltd | BM TRADA | 06.02.2015 | ULSASD | 2135mm x 926mm x 54mm | BS EN 1634: 2014 | 64 minutes | • 30mm MDF frames |
| RF08035 | Halspan Ltd | Chiltern International Fire | 13.03.2008 | ULSADD | 2054mm x 910/413mm x 54mm | BS 476: Part 22: 1987 | 64 minutes | • Edgebanding |
| WF504390 | Halspan Ltd | Warringtonfire | 11.06.2021 | DADD | 2100mm x 926/926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 61 minutes | • Double acting double door leaves Optima 60 blank<br>• PUR Adhesive |
| WF509420 | Halspan Ltd | Warringtonfire | 06.12.2023 | DADD | 2200mm x 826/826mm x 54mm | BS EN 1634: 2014+A1: 2018 | 71 minutes | • PUR Adhesive |
| WF509421 | Halspan Ltd | Warringtonfire | 30.11.2021 | DADD | 2200mm x 826/826mm x 54mm | BS EN 1634: 2014+A1: 2018 | 69 minutes | • PUR Adhesive |
| WF531368 | Halspan Ltd | Warringtonfire | 18.04.2023 | LSASD, with fan and side lights | 2100mm x 926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 64 minutes | • PUR Adhesive |
| WF531374 | Halspan Ltd | Warringtonfire | 20.04.2023 | LSASD, with fan and side lights | 2100mm x 926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 65 minutes | • PUR Adhesive<br>• Letter Plate |

| TEST REPORT | TEST SPONSOR | TEST LAB | TEST DATE | CONFIGURATION | LEAF SIZE | TEST STANDARD | RESULT | ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE |
|---|---|---|---|---|---|---|---|---|
| WF533904 – Door B | Halspan Ltd | Warringtonfire | 13.07.2023 | LSASD | 2100mm x 926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 66 minutes | • PUR Adhesive |
| WF533911 | Halspan Ltd | Warringtonfire | 11.07.2023 | LSASD | 2100mm x 926mm x 54mm | BS EN 1634: 2014+A1: 2018 | 63 minutes | • PUR Adhesive |
| Chilt/RF04001 – Door A | Pilkington | Chiltern International Fire | 22.01.2004 | ULSASD | 2040mm x 924mm x 55mm | BS 476: Part 22: 1987 | 70 minutes | • 13mm Pyrodur |
| Chilt/RF05036 | Pilkington | Chiltern International Fire | 21.04.2005 | ULSASD | 2133mm x 1037mm x 54mm | BS EN 1634-1:2000 | 64 minutes | • 10mm Pyrodur |
| Chilt/RF08097 | Schott | Chiltern International Fire | 25.07.2008 | LSADD | 2400mm x 950/950mm x 54mm | BS EN 1634-1:2000 | 59 minutes | • 6mm Pyran S |
| RF11131B | Halspan Ltd | Chiltern International Fire | 31.08.2011 | ULSASD | 2250mm x 950mm x 54mm | BE EN 1634-1: 2008 | 60 minutes | - |
| RF02125 | Halspan Ltd | Chiltern International Fire | 16.12.2002 | ULSADD.OP | 2700mm x 825/825mm x 54mmX | BS476: Part 22: 1987 | 59 minutes | - |
| RF03041 | Halspan Ltd | Chiltern International Fire | 17.03.2003 | A: ULSADD<br>B: ULSASD | A: 2135mm x 926/300mm x 54mm<br>B: 2135mm x 915mm x 54mm | BS476: Part 22: 1987 | A: 61 minutes<br>B: 61 minutes | - |
| WARRES 114306 | Halspan Ltd | Warrington Fire Research | 23.06.2000 | A: ULSADD<br>B: ULSASD | A: 2037mm x 912/447mm x 53mm<br>B: 2040mm x 927mm x 53mm | BS476: Part 22: 1987 | A: 41 minutes<br>B: 46 minutes | - |
| RF00068 | Halspan Ltd | Chiltern International Fire | 15.09.2000 | ULSASD | 2103mm x 902mm x 55mm | BS476: Part 22: 1987 | 56 minutes | - |

| TEST REPORT | TEST SPONSOR | TEST LAB | TEST DATE | CONFIGURATION | LEAF SIZE | TEST STANDARD | RESULT | ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE |
|---|---|---|---|---|---|---|---|---|
| RF00069 – Door A | Halspan Ltd | Chiltern International Fire | 23.11.2000 | ULSASD | 2100mm x 824mm x 54mm | BS476: Part 22: 1987 | 66 minutes | - |
| RF96061 | Timber & Door Products | Chiltern International Fire | 18.07.1996 | ULSADD | 2040mm x 830/830mm x 53mm | BS476: Part 22: 1987 | 55 minutes | - |
| WF404075 | Specialized Security | Exova Warringtonfire | 20.05.2016 | B: ULSASD | 2034mm x 903mm x 54mm | BS EN 1634-1: 2014 | 62 minutes | • Maglocks |
| FRR-2010-2942 | Halspan Ltd | Material Lab | 04.10.2020 | LSADD | 2136mm x 809/406mm x 54mm | BS476: Part 22: 1987 | 70 minutes | • Timber veneer wrapping around the frame reveal |
| CFR2002051 | Halspan Ltd | Cambridge Fire Research | 05.02.2020 | ULSADD | 2850mm x 927/927mm x 54mm | BS476: Part 22: 1987 | 64 minutes | • STS glazing system for Pyrobelite 12 |
| WF504819 | Halspan Ltd | Wawrringtonfire | 22.06.2021 | LSADD | 2272mm x 920/268mm x 66mm | BS EN 1634-1: 2014+A1:2018 | 67 minutes | • MDF Stops |
| RF13167 | Halspan Ltd | Chiltern International Fire | 29.07.2013 | ULSADD | 2440mm x 915/915mm x 54mm | BS EN 1634-1: 2008 | 60 minutes | • Reduced top rail<br>• Glazing mid-rail |