General Installation Guidelines for Fire Resistant Doorsets.

Overview

Details contained within this document refer to recommended minimum requirements for fire rated finished door leaves and doorsets for installation as supplied by Principal Doorsets. The door leaf and doorsets supplied have been tested in relation to EN 1634, BS 476: Part 22: 1987 and are designated by BM TRADA as achieving fire resistance of to 30, 60, 90 and 120 minutes when installed in accordance with the conditions stated for each type within this manual – subject to this the door will meet the relevant standard when used in accordance with the provisions therein.

Storage

Fire door leaf and doorsets are joinery components and as such, their handling and storage prior to installation should be such that they are protected from rain, sun, and splashing by corrosive or staining materials and preferably in a ventilated building.

Products should ALWAYS be stored in a dry, enclosed location – the relative humidity of the storage area and the final installed location should fall within the range: 40 to 60% RH, Moisture content of our products is 10 to 12% for internal doorsets. Doors/Doorsets stored outside of this range may swell or shrink and distort excessively, will void guarantees, and not perform as specified.

Correct storage on site is essential. Store in a clean, dry area, in the same conditions as are expected when the building is occupied. Cover to protect against dirt and risk of damage from other trades working. The correct storage conditions of Principal Doorsets products are essential to ensure the product performs and appears as specified. Storage and protection of the products on site is the responsibility of the contractor.

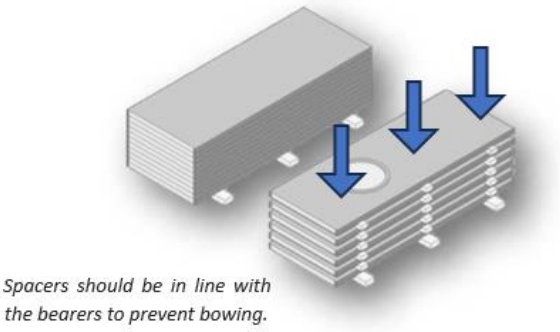
Principal Doorsets products should be stored close to the final installation area or in a location with the same moisture levels to allow the doorsets to acclimatise to the surrounding environment; ideally the products should be stored for 2 to 3 weeks in this location.

The movement in the product to stabilise. But please note even with these steps the doors/doorsets may still need adjusting when the building comes into use, as environmental conditions will change.

Door leaf and doorsets that are clear lacquered or varnished should be subject to storage that protects them from being unevenly exposed to sunlight. Doors must not be stored on underfloor heating as this may cause doors to bow. In addition, door leaf and doorsets must also be protected from exposure to excessive moisture and stored horizontally on 3 or more equally spaced bearers, away from ground floor level. As is applicable it is also recommended that any wrappings be left in place for as long as possible.

Veneered surfaces should not be exposed to strong light or direct sunlight as this may cause differential fading and shrinkage and/or cracking of the veneer.

Store door leaves, doorsets and panels stacked flat and level, on supports. Supports should be timber, covered with plywood or cardboard to avoid marking the door/panel surface, minimum 100mm wide x 50mm deep, across the full width of the door/panel. There should be three such supports, equally spaced, one across the centre and one 300mm from each end.



Spacers should be in line with the bearers to prevent bowing.

Our doors and doorsets are usually despatched to site polythene wrapped, whilst this gives a sensible level of transport protection it must not be deemed as waterproof.

Prime/Seal

To prevent ingress of moisture, doors must be primed and sealed within three days of reaching site, and a second coat applied within a reasonable period thereafter. Both the top and the bottom edges of the door should be sealed. Principal Doorsets label or identifying BM Trada fire plugs should not be painted over or removed.

Heating of the Building

Should be introduced slowly over a long period. To achieve maximum air flow and to reduce the risk of uneven temperature build-up, room must be well ventilated. Doors held open with wedges against a door closer action will induce twist and void any warranty.

Doorsets are not freestanding products, and they will not provide for any design performance, until they have been competently installed into a suitable, sealed, structure.

Adhesive Tape

Should not be applied to the door faces as this could damage the finish on the products, it may also cause a natural veneer to fade or darken non-uniformly as areas of the door will be subjected to different levels of Ultraviolet. Where the doors are subjected to a lot of sunlight, care must be taken as items placed on the face of veneered doors could leave a “silhouette shadow” as the veneer will fade or darken in direct sunlight.

Vision Panels

The recessing and fitting of vision panels by others is not allowed under our BM Trada Q-Mark scheme. Vision panels must be installed within a controlled manufacturing environment. Speak to your Lead Project coordinator for assistance.

Overhead Door Closers

Fit a face fix overhead door closer as per manufacturer’s instructions, and integral door closers if required are to be approved and machined by Principal Doorsets. Integral door closers must be fitted with the intumescent kit supplied with the closer.

Ironmongery

Locks, Keeps, Flush Bolts, door viewers, letterplates, drop seals and Hinges must be fitted with intumescent kits when required by the field of application. Full details of permissible ironmongery are available from your Lead Project Coordinator. Any additional ironmongery to be fitted must be in line with the Field of Application referenced on your Customer Schedule. Strict adherence to the Field of Application must take place or the certification of the product will become invalid.

All Door Closers, Hinges and Locks must be Tested or UKCA/CE marked.

Threshold

Automatic threshold drop seals may be recessed into the bottom edge of leaves in this design without compromising the fire resistance performance. It is preferable for mechanical drop seals to be factory fitted, however there are occasions where they may be fitted on site.

Guidance on which seals can be fitted can be found in the Field of Application referenced on your Customer Schedule.

Overpanel

Overpanels are fitted with sections of door core and are separated from the leaf heads by a transom. The transom required to separate the leaf heads must be to the same specification as the door frame. The over panel must be fixed by screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the panel.

Fixings must be no more that 100mm from each corner and a maximum of 250mm in between.

Please note that steel frame doorsets are not permitted with flush or transomed over panels or sidelights.

Smoke Seals

The intumescent seals may be provided with or without pile or elastomeric fins in order to provide additional performance i.e., smoke, or acoustic control.

Smoke seals or combined intumescent/smoke seals that are fitted to the door have been tested in accordance with the associated test method. Providing the smoke seals, any interruptions, door gaps, and the type/configuration of the doorset are consistent with the detail tested, the doorset will comply with current smoke control legislation under Approved Document B; Any other components installed where smoke leakage may occur must also be taken into account.

Warning: The incorrect fitting of smoke seals may impair the operation of a doorset and therefore compromise the fire resistance performance.

Protection

It is essential to protect the doorsets after they are installed until the handover of the building, our products are late second fix items, but other trades will still be passing through the doorways. The packaging removed from the doors/ doorsets could be reused to

protect the door facings and will give basic protection from paint and dirt etc., however, it is the contractor's responsibility to assess the level of protection required for the doorsets and to provide it.

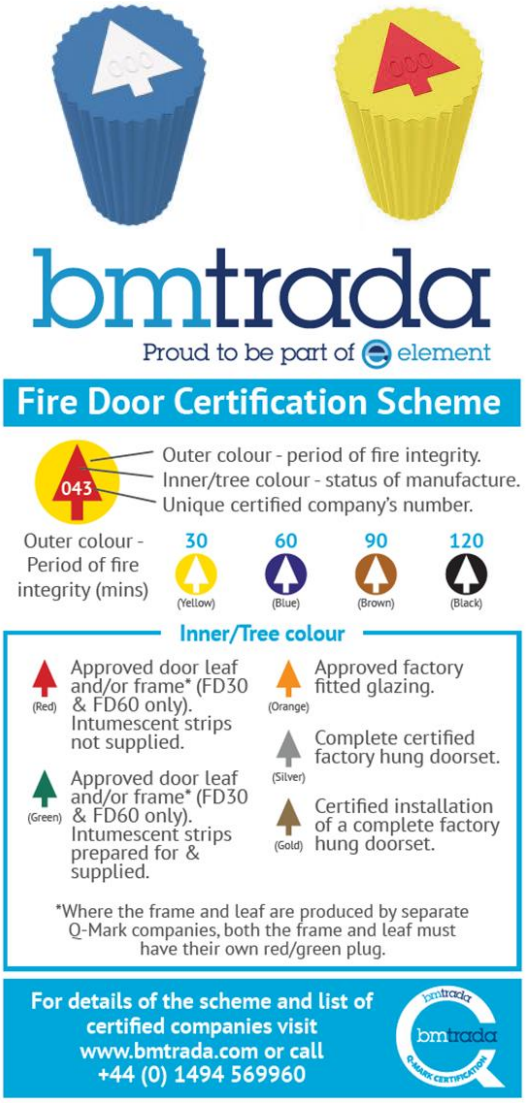
Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum is maintained.

BM TRADA/ Q-MARK Plugs

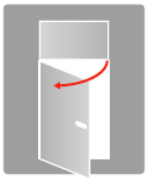
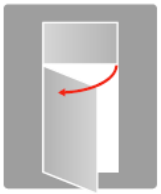
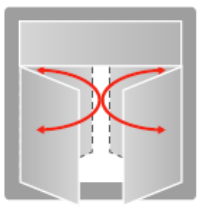
These doorsets/leafs have plastic plugs fitted into the top of the door to confirm the period of fire resistance issued under the BM TRADA Q-Mark certification scheme. Our 30 & 60 doors are plugged on the top edge of the leaf with a coloured outer plug and inner "tree". (See figure 1).

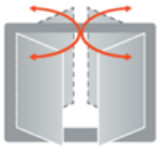


Door Leaf

These doors/sets have been tested as one of the options below.

For maximum sizes, please consult with Principal Doorsets as some sizes have further restrictions.

Doorset Configurations with Overpanels			
A		LSASD+OP	Latched Single Acting Single Doorset with over panel.
B		ULSASD+ OP	Unlatched Single Acting Single Doorset with over panel.
C		DASD+OP	Double Acting Single Doorset with over panel.
G		LSADD+OP	Latched Single Acting Double Doorset with over panel
H		ULSADD+OP	Unlatched Single Acting Double Doorset with over panel.
I		DADD+OP	Double Acting Double Doorset with over panel

Doorset Configurations			
	Depiction	Abbreviation	Description
A		LSASD	Latched Single Acting Single Doorset
B		ULSASD	Unlatched Single Acting Single Doorset
C		DASD	Double Acting Single Doorset
G		LSADD	Latched Single Acting Double Doorset
H		ULSADD	Unlatched Single Acting Double Doorset
I		DADD	Double Acting Double Doorset

Door Gaps

When fitted, the gap between door and frame at the top and side must be between a minimum of 2mm and a maximum of 4mm. Gap at the bottom of the leaf not to exceed 10mm between the bottom of the door leaf and the top of the floor covering. Alignment tolerance: the leaf must not be proud of the frame by more than 1mm.

WARNING: Failure to fit correctly will invalidate not only door functionality but will also invalidate the fire/smoke certification.

Installer

It is strongly recommended that the installer is a member of a recognised third-party fire door installer scheme to ensure that best practice is used. Installers should be familiar with the content of BS 8214: 2016 - Code of practice for fire door assemblies and the standard BS EN 1634 for pedestrian doorsets.

In respect of fire doors, inspection authorities may require evidence that the installation process complies with the tested specification including:

- Intumescent systems.
- Compliance of the glazing with the tested detail supplied by the door leaf manufacturer.
- The size of all operating gaps.
- Intumescent protection around hardware and the quality of the preparations.
- The quality of the supporting construction and the prepared opening.
- The fixing of the fire door.
- Fire and smoke stopping methods used in fitting-in gaps and voids.

Installation

If an installed doorset is difficult to operate, users of the building may disable elements of a doorset based on user convenience, this has consequential safety risks; for example, wedging the doors in an open position will render the fire doorset ineffective.
The door assemblies supplied are approved to be installed in brick, block, masonry, timber, or steel stud of minimum thickness 75mm, providing at least 30- or 60-minutes fire resistance unless otherwise stated.

Before you Start

Make sure that you have the correct door/doorset in relation to the opening in which it is going to be installed; each product has a unique reference located on the label, which links with the contract drawings and schedules. The door reference number is also marked under the middle hinge in permanent marker in the event the label is damaged. Where doors are stored, this will help you match the correct door and frame later and to minimise site damage.

Structural Opening

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer

Step by step

1. Using the doorset labels and a floor plan identify that you have the right components for the doorset location you are to install.
2. Remove packaging and look out for loose items such as pellets, discs, projecting ironmongery etc. These could be in a box loose with doorsets, or bag secured (taped) to a door or frame reveal.
3. Carefully take out the doors and stack flat on three equally spaced bearers, safely out of the way.
4. Offer the frame into the opening and pack the hanging jamb to make it plumb to both opening and wall face.
5. Fix the hanging jamb making sure that it is plumb both to the structural opening and the wall faces. Make allowances for any floor level discrepancies. For example, if the floor is out of level, it may be possible to keep the hanging jamb above floor screed but still concealed by floor coverings such as carpet.
6. Check and adjust the level of the frame head. Position the second jamb and ensure that it is plumb both ways and parallel to the hanging jamb.
7. Pack and insert two fixings only into the second jamb, and if needed for a pair of doors, the head. This allows adjustments to be made.
8. Hang the door(s) on the hinge recesses and achieve the required clearances by increasing or decreasing the packing thickness. Check alignment to ensure that there is no twist.
9. Fix any loose ironmongery items, door stops or architraves and ensure that this has not put the doors out of alignment. When everything has been adjusted correctly insert the remaining fixings and re-check clearances. The fixings may now be concealed.

General Door Edge Gaps & Alignment Tolerance Specification	
Location	Dimensions
Door Edge Gaps	Minimum 2mm. Maximum 4mm
Alignment Tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	Varies between bottom of leaf and top of floor covering according to doorset. Advice on this will be provided.

Factory Frame Preparation

Frames are presented without being machined for fixing to opening. There are many differing configurations which may render many holes, 'excess to requirement' making the frame appear unsightly. Principal Doorsets offer frames which allow the product to be secured to openings with the securing positions hidden either behind the stop, intumescent seal grooves, or the hinge pockets. The frames can be solid plain lining or once rebated (see drawings below).

Solid Plain Lining (SPL) configuration:

Integral Architrave and planted stop. (ISL) Configuration:

Standard Double Action Configuration:

Once Rebated Lining (ORL) Configuration:

Q-Mark requirements must be followed for the installation of fire doors.

Where specifying products to be used in conjunction with fire doors Principal Doorsets ensure that there is appropriate test evidence for these products in place. We also make sure the test report reference numbers are available to the installers of the fire doors as a means of demonstrating compliance. These test references can be found on your Customer Schedule.

INDEX

Strebord 30/60

Installation Instructions for Strebord 30 and 60 Doorsets

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

Frame Material:

Permitted Material
Softwood(30 only), Hardwood, MDF, Postformed

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

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

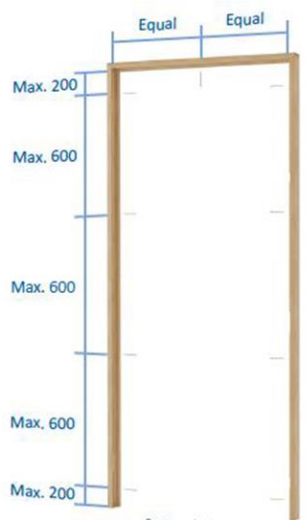
The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.



Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

These are considered as rigid constructions and are solid throughout the depth of the wall and have inherent fire resistance. These walls are denoted as rigid constructions in BS EN 1364 Part 1 as they deflect very little during a fire test. Due to the solid nature of the wall firestopping as detailed above will be adequate. Highly

Strebord 30/60

perforated blockwork is not covered by this category and specific test evidence must be referenced to ensure adequate support during the fire exposure period.

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes.

In the following section the permitted installation for Strebord FD30 and FD60 doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

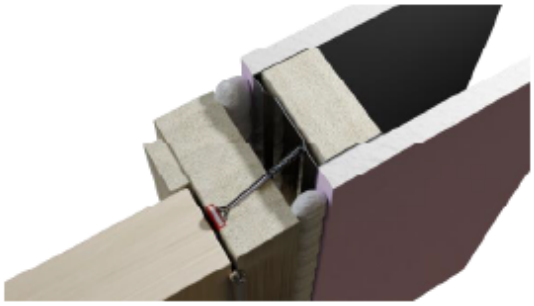
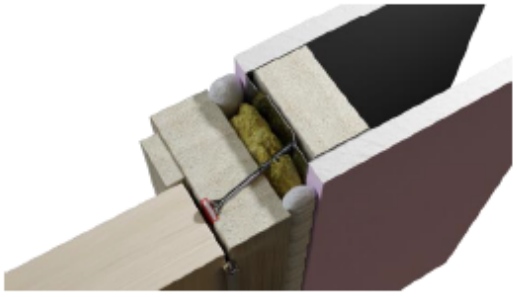
For the generic systems that specific the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Strebord 30/60

Fire Stopping for Strebord 30

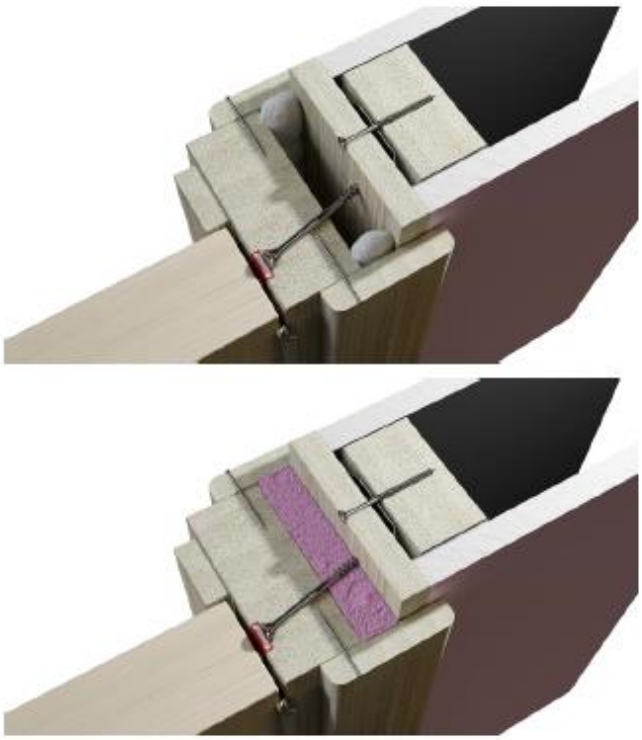
The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick may be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	 

Strebord 30/60 Cores

Strebord 30/60

cont...

Gap (mm)	Requirement	3D model depiction
Over 20	This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick may be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Strebord 30/60 Cores

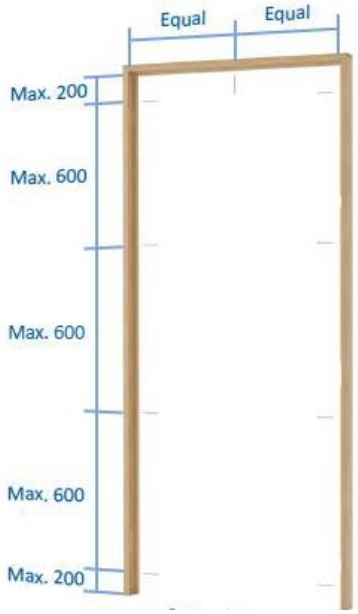
Strebord 30/60

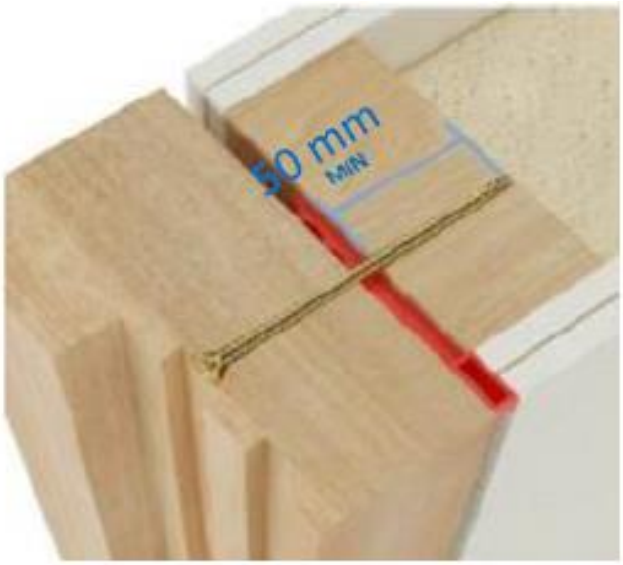
Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.





Strebord 30/60 Cores

Strebord 30/60

Leaf Adjustment

The Strebord® 44 & Strebord® 54 range of doorsets may be altered as follows: Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained

Door Gaps

Door gaps and alignment tolerances must fall within the following range: Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Bottom of the Leaf These are the maximum tolerances for fire resistance only.	8mm between bottom of leaf and top of floor covering. The following specific gap requirement, as detailed in section 7.8, takes precedence: Where a timber threshold is installed – 3.5mm between the bottom of the leaf and top of the timber threshold.

Strebord 30/60

Specific fire stopping solutions.

Based on test evidence the following fire stopping solutions are considered appropriate.

Sealed Tight Solutions Ltd

- ST88 intumescent mastic
- Mineral Fibre
- ST99 fire foam
- ST99 Expanding foam.

Large Gaps

- Timber or non-combustible sub frame bedded on wall with ST88 and gap between sub frame and frame filled with ST99. Gap between frame and sub frame 25mm. Overall gap 60mm max

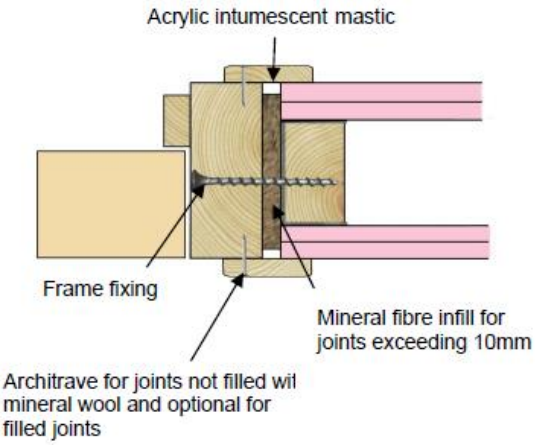
Fire and Acoustic Seals Ltd

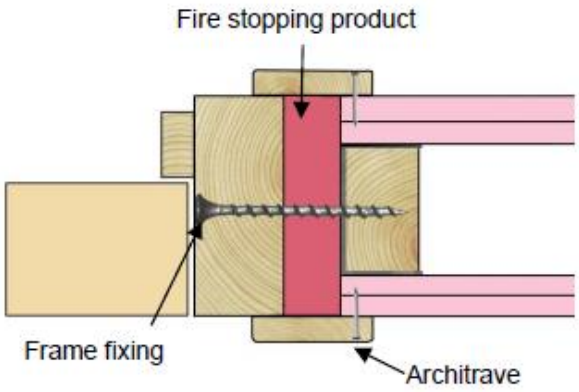
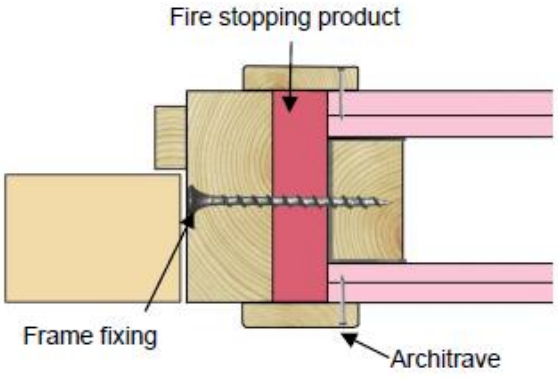
- Intumescent mastics
- Expanding foam and mastics
- Expanding foam with architraves

Strebord 30/60

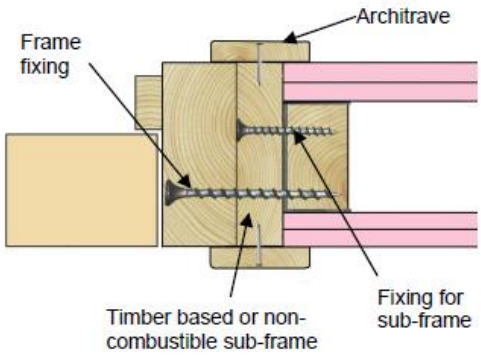
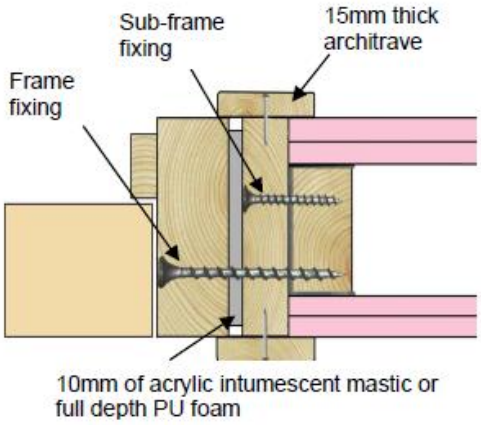
Fire Stopping for Strebord 60

The following tables detail which wall type the Strebord 60 frame can be installed.

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side	
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.	

3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

Strebord 30/60

4. Timber based or non-combustible sub-frame up to 50mm thick, with no gaps between the components. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
5. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

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

Structural Opening

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

Strebord 30/60

PAS 24/Dual Scope

When installing a dual scope doorset with enhanced security features that meet both the PAS 24 standard for security and the BS 476: Part 22:1987 standard for Fire, there are several important considerations to ensure proper installation and compliance.

Installation

As with fire door installation, it is strongly recommended that the installer is a member of a recognised third-party Pas 24 door installer scheme to ensure that best practice is used.

Manufacturer's Instructions

Always refer to the instructions and guidelines for installation and fitting of any items. These instructions are specific to the dual scope PAS 24 doorset you're installing and will ensure proper installation for optimal security and fire performance.

Not following the manufacturers instruction may invalidate the certification.

Approved Hardware

Verify that all hardware used in the installation of your dual scope doorset, including hinges, locks, handles, and any other components, are approved and compliant with PAS 24 standards. Using non-compliant hardware can compromise the security of the doorset.

You will find that all essential hardware has been factory fitted however, some non-essential hardware may be fitted on site. It is critical that only the permitted items are fitted.

Limitations include:

- Door Viewers
- Drop Seals
- Handles
- Cylinders
- Letter plates

Details for items that are permitted are listed within the Field of Application report CNA/F15084 under these headings.

Frame and Structure Compatibility

Verify that the door frame and surrounding structure are compatible with the dual scope PAS 24 doorset. The frame should be sturdy and properly installed to support the weight and security features of the doorset.

Alignment and Fit

Properly align the door within the frame to ensure the fire elements are met and to minimise gaps that could compromise security.

Secure Fixings:

Use appropriate and secure fixings to attach the doorset to the surrounding structure. This includes screws, bolts, and other fasteners that are resistant to tampering or forced entry.

Maintenance:

Regular maintenance is essential to ensure continued performance and security. This includes checking and adjusting components, lubricating moving parts, and repairing any damage promptly.

Strebord 30/60

Report References

1. Strebord 30_Chilt A02066
2. Strebord 60 A02067
3. Strebord Chilt A10152
4. Warm Springs A10152
5. Stredor F15159
6. Stredor/Strebord F15159
7. Strebord/Stredor WF407090
8. Stredor WF377027

Pas 24

Principal Doorsets Ltd - 050 Dual Scope PAS24-22+30min Fire – Strebord/ Stredor D297-001

Principal Doorsets Ltd- 050 Dual Scope PAS24-22+60min Fire - Strebord /Stredor D297-002

Further detail available from your Lead Project Coordinator

Halspan 30/60

Installation Instructions for Halspan 30/60

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

Frame Material:

Frame Material
Softwood (30 only) *Hardwood (excluding beech.)* *MDF (where permitted)*

For limitations refer to report number in the customer schedule.

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

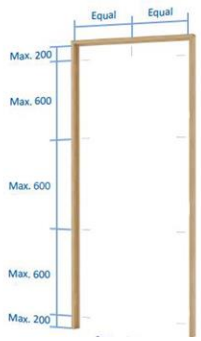
Architrave

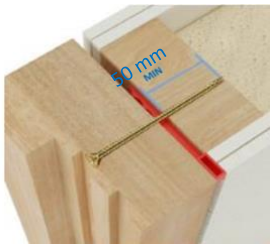
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3 to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Supporting Construction

The supporting construction may be a timber or steel stud plasterboard partition, metal stud demountable partition or masonry wall, but shall be of a type that has been tested or assessed to provide more than 30/60 minutes fire resistance, at the required size, when incorporating 30/60 door assembly openings.

If fitted into timber/steel stud or metal stud demountable partitions, the method of forming the door assembly aperture must be as tested by the partition supplier / manufacturer.

Reference: BS EN 1634-1:2014+A1:2018 - “Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware. Fire resistance tests for doors, shutters, and openable windows".

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum requirement is maintained.

Appendix A and Appendix B, show the permitted installation for Halspan 30 and 60 doorsets.

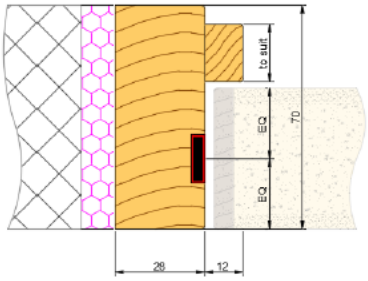
This section considers the installation of the different types of frames and doorset.

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

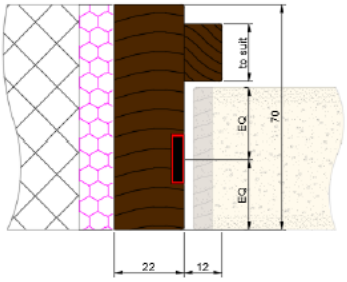
Halspan 30/60

Halspan 30 Installation Detail

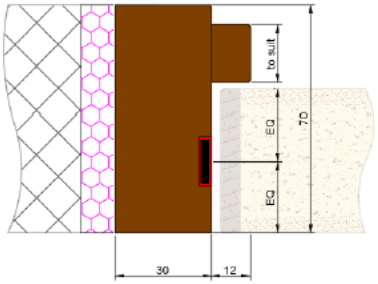
Frame flush to wall with architrave being optional



(A): Frame 1

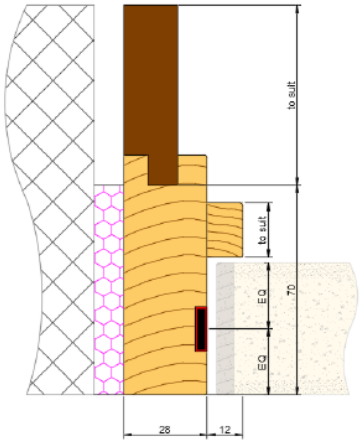


(B): Frame 2

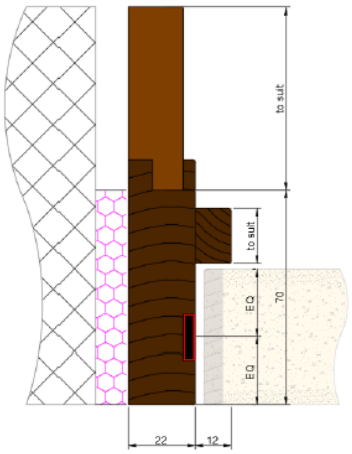


(C): Frame 3

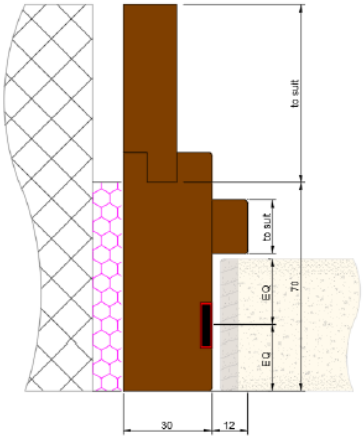
Example of installation detail for frames 1, 2 & 3



(D): Frame 1

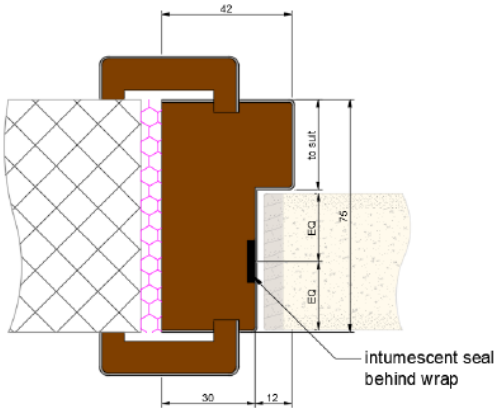


(E): Frame 2

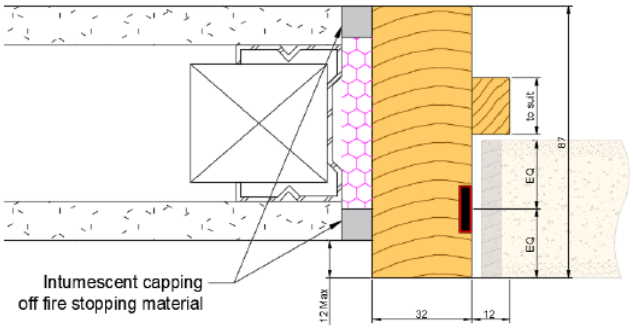


(F): Frame 3

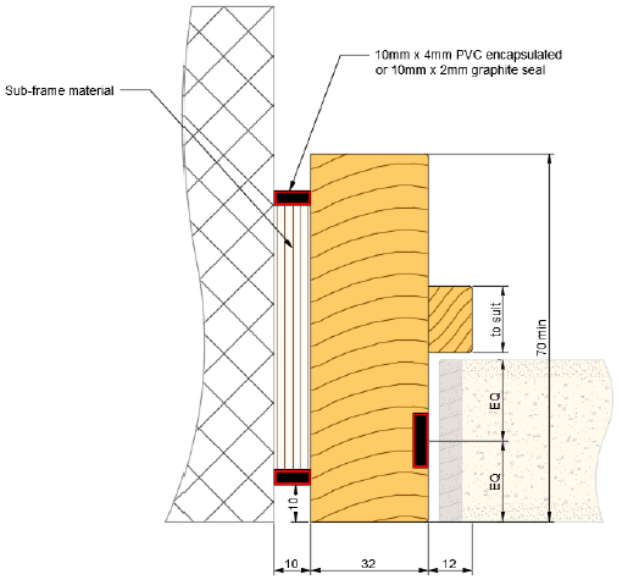
Example of installation details for frames 1, 2 & 3 with MDF/softwood extension liners

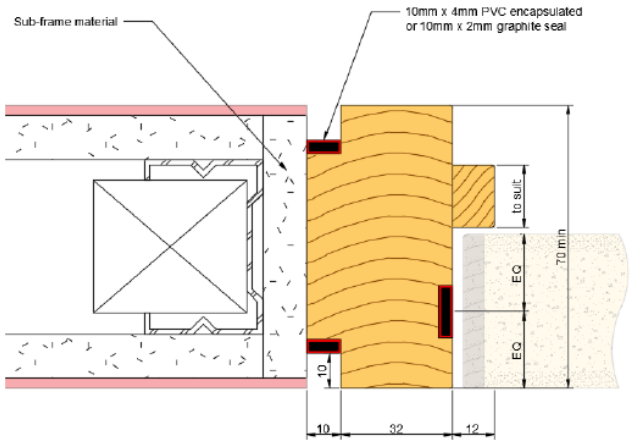


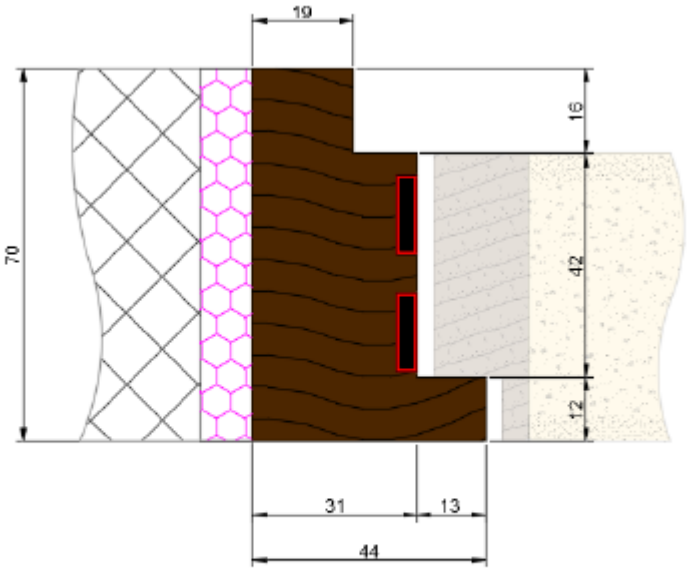
(B): Frame 4 with integral (rebated) stop



Halspan 30/60







Note: The above drawings assume that the wall aperture is suitably protected so that the effects of the fire cannot affect the wall. If this is not the case the fire stopping must be full depth and the extension liner must be the same width and material as the frame.

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

Halspan 30/60

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

Firestopping Requirements for Halspan 30 Doorsets

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm)	**Requirement**
Up to 10	must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Based on the test evidence the use of architraves is optional.
Up to 20	must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.
Over 20	A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: • Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. . • The subframe to door frame gap filled as above.

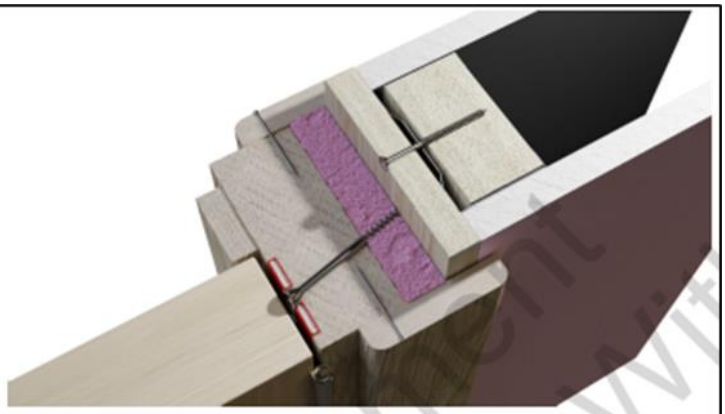
Halspan 30/60

Halspan 60 Installation Guidance

Firestopping Requirements for Halspan 60 Doorsets

Up to 10mm	Sealing type 1 Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
Up to 20mm	Sealing type 2 Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Gaps must be filled full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.	 

Halspan 30/60

Over 20mm Max 50mm	Sealing type 3 A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth	
	of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Not shown on drawing.	

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm)	**Requirement**
Up to 10	must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.
Up to 20	must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.
Over 20	A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: • Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. • Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap. • The subframe to door frame gap filled as above.

Halspan 30/60

PAS 24/Dual Scope

PAS 24:2016 - Classification 'D'

When installing a dual scope doorset with enhanced security features that meet both the PAS 24 standard for security and the BS 476: Part 22:1987 standard for Fire, there are several important considerations to ensure proper installation and compliance.

Installation

As with fire door installation, it is strongly recommended that the installer is a member of a recognised third-party Pas 24 door installer scheme to ensure that best practice is used.

Manufacturer's Instructions

Always refer to the instructions and guidelines for installation and fitting of any items. These instructions are specific to the dual scope PAS 24 doorset you're installing and will ensure proper installation for optimal security and fire performance.

Not following the manufacturers instruction may invalidate the certification.

Approved Hardware

Verify that all hardware used in the installation of your dual scope doorset, including hinges, locks, handles, and any other components, are approved and compliant with PAS 24 standards. Using non-compliant hardware can compromise the security of the doorset.

You will find that all essential hardware has been factory fitted however, some non-essential hardware may be fitted on site. It is critical that only the permitted items are fitted.

Limitations include:

- Door Viewers
- Drop Seals
- Handles
- Cylinders
- Letter plates

Details for items that are permitted are listed within the Field of Application report CNA/F15084 under these headings.

Frame and Structure Compatibility

Verify that the door frame and surrounding structure are compatible with the dual scope PAS 24 doorset. The frame should be sturdy and properly installed to support the weight and security features of the doorset.

Alignment and Fit

Properly align the door within the frame to ensure the fire elements are met and to minimise gaps that could compromise security. (*Door Gaps and Alignment, section 1)*

Secure Fixings:

Use appropriate and secure fixings to attach the doorset to the surrounding structure. This includes screws, bolts, and other fasteners that are resistant to tampering or forced entry.

Halspan 30/60

Maintenance:
Regular maintenance is essential to ensure continued performance and security. This includes checking and adjusting components, lubricating moving parts, and repairing any damage promptly.

Report References:

Chilt/A01204 Part 1 Optima 30

Chilt/A01015 Prima 60

FEA/F97097 Prima/Optima 30

FEA/F97174 Prima 30

FEA/F01205 Optima 60

FEA/F96103 Prima 60

Chilt/A13227 IT/XT 60

Chilt/ A13242 XT/IT 30

Downloadable from: https://halspan.com/products/

Pas 24

Principal Doorsets Ltd - 050 (D259-002) PAS24+16
Halspan Single Door - Iss 3

Principal Doorsets Ltd - 050 (D259-003) PAS24+16
Halspan Double Door - Iss 3

Further detail available from your Lead Project Coordinator

Halspan 90

Installation Instructions for Halspan 90

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

Frame Material:

Material
Hardwood

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

Timber Based Frames:

- a) Plasterboard clad timber stud partitions
- b) Plasterboard clad steel stud partitions with timber lining
- c) Masonry constructions

Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 90 minutes supporting a doorset design.

Wall type c above must be determined to be able to provide at least the same level of fire resistance of the doorset design. _

Door Frame Installation

In all instances, the door frame must be fully contained within the thickness of the supporting structure.

Furthermore, when fitted within a masonry construction as detailed in section 10.5 the entire thickness of the leaf and frame shall be within the thickness of the masonry element.

Where the thickness of the supporting structure is greater than the depth of the door frame and architrave is applied, it is permitted to fit the architrave such that it overlaps the door frame and abuts the structural opening to conceal the firestopping gap.

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

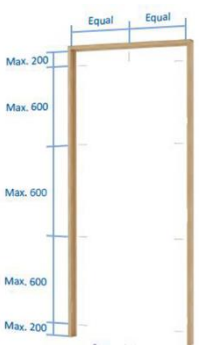
Guidance for various methods of sealing the frame to structural opening gap is also given in BS 8214: 2016, “Code of practice for fire door assemblies”, which may be referred to where applicable.

Fixings

The fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.
For single leaf doorsets, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.
For double leaf doorsets, the upper horizontal framing section abutting the structural opening must also be secured to the supporting construction using steel fixings at either:

- 600mm maximum centres and maximum of 150mm from corner or
- 1No. fixing applied nominally central to the width of the frame head.

The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Halspan 90

Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained.

In the following section the permitted installation for Halspan 30 and 60 doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

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

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

Door gaps and alignment tolerances must fall within the following range:

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	8mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only. (WF384941 AR1)

Halspan 90

Firestopping

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

Gap (mm)	Method
Up to 20	Tightly packed with rock or stone based mineral fibre, capped on both sides with a 10mm depth of acrylic intumescent mastic. Products must have been demonstrated (at the required maximum gap dimension) to achieve 90 minutes fire resistance performance behind a timber frame to BS 476: Part 22: 1987 or BS EN 1634-1. Mineral fibre capped with intumescent mastic has been proven via test evidence for the Halspan® 90 doorsets in test report WF372528 and WF386186 A. Architraves of the same tested material type and dimensions must be applied if included within the evidence used to support the firestopping medium.
Up to 20	Filled to the full depth with fire resisting foam, once cured, a depth of 10mm from each face removed and refilled with intumescent mastic. Products must have been demonstrated (at the required maximum gap dimension) to achieve 90 minutes fire resistance performance behind a timber frame to BS 476: Part 22: 1987 or BS EN 1634-1 when used in conjunction with each other. (i.e. the foam and mastic must have been tested together). Architraves of the same tested material type and dimensions must be applied if included within the evidence used to support the firestopping medium. Dennard Polyurethane expanding foam, DI-PU0912 in conjunction with Tremco Illbruck Nullifire FS702 Intumescent Acrylic Sealant has been tested in the manner detailed above (UB128-1A). Based on the testing, this combination may be used up to a maximum width of 10mm. When this method and combination is applied architraves are optional as none were fitted in the testing undertaken.

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 90 minutes fire resistance.

Halspan 90

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.

Halspan 120

Installation Instructions for Halspan 120

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

Frame Material:

Material
Hardwood

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

Timber Based Frames:

Rigid & Flexible Wall Types

May be used within rigid and flexible supporting constructions.

For walls that remain rigid during fire exposure (brickwork or blockwork, for example) the opening should be square, plumb and provide a flat surface for installation of the doorset.

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer. Flexible wall types must have supported fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 120 minutes supporting a doorset design.

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

It must therefore be capable of staying in place and intact for a minimum of 120 minutes

Door Frame Installation

In all instances, the door frame must be fully contained within the thickness of the supporting structure.

Furthermore, when fitted within a masonry construction as detailed in section 10.5 the entire thickness of the leaf and frame shall be within the thickness of the masonry element.

Where the thickness of the supporting structure is greater than the depth of the door frame and architrave is applied, it is permitted to fit the architrave such that it overlaps the door frame and abuts the structural opening to conceal the firestopping gap.

The following information contains permitted fire stopping details.

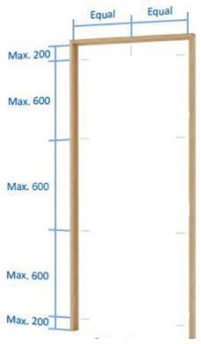
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

The frame jambs are to be fixed to the supporting construction using 5mm x 100mm long steel screws, spaced at a maximum 600mm centres and 150mm from the top and bottom. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.



Halspan 120

Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Halspan ® 120 range of doorsets may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	A closing bevel can be applied to the leaf edge to assist with onsite fitting of the leaf, provided no more than 1mm of the lipping is removed from the first 50% of the leaf thickness. On double doors this bevel can be applied to both leaves and on both faces provided the gap between the seals and the opposing leaf edge does not exceed the maximum of 4mm

In the following section the permitted installation for Halspan 120 Doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

For the generic systems that specific the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset. Fire & Acoustic Intumescent Acrylic Sealant or ST88 mastic have both been both successfully tested for 120 minutes applied over the foam on both faces.

Fire & Acoustic Fire Door Foam or STS ST99 foam have been successfully tested for 120 minutes.

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

Door gaps and alignment tolerances must fall within the following range:

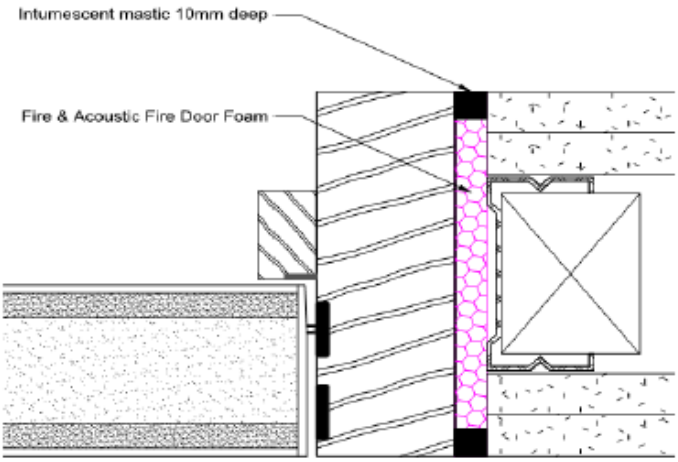
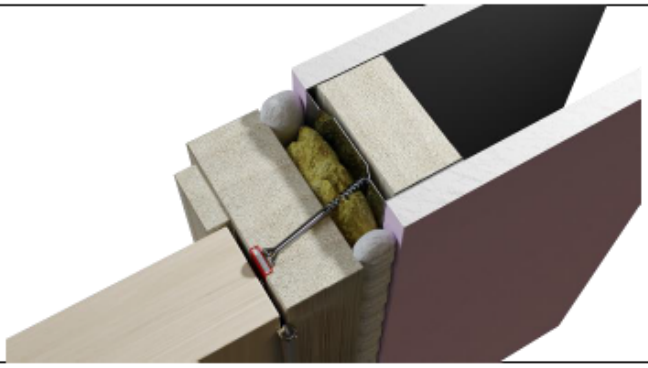
Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold / Bottom edge of the leaf This is the maximum tolerance for fire resistance only.	10mm between bottom of leaf and top of floor covering.

Halspan 120

Firestopping

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

The door frame to structural opening gap must be protected using one of the following methods;

Method 1 Fire Foam Gaps up to 20mm may be filled with tested fire rated foam such as Fire & Acoustic Fire Door Foam or STS ST99 foam successfully tested for 120 minutes, and once set, 10mm deep scraped out of the foam to allow 10mm depth capping of Fire & Acoustic Intumescent Acrylic Sealant or ST88 mastic both successfully tested for 120 minutes applied over the foam on both faces. Architraves are not required. This design was tested in report CFR1911291 with a timber frame and plastic packers. This fire stopping detail has been successfully tested for 120 minutes in fire resistance integrity in report CFR1911291.	
Method 2 Mineral Fibre Gaps up to 15mm may be tightly packed with mineral fibre, capped on both sides with a 15mm depth of acrylic intumescent mastic. Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. An MDF architrave measuring 45 wide x 18mm thick must be used. This fire stopping detail has been successfully tested for 120 minutes in fire resistance integrity in report BMT/FEP/F15069A.	

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 90 minutes fire resistance.

Halspan 120

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

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

It must therefore be capable of staying in place and intact for a minimum of 120 minutes.

Stredor 30/60

Installation Instructions for Stredor 30 44mm & 54mm

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

Frame Material:

Permitted Material
Hardwood

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

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

Timber Based Frames:

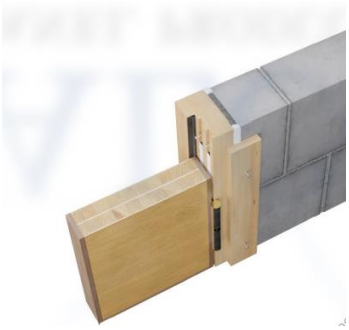
- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

A: without Frame Extension

B: With Frame Extension

Blockwork Supporting Construction: Installation Detail



A: Without Frame Extension

B: With Frame Extension

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

Stredor 30/60

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm) Requirement

0 – 5 this should not occur as it is practically not possible to apply a firestopping material into a gap of this size.

If unavoidable the following must be applied:
A 30x2mm strip of graphite fixed to back of the frame located central to the frame rebate and capped with intumescent mastic.

5 – 10 must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Based on the test evidence the use of architraves is optional.

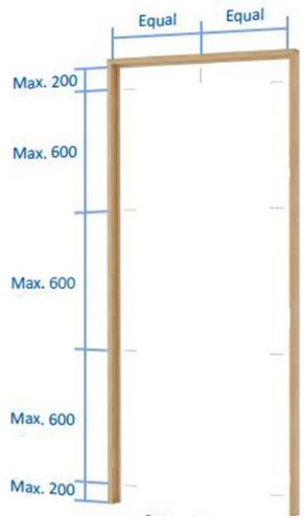
10 – 20 must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.

Over 20 this would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows:

- Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.
- The subframe to door frame gap filled as above.

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.



Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Stredor 30/60

Masonry, Concrete & Solid Blockwork

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes ensuring a minimum of 6mm for flat lipping and 8m for rounded lipping

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

10mm between bottom of leaf and top of floor covering. (See section 14 for gap details with reference to smoke control)

Moralt 30/60

Installation Instructions for Moralt Cores

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

Frame Material:

Permitted Material
Softwood, Hardwood, MDF

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

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

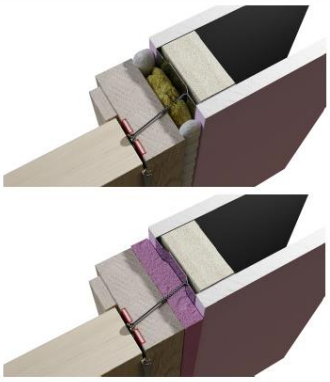
Timber Based Frames:

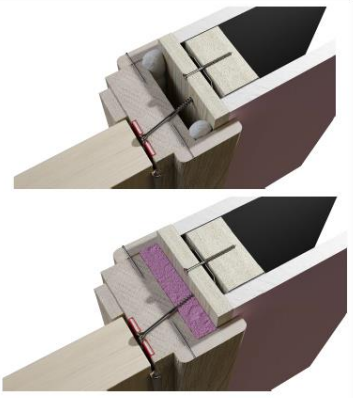
- Plasterboard clad timber stud partitions
- Plasterboard clad steel stud partitions including timber lining.
- Masonry constructions.

The following information contains permitted fire stopping details.

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates.

The table below provides the requirements based upon the gaps size.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Gap (mm)	Requirement	3D model depiction
Over 20	This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Fixings

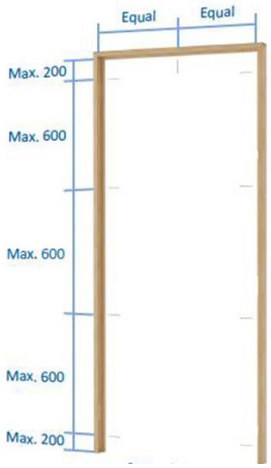
In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset, the frame jambs only are to be fixed to the supporting construction using steel fixings at

Moralt 30/60

600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

Fixity

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum 6mm is maintained.

Onsite trimming of PVC facings or edge protectors is not permitted.

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

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

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset
For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Door Gaps

Door gaps and alignment tolerances must fall within the following range: A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm.

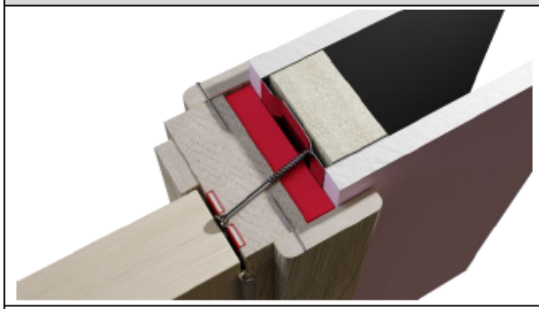
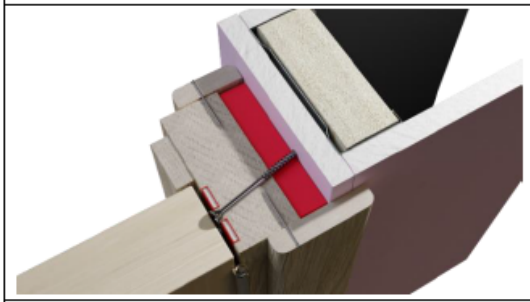
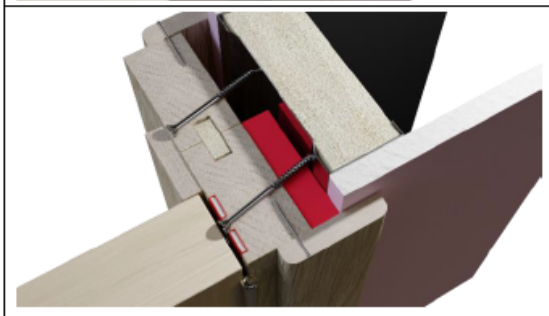
Threshold / Bottom edge of the leaf.

8mm between bottom of leaf and top of floor covering. (for 30, 10mm is permitted)

Moralt 30/60

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

- For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.
- For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.

Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the firestopping section of this report.
	Instances where the wall thickness is greater than the door frame depth. In this scenario timber architraves of minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
	Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.

The drawings are provided as a generalised illustration of the door frame installation only.

XT30/IT30 Cores

Installation Instructions for XT/IT30

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

Frame Material:

Permitted Material
Hardwood

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

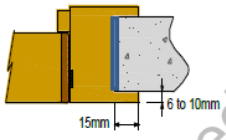
The following details which wall type the frame can be installed into.

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

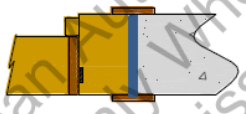
Permitted Installations



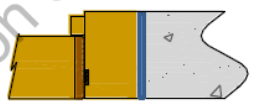
6-10mm is the maximum a frame is permitted to be proud of the structural surround when combined with a 15mm bolection return. Projecting frames outside these dimensions will require specific test evidence or assessment.

Max 10 x 10mm shadow gap with 2mm intumescent mastic capping or 10 x 4mm PVC encased intumescent seal

Shadow gaps are permitted as shown in the above diagram providing the frame to structural surround junction is infilled with timber of the same density as the frame or a non-combustible material such as plasterboard. Other shadow gap dimensions will require specific test evidence or assessment.

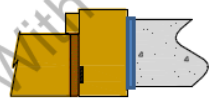


Architraves overlapping the frame to structural surround junction are always permitted where required but may be mandatory depending on the size of frame to surround junction gap and the fire stopping used. See section 16.

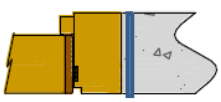


Depending on the size of the frame to surround junction gap and the fire stopping methods used, it may be permitted to install doorsets without architraves. See section on Sealing to the Structural Surround.

Installations Not Permitted



Unless the frame thickness is increased to include the thickness of a bolection return, (i.e. 47mm) projecting frames without bolection returns are not permitted without specific test evidence or assessment due to the potential for increased charring to the back of the frame.



Quirks between the leaf and frame are not permitted without specific test evidence or assessment due to the potential for increased charring of the leaf to frame gap.

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

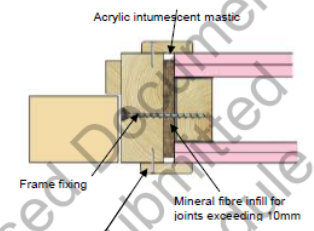
Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

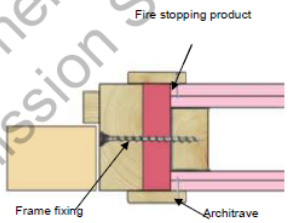
Door Frame to Supporting Structure Fire Stopping Specification

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.

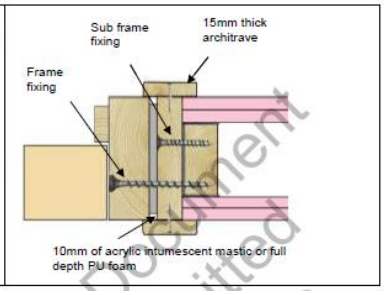
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.



3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.



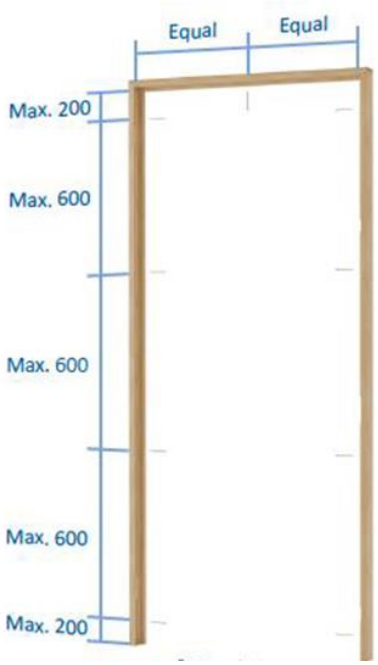
4. Timber based or non-combustible subframe up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.

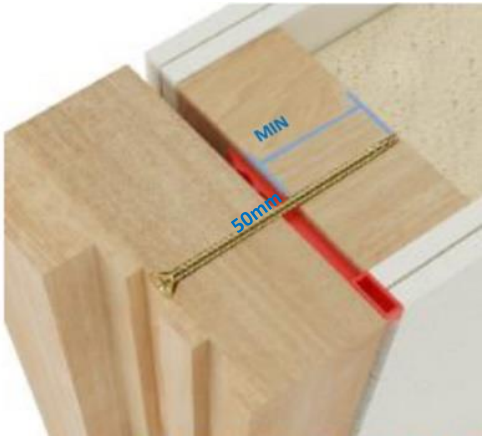


XT30/IT30 Cores

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period.

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes.

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

10mm between bottom of leaf and top of floor covering.

Flamebreak 30/60 FEA/98164/ FEA/F20141

Installation Instructions for Flamebreak 30/ 60 Fire Doors and Doorsets

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

Frame Material:

Material	*Minimum Density (KG/M3)*
Softwood *Hardwood*	*30:450/60* *640*

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

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

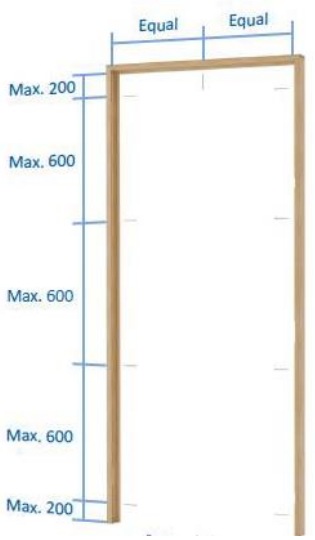
The following information contains permitted fire stopping details.

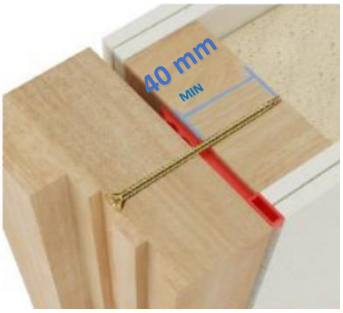
- The architrave must have a minimum thickness of 15mm for 30 and 18mm for 60 Doorsets.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

Flamebreak 30/60 FEA/98164/ FEA/F20141

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum 6mm is maintained.

Appendix A & Appendix B

These sections consider the installation of the different types of frames and doorset.

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

The following tables detail permitted fire stopping details.

The timber architrave must be a minimum of 15mm (30) or 18mm thick (60). Architrave to be mechanically fixed in place.

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

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

Flamebreak 30/60 FEA/98164/ FEA/F20141

APPENDIX A. Flamebreak 30 The following tables detail which wall type and Firestopping for the **Flamebreak 30**

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

Mineral Rock Fibre and Mastic with Architraves

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

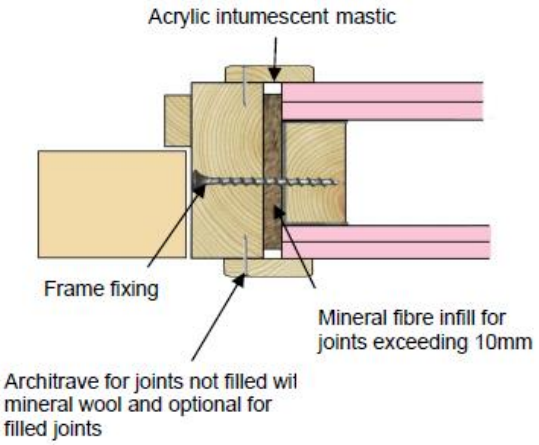
Non-Combustible subframe with mastic or Foam with architraves

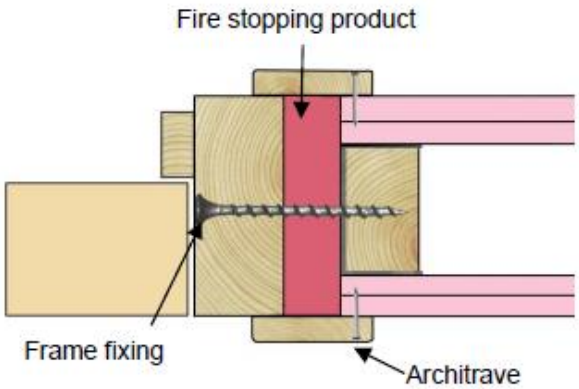
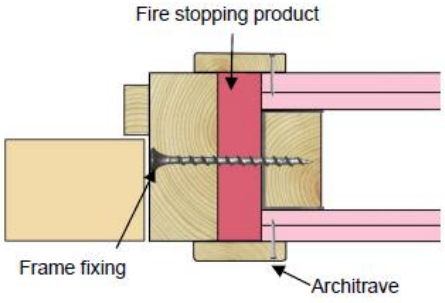
Wall construction	Steel & Timber stud / masonry	
Architrave	15mm thick overlapping 15mm each side	
Linear gap joint seal	Non-combustible sub frame up to 50mm with foam or mastic filling gaps upto 5 to 10mm.	
Maximum gap size	Over 20mm (10mm once sub frame is applied)	

Flamebreak 30/60 FEA/98164/ FEA/F20141

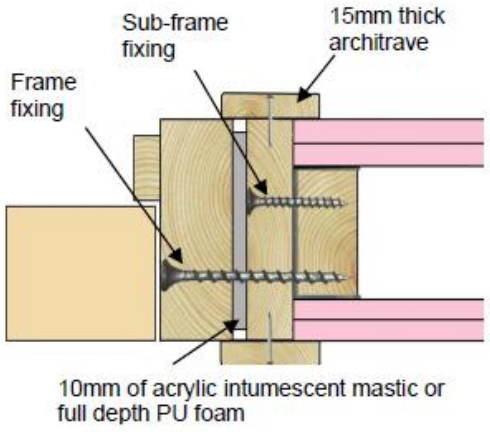
APPENDIX B – Flamebreak 60

The following tables detail the Fire Stopping Detail for **Flamebreak 60.**

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at least 15mm each side	
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at least 15mm each side.	

3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
4. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at	

Flamebreak 30/60 FEA/98164/ FEA/F20141

least 15mm each side. 5. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

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

Specific fire stopping solutions.

Based on test evidence the following fire stopping solutions are considered appropriate.

Sealed Tight Solutions Ltd

- ST88 intumescent mastic
- Mineral Fibre
- ST99 fire foam
- ST99 Expanding foam.

Large Gaps

- Timber or non-combustible sub frame bedded on wall with ST88 and gap between sub frame and frame filled with ST99. Gap between frame and sub frame 25mm. Overall gap 60mm max

Fire and Acoustic Seals Ltd

- Intumescent mastics
- Expanding foam and mastics

Warm Springs 60/90/120

Installation Instructions for Warm Springs 60/90/120 Doorsets

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

Frame Material:

Material	*Minimum Density (KG/M3)*
Hardwood *White Oak*	*640* *840*

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

Door Frame Installation

The following table indicates the acceptable door frame installations.

Permitted Installations
Instances where the door frame and the wall of the same depth. Architraves must be fitted flush to both faces.
Instances where the wall thickness is greater than the door frame depth. Architraves must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
Split frames are permitted to increase the depth of the frame to match the thickness of the wall such that architraves may be applied flush to both faces. Hardwood & White Oak frames are permitted to have a hardwood extension piece of the same material as the frame applied using either a butt joint or tongue and groove joint, to the closing side of the frame applied with PVA cross linked adhesive as tested for lipping application. The width of the extension piece must match the width of the frame, and the extension piece must be no deeper than 150mm.

The following information contains permitted fire stopping details.

- The architrave must have a minimum thickness of 15mm for 30 and 18mm for 60 Doorsets.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

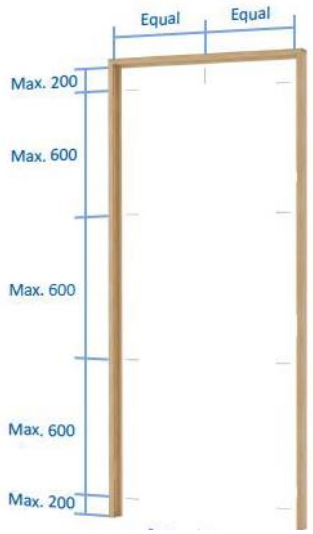
Gap mm	Requirement
0- 2	Not permitted. Gaps must be a minimum of 2mm to the entire perimeter to accept an appropriate quantity of fire stopping material.
2-13	Gap must be tightly packed with mineral fibre and sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 120 minutes integrity. Hardwood architraves of a minimum 18mm thick x 70mm wide must be fitted to both faces, fitted with a minimum 25mm overlap to the door frame.
14-20	Gaps between 14 and 20mm must be tightly packed with mineral fibre and filled on both faces with a minimum of 20mm depth of intumescent mastic that has demonstrated 120 minutes integrity to BS 476: Part 22: 1987 or BS EN 1634-1 (between masonry and timber or mineral composite). The frame to structural opening gap must be covered with a minimum of 18mm thick hardwood architraves overlapping at least 15mm each side.

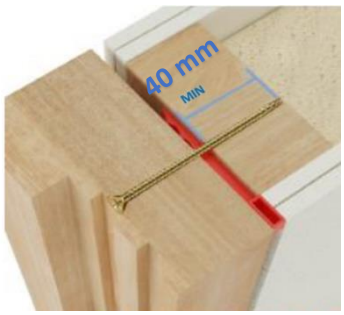
Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.

Warm Springs 60/90/120

Fixings





Packers

Packers must be timber or Tectonite of equal density to the frame or hardwood with a density no less than 640kg/m3. The packers must be cut back in all instances to allow for an appropriate depth of fire stopping to be applied

Wall Types

For walls that remain rigid during fire exposure (brickwork or blockwork, for example) the opening should be square, plumb and provide a flat surface for installation of the doorset.
It is not permitted to install the WSCP doorset design within flexible wall types such as steel and timber stud partitions.
It must therefore be capable of staying in place and intact for a minimum of 60, 90, or 120 minutes (as appropriate to the fire resistance of the doorset).

The supporting construction must also be a suitable medium to permit adequate fixity.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using 5no. steel fixings at 600mm maximum centres and maximum of 200mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using a minimum of 2no. steel fixings at 600mm maximum centres and maximum of 500mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

Onsite Leaf Adjustment

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

The post-production lipping thickness may be reduced by 1mm for fitting purposes

- the requirements for door edge gaps
- the trimming of door edges

Door Gaps

Door Gap & Alignment Tolerance Specification	
Location	**Dimension**
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	10mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only. For Smoke this is reduced to 3mm.

Moralt FireSmoke Cores/ A13059

Installation Instructions for Firesmoke

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

Frame Material:

Permitted Material
Hardwood

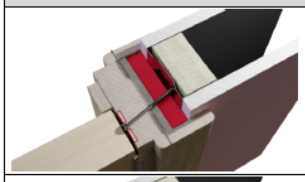
- the door frame and architrave installation position relative to the wall
- the fire stopping between the frame and the wall.
- the fixing requirement including packers.
- the requirements for door edge gaps
- the trimming of door edges

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the firestopping section of this report.
	Instances where the wall thickness is greater than the door frame depth. In this scenario timber architraves of minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
	Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.

The following information contains permitted fire stopping details.

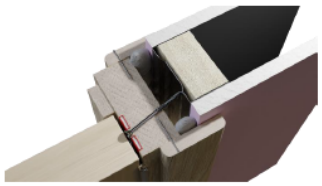
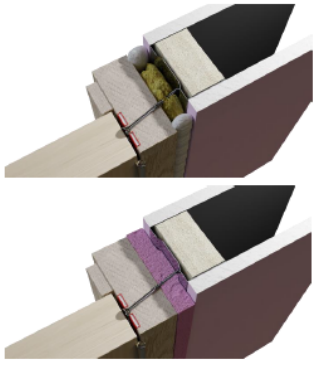
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

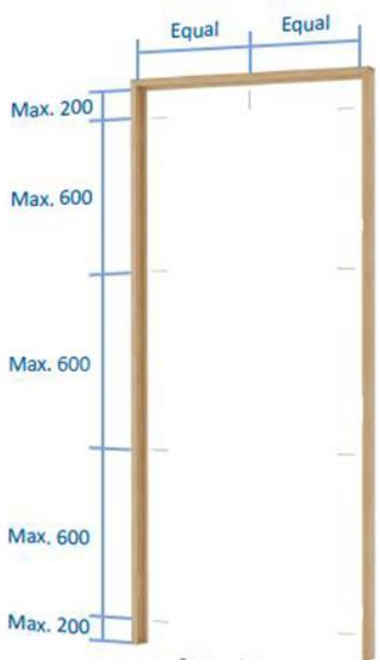
Moralt FireSmoke Cores/ A13059

Fixings

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period.

The following wall types are approved for this doorset design:
a) Plasterboard clad timber stud partitions
b) Plasterboard clad steel stud partitions including timber lining.
c) Masonry constructions.
Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 60 minutes supporting a doorset design.
Wall type c above must be determined to be able to provide at least the same level of fire resistance of the doorset design.
All wall types detailed above shall provide a suitable medium to permit adequate fixity, it is anticipated that for:

- Plasterboard clad timber stud partitions, the timber stud will be of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Plasterboard clad steel stud partitions will include a timber lining of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Masonry constructions are anticipated to be constructed of a solid block or brickwork to receive the fixings.

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

Moralt FireSmoke Cores/ A13059

- The Lipping may be reduced by a maximum of 1mm for fitting purposes.

Post Production (Onsite) Leaf Size Adjustment

The LAMINESSE FireSmoke 54mm range of doorsets may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained. Onsite trimming of PVC facings or edge protectors is not permitted.

Door Gaps

Door gaps and alignment tolerances must fall within the following range:

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold / Bottom edge of the leaf.	8mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only.

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

8 mm between bottom of leaf and top of floor covering.

General Installation Guidelines for Fire Resistant Doorsets.

Overview

Details contained within this document refer to recommended minimum requirements for fire rated finished door leaves and doorsets for installation as supplied by Principal Doorsets. The door leaf and doorsets supplied have been tested in relation to EN 1634, BS 476: Part 22: 1987 and are designated by BM TRADA as achieving fire resistance of to 30, 60, 90 and 120 minutes when installed in accordance with the conditions stated for each type within this manual – subject to this the door will meet the relevant standard when used in accordance with the provisions therein.

Storage

Fire door leaf and doorsets are joinery components and as such, their handling and storage prior to installation should be such that they are protected from rain, sun, and splashing by corrosive or staining materials and preferably in a ventilated building.

Products should ALWAYS be stored in a dry, enclosed location – the relative humidity of the storage area and the final installed location should fall within the range: 40 to 60% RH, Moisture content of our products is 10 to 12% for internal doorsets. Doors/Doorsets stored outside of this range may swell or shrink and distort excessively, will void guarantees, and not perform as specified.

Correct storage on site is essential. Store in a clean, dry area, in the same conditions as are expected when the building is occupied. Cover to protect against dirt and risk of damage from other trades working. The correct storage conditions of Principal Doorsets products are essential to ensure the product performs and appears as specified. Storage and protection of the products on site is the responsibility of the contractor.

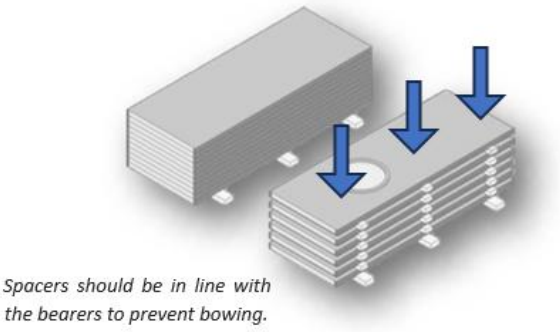
Principal Doorsets products should be stored close to the final installation area or in a location with the same moisture levels to allow the doorsets to acclimatise to the surrounding environment; ideally the products should be stored for 2 to 3 weeks in this location.

The movement in the product to stabilise. But please note even with these steps the doors/doorsets may still need adjusting when the building comes into use, as environmental conditions will change.

Door leaf and doorsets that are clear lacquered or varnished should be subject to storage that protects them from being unevenly exposed to sunlight. Doors must not be stored on underfloor heating as this may cause doors to bow. In addition, door leaf and doorsets must also be protected from exposure to excessive moisture and stored horizontally on 3 or more equally spaced bearers, away from ground floor level. As is applicable it is also recommended that any wrappings be left in place for as long as possible.

Veneered surfaces should not be exposed to strong light or direct sunlight as this may cause differential fading and shrinkage and/or cracking of the veneer.

Store door leaves, doorsets and panels stacked flat and level, on supports. Supports should be timber, covered with plywood or cardboard to avoid marking the door/panel surface, minimum 100mm wide x 50mm deep, across the full width of the door/panel. There should be three such supports, equally spaced, one across the centre and one 300mm from each end.



Spacers should be in line with the bearers to prevent bowing.

Our doors and doorsets are usually despatched to site polythene wrapped, whilst this gives a sensible level of transport protection it must not be deemed as waterproof.

Prime/Seal

To prevent ingress of moisture, doors must be primed and sealed within three days of reaching site, and a second coat applied within a reasonable period thereafter. Both the top and the bottom edges of the door should be sealed. Principal Doorsets label or identifying BM Trada fire plugs should not be painted over or removed.

Heating of the Building

Should be introduced slowly over a long period. To achieve maximum air flow and to reduce the risk of uneven temperature build-up, room must be well ventilated. Doors held open with wedges against a door closer action will induce twist and void any warranty.

Doorsets are not freestanding products, and they will not provide for any design performance, until they have been competently installed into a suitable, sealed, structure.

Adhesive Tape

Should not be applied to the door faces as this could damage the finish on the products, it may also cause a natural veneer to fade or darken non-uniformly as areas of the door will be subjected to different levels of Ultraviolet. Where the doors are subjected to a lot of sunlight, care must be taken as items placed on the face of veneered doors could leave a “silhouette shadow” as the veneer will fade or darken in direct sunlight.

Vision Panels

The recessing and fitting of vision panels by others is not allowed under our BM Trada Q-Mark scheme. Vision panels must be installed within a controlled manufacturing environment. Speak to your Lead Project coordinator for assistance.

Overhead Door Closers

Fit a face fix overhead door closer as per manufacturer’s instructions, and integral door closers if required are to be approved and machined by Principal Doorsets. Integral door closers must be fitted with the intumescent kit supplied with the closer.

Ironmongery

Locks, Keeps, Flush Bolts, door viewers, letterplates, drop seals and Hinges must be fitted with intumescent kits when required by the field of application. Full details of permissible ironmongery are available from your Lead Project Coordinator. Any additional ironmongery to be fitted must be in line with the Field of Application referenced on your Customer Schedule. Strict adherence to the Field of Application must take place or the certification of the product will become invalid.

All Door Closers, Hinges and Locks must be Tested or UKCA/CE marked.

Threshold

Automatic threshold drop seals may be recessed into the bottom edge of leaves in this design without compromising the fire resistance performance. It is preferable for mechanical drop seals to be factory fitted, however there are occasions where they may be fitted on site.

Guidance on which seals can be fitted can be found in the Field of Application referenced on your Customer Schedule.

Overpanel

Overpanels are fitted with sections of door core and are separated from the leaf heads by a transom. The transom required to separate the leaf heads must be to the same specification as the door frame. The over panel must be fixed by screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the panel.

Fixings must be no more that 100mm from each corner and a maximum of 250mm in between.

Please note that steel frame doorsets are not permitted with flush or transomed over panels or sidelights.

Smoke Seals

The intumescent seals may be provided with or without pile or elastomeric fins in order to provide additional performance i.e., smoke, or acoustic control.

Smoke seals or combined intumescent/smoke seals that are fitted to the door have been tested in accordance with the associated test method. Providing the smoke seals, any interruptions, door gaps, and the type/configuration of the doorset are consistent with the detail tested, the doorset will comply with current smoke control legislation under Approved Document B; Any other components installed where smoke leakage may occur must also be taken into account.

Warning: The incorrect fitting of smoke seals may impair the operation of a doorset and therefore compromise the fire resistance performance.

Protection

It is essential to protect the doorsets after they are installed until the handover of the building, our products are late second fix items, but other trades will still be passing through the doorways. The packaging removed from the doors/ doorsets could be reused to

protect the door facings and will give basic protection from paint and dirt etc., however, it is the contractor's responsibility to assess the level of protection required for the doorsets and to provide it.

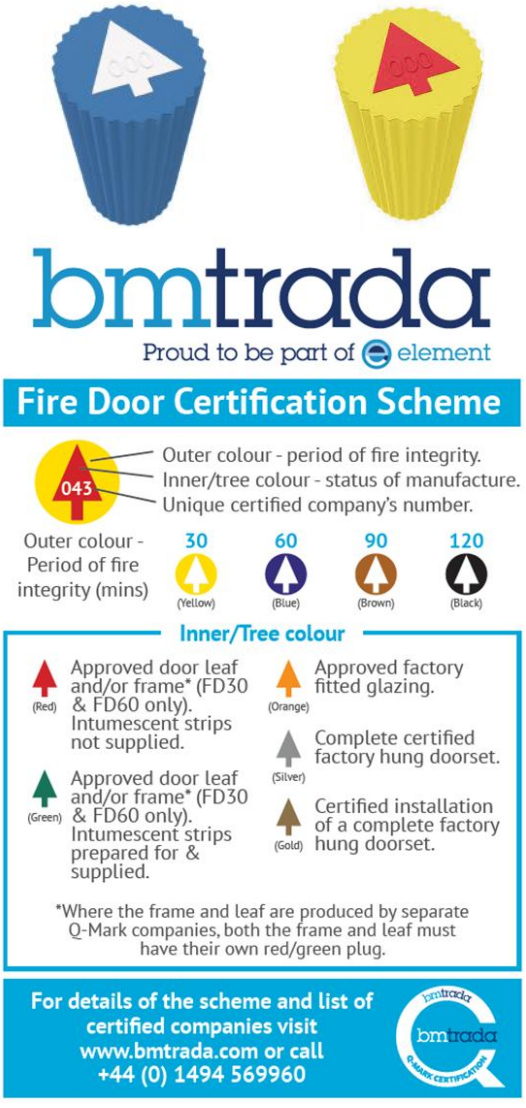
Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum is maintained.

BM TRADA/ Q-MARK Plugs

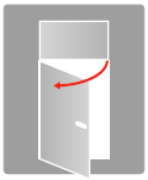
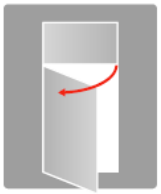
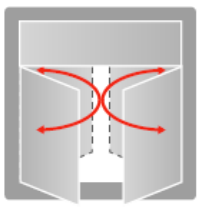
These doorsets/leafs have plastic plugs fitted into the top of the door to confirm the period of fire resistance issued under the BM TRADA Q-Mark certification scheme. Our 30 & 60 doors are plugged on the top edge of the leaf with a coloured outer plug and inner "tree". (See figure 1).

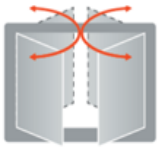


Door Leaf

These doors/sets have been tested as one of the options below.

For maximum sizes, please consult with Principal Doorsets as some sizes have further restrictions.

Doorset Configurations with Overpanels			
A		LSASD+OP	Latched Single Acting Single Doorset with over panel.
B		ULSASD+ OP	Unlatched Single Acting Single Doorset with over panel.
C		DASD+OP	Double Acting Single Doorset with over panel.
G		LSADD+OP	Latched Single Acting Double Doorset with over panel
H		ULSADD+OP	Unlatched Single Acting Double Doorset with over panel.
I		DADD+OP	Double Acting Double Doorset with over panel

Doorset Configurations			
	Depiction	Abbreviation	Description
A		LSASD	Latched Single Acting Single Doorset
B		ULSASD	Unlatched Single Acting Single Doorset
C		DASD	Double Acting Single Doorset
G		LSADD	Latched Single Acting Double Doorset
H		ULSADD	Unlatched Single Acting Double Doorset
I		DADD	Double Acting Double Doorset

Door Gaps

When fitted, the gap between door and frame at the top and side must be between a minimum of 2mm and a maximum of 4mm. Gap at the bottom of the leaf not to exceed 10mm between the bottom of the door leaf and the top of the floor covering. Alignment tolerance: the leaf must not be proud of the frame by more than 1mm.

WARNING: Failure to fit correctly will invalidate not only door functionality but will also invalidate the fire/smoke certification.

Installer

It is strongly recommended that the installer is a member of a recognised third-party fire door installer scheme to ensure that best practice is used. Installers should be familiar with the content of BS 8214: 2016 - Code of practice for fire door assemblies and the standard BS EN 1634 for pedestrian doorsets.

In respect of fire doors, inspection authorities may require evidence that the installation process complies with the tested specification including:

- Intumescent systems.
- Compliance of the glazing with the tested detail supplied by the door leaf manufacturer.
- The size of all operating gaps.
- Intumescent protection around hardware and the quality of the preparations.
- The quality of the supporting construction and the prepared opening.
- The fixing of the fire door.
- Fire and smoke stopping methods used in fitting-in gaps and voids.

Installation

If an installed doorset is difficult to operate, users of the building may disable elements of a doorset based on user convenience, this has consequential safety risks; for example, wedging the doors in an open position will render the fire doorset ineffective.
The door assemblies supplied are approved to be installed in brick, block, masonry, timber, or steel stud of minimum thickness 75mm, providing at least 30- or 60-minutes fire resistance unless otherwise stated.

Before you Start

Make sure that you have the correct door/doorset in relation to the opening in which it is going to be installed; each product has a unique reference located on the label, which links with the contract drawings and schedules. The door reference number is also marked under the middle hinge in permanent marker in the event the label is damaged. Where doors are stored, this will help you match the correct door and frame later and to minimise site damage.

Structural Opening

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer

Step by step

1. Using the doorset labels and a floor plan identify that you have the right components for the doorset location you are to install.
2. Remove packaging and look out for loose items such as pellets, discs, projecting ironmongery etc. These could be in a box loose with doorsets, or bag secured (taped) to a door or frame reveal.
3. Carefully take out the doors and stack flat on three equally spaced bearers, safely out of the way.
4. Offer the frame into the opening and pack the hanging jamb to make it plumb to both opening and wall face.
5. Fix the hanging jamb making sure that it is plumb both to the structural opening and the wall faces. Make allowances for any floor level discrepancies. For example, if the floor is out of level, it may be possible to keep the hanging jamb above floor screed but still concealed by floor coverings such as carpet.
6. Check and adjust the level of the frame head. Position the second jamb and ensure that it is plumb both ways and parallel to the hanging jamb.
7. Pack and insert two fixings only into the second jamb, and if needed for a pair of doors, the head. This allows adjustments to be made.
8. Hang the door(s) on the hinge recesses and achieve the required clearances by increasing or decreasing the packing thickness. Check alignment to ensure that there is no twist.
9. Fix any loose ironmongery items, door stops or architraves and ensure that this has not put the doors out of alignment. When everything has been adjusted correctly insert the remaining fixings and re-check clearances. The fixings may now be concealed.

General Door Edge Gaps & Alignment Tolerance Specification	
Location	Dimensions
Door Edge Gaps	Minimum 2mm. Maximum 4mm
Alignment Tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	Varies between bottom of leaf and top of floor covering according to doorset. Advice on this will be provided.

Factory Frame Preparation

Frames are presented without being machined for fixing to opening. There are many differing configurations which may render many holes, 'excess to requirement' making the frame appear unsightly. Principal Doorsets offer frames which allow the product to be secured to openings with the securing positions hidden either behind the stop, intumescent seal grooves, or the hinge pockets. The frames can be solid plain lining or once rebated (see drawings below).

Solid Plain Lining (SPL) configuration:

Integral Architrave and planted stop. (ISL) Configuration:

Standard Double Action Configuration:

Once Rebated Lining (ORL) Configuration:

Fixing PVC-Wrapped Timber (Stops/Architraves) to Door Frames

This guidance applies to the installation of PVC-wrapped timber components on frames on-site. It outlines the correct method for fixing PVC-wrapped timber components—such as door stops or architraves—to door frames without causing damage, splitting, or deformation to the PVC finish.

1. Ensure the frame surface is clean and free of debris.
2. Confirm the correct position and orientation for each component.
3. Position the timber on the frame in its final location.
4. Mark fixing points evenly along the length of the component.
5. Maintain consistent spacing to ensure even pressure and prevent bowing.

Drilling Pilot Holes

1. Remove the timber from the frame.
2. Drill pilot holes through the PVC-wrapped timber at each marked fixing point.
    - Ensure clean, straight holes to prevent splitting.

Fixing the Timber to the Frame

1. Realign the timber with the frame, matching drill holes to marked positions.
2. Manually insert the pins.
3. Do **not** use a pin gun —this may crack, split, or deform the PVC wrap.
4. Ensure the component sits flush and straight along the frame.
5. Use a wax stick of the appropriate colour to suit the wrapped timber to fill the pin holes.

INDEX

Warm Springs 60/90/120

Installation Instructions for Warm Springs 60/90/120 Doorsets

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

Frame Material:

Material	*Minimum Density (KG/M3)*
Hardwood *White Oak*	*640* *840*

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

Door Frame Installation

The following table indicates the acceptable door frame installations.

Permitted Installations
Instances where the door frame and the wall of the same depth. Architraves must be fitted flush to both faces.
Instances where the wall thickness is greater than the door frame depth. Architraves must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
Split frames are permitted to increase the depth of the frame to match the thickness of the wall such that architraves may be applied flush to both faces. Hardwood & White Oak frames are permitted to have a hardwood extension piece of the same material as the frame applied using either a butt joint or tongue and groove joint, to the closing side of the frame applied with PVA cross linked adhesive as tested for lipping application. The width of the extension piece must match the width of the frame, and the extension piece must be no deeper than 150mm.

The following information contains permitted fire stopping details.

- The architrave must have a minimum thickness of 15mm for 30 and 18mm for 60 Doorsets.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

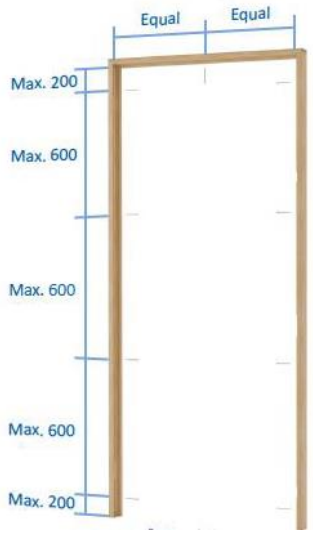
Gap mm	Requirement
0- 2	Not permitted. Gaps must be a minimum of 2mm to the entire perimeter to accept an appropriate quantity of fire stopping material.
2-13	Gap must be tightly packed with mineral fibre and sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 120 minutes integrity. Hardwood architraves of a minimum 18mm thick x 70mm wide must be fitted to both faces, fitted with a minimum 25mm overlap to the door frame.
14-20	Gaps between 14 and 20mm must be tightly packed with mineral fibre and filled on both faces with a minimum of 20mm depth of intumescent mastic that has demonstrated 120 minutes integrity to BS 476: Part 22: 1987 or BS EN 1634-1 (between masonry and timber or mineral composite). The frame to structural opening gap must be covered with a minimum of 18mm thick hardwood architraves overlapping at least 15mm each side.

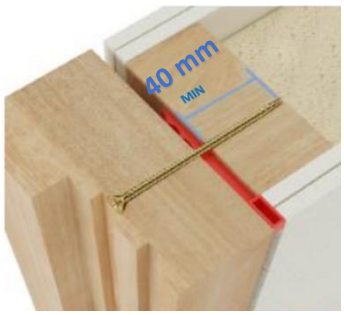
Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.

Warm Springs 60/90/120

Fixings





Packers

Packers must be timber or Tectonite of equal density to the frame or hardwood with a density no less than 640kg/m3. The packers must be cut back in all instances to allow for an appropriate depth of fire stopping to be applied

Wall Types

For walls that remain rigid during fire exposure (brickwork or blockwork, for example) the opening should be square, plumb and provide a flat surface for installation of the doorset.
It is not permitted to install the WSCP doorset design within flexible wall types such as steel and timber stud partitions.
It must therefore be capable of staying in place and intact for a minimum of 60, 90, or 120 minutes (as appropriate to the fire resistance of the doorset).

The supporting construction must also be a suitable medium to permit adequate fixity.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using 5no. steel fixings at 600mm maximum centres and maximum of 200mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using a minimum of 2no. steel fixings at 600mm maximum centres and maximum of 500mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

Onsite Leaf Adjustment

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

The post-production lipping thickness may be reduced by 1mm for fitting purposes

- the requirements for door edge gaps
- the trimming of door edges

Door Gaps

Door Gap & Alignment Tolerance Specification	
Location	**Dimension**
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	10mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only. For Smoke this is reduced to 3mm.

Moralt FireSmoke Cores/ A13059

Installation Instructions for Firesmoke

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

Frame Material:

Permitted Material
Hardwood

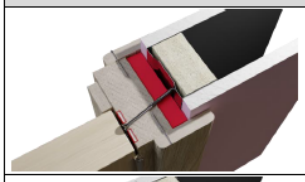
- the door frame and architrave installation position relative to the wall
- the fire stopping between the frame and the wall.
- the fixing requirement including packers.
- the requirements for door edge gaps
- the trimming of door edges

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the firestopping section of this report.
	Instances where the wall thickness is greater than the door frame depth. In this scenario timber architraves of minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
	Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.

The following information contains permitted fire stopping details.

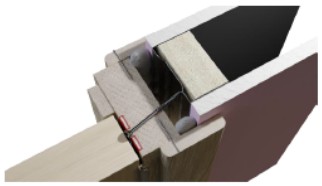
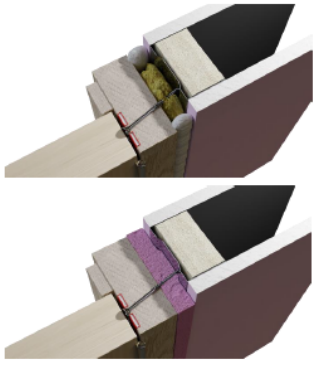
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

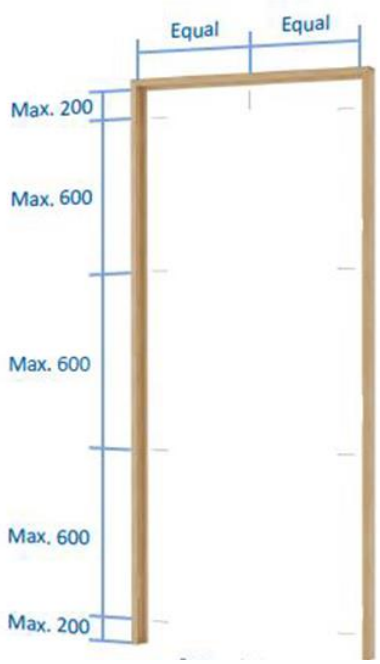
Moralt FireSmoke Cores/ A13059

Fixings

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period.

The following wall types are approved for this doorset design:
a) Plasterboard clad timber stud partitions
b) Plasterboard clad steel stud partitions including timber lining.
c) Masonry constructions.
Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 60 minutes supporting a doorset design.
Wall type c above must be determined to be able to provide at least the same level of fire resistance of the doorset design.
All wall types detailed above shall provide a suitable medium to permit adequate fixity, it is anticipated that for:

- Plasterboard clad timber stud partitions, the timber stud will be of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Plasterboard clad steel stud partitions will include a timber lining of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Masonry constructions are anticipated to be constructed of a solid block or brickwork to receive the fixings.

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

Moralt FireSmoke Cores/ A13059

- The Lipping may be reduced by a maximum of 1mm for fitting purposes.

Post Production (Onsite) Leaf Size Adjustment

The LAMINESSE FireSmoke 54mm range of doorsets may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained. Onsite trimming of PVC facings or edge protectors is not permitted.

Door Gaps

Door gaps and alignment tolerances must fall within the following range:

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold / Bottom edge of the leaf.	8mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only.

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

8 mm between bottom of leaf and top of floor covering.

Strebord 30/60

Installation Instructions for Strebord 30 and 60 Doorsets

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

Frame Material:

Permitted Material
Softwood(30 only), Hardwood, MDF, Postformed

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

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

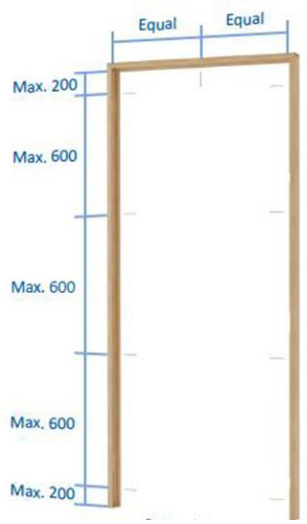
The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.



Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

These are considered as rigid constructions and are solid throughout the depth of the wall and have inherent fire resistance. These walls are denoted as rigid constructions in BS EN 1364 Part 1 as they deflect very little during a fire test. Due to the solid nature of the wall firestopping as detailed above will be adequate. Highly

Strebord 30/60

perforated blockwork is not covered by this category and specific test evidence must be referenced to ensure adequate support during the fire exposure period.

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes.

In the following section the permitted installation for Strebord 30-minute and 60-minute doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

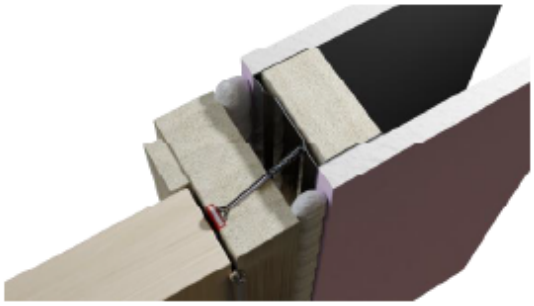
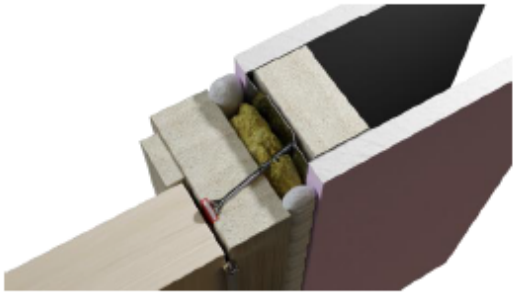
For the generic systems that specific the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Strebord 30/60

Fire Stopping for Strebord 30

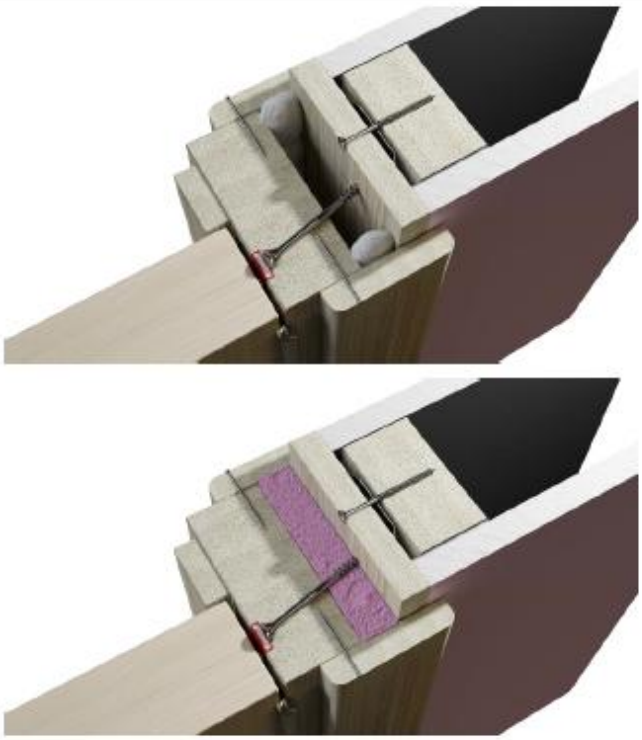
The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick may be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	 

Strebord 30/60 Cores

Strebord 30/60

cont...

Gap (mm)	Requirement	3D model depiction
Over 20	This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick may be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Strebord 30/60 Cores

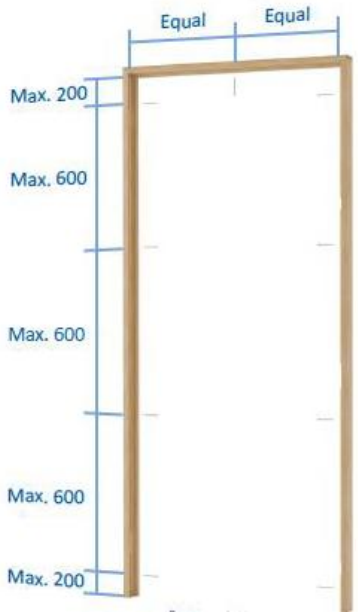
Strebord 30/60

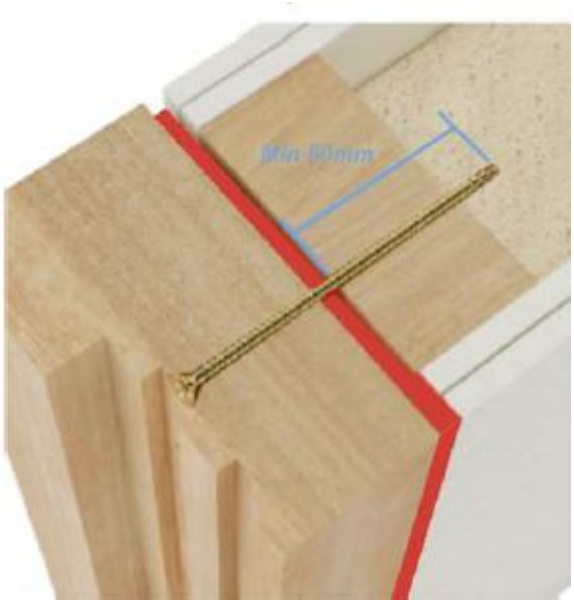
Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.





Strebord 30/60 Cores

Strebord 30/60

The Strebord® 44 & Strebord® 54 range of doorsets may be altered as follows: Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained

Door Gaps

Door gaps and alignment tolerances must fall within the following range: Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Bottom of the Leaf These are the maximum tolerances for fire resistance only.	8mm between bottom of leaf and top of floor covering. The following specific gap requirement, as detailed in section 7.8, takes precedence: Where a timber threshold is installed – 3.5mm between the bottom of the leaf and top of the timber threshold.

Strebord 30/60

Specific fire stopping solutions.

Based on test evidence the following fire stopping solutions are considered appropriate.

Sealed Tight Solutions Ltd

- ST88 intumescent mastic
- Mineral Fibre
- ST99 fire foam
- ST99 Expanding foam.

Large Gaps

- Timber or non-combustible sub frame bedded on wall with ST88 and gap between sub frame and frame filled with ST99. Gap between frame and sub frame 25mm. Overall gap 60mm max

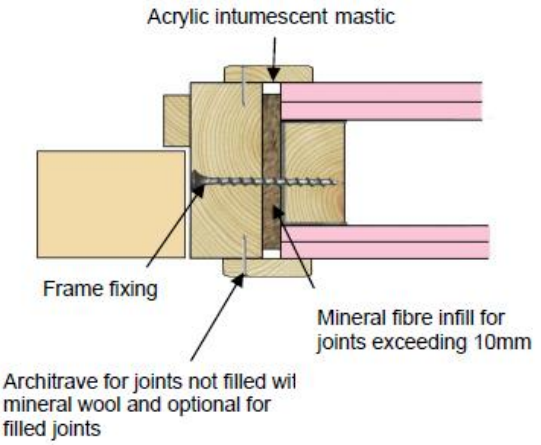
Fire and Acoustic Seals Ltd

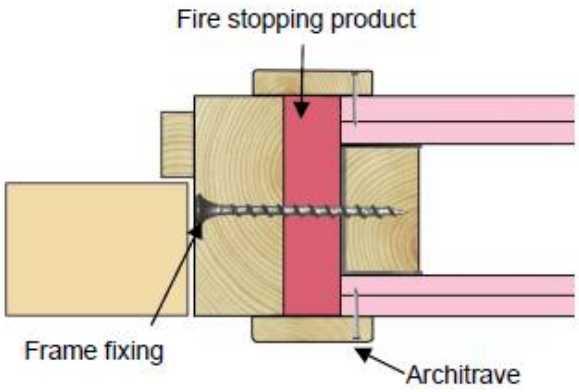
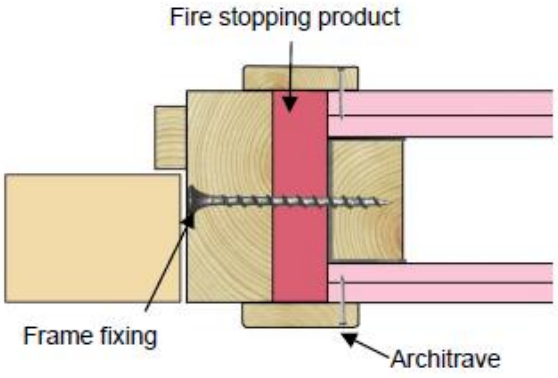
- Intumescent mastics
- Expanding foam and mastics
- Expanding foam with architraves

Strebord 30/60

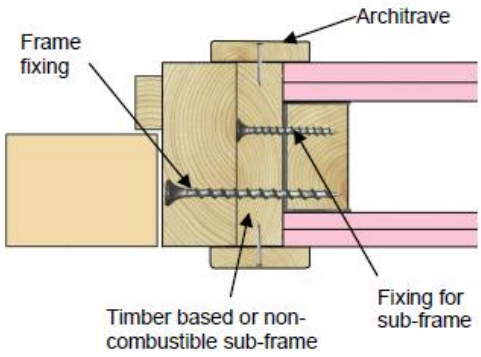
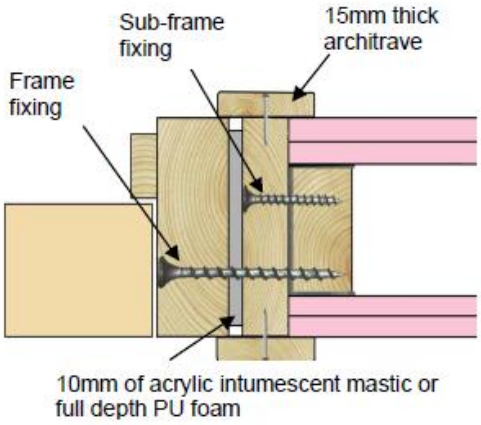
Fire Stopping for Strebord 60

The following tables detail which wall type the Strebord 60 frame can be installed.

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side	
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.	

3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

Strebord 30/60

4. Timber based or non-combustible sub-frame up to 50mm thick, with no gaps between the components. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
5. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

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

Structural Opening

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

Strebord 30/60

PAS 24/Dual Scope

When installing a dual scope doorset with enhanced security features that meet both the PAS 24 standard for security and the BS 476: Part 22:1987 standard for Fire, there are several important considerations to ensure proper installation and compliance.

Installation

As with fire door installation, it is strongly recommended that the installer is a member of a recognised third-party Pas 24 door installer scheme to ensure that best practice is used.

Manufacturer's Instructions

Always refer to the instructions and guidelines for installation and fitting of any items. These instructions are specific to the dual scope PAS 24 doorset you're installing and will ensure proper installation for optimal security and fire performance.

Not following the manufacturers instruction may invalidate the certification.

Approved Hardware

Verify that all hardware used in the installation of your dual scope doorset, including hinges, locks, handles, and any other components, are approved and compliant with PAS 24 standards. Using non-compliant hardware can compromise the security of the doorset.

You will find that all essential hardware has been factory fitted however, some non-essential hardware may be fitted on site. It is critical that only the permitted items are fitted.

Limitations include:

- Door Viewers
- Drop Seals
- Handles
- Cylinders
- Letter plates

Details for items that are permitted are listed within the Field of Application report CNA/F15084 under these headings.

Frame and Structure Compatibility

Verify that the door frame and surrounding structure are compatible with the dual scope PAS 24 doorset. The frame should be sturdy and properly installed to support the weight and security features of the doorset.

Alignment and Fit

Properly align the door within the frame to ensure the fire elements are met and to minimise gaps that could compromise security.

Secure Fixings:

Use appropriate and secure fixings to attach the doorset to the surrounding structure. This includes screws, bolts, and other fasteners that are resistant to tampering or forced entry.

Maintenance:

Regular maintenance is essential to ensure continued performance and security. This includes checking and adjusting components, lubricating moving parts, and repairing any damage promptly.

Strebord 30/60

Report References

1. Strebord 30_Chilt A02066
2. Strebord 60 A02067
3. Strebord Chilt A10152
4. Warm Springs A10152
5. Stredor F15159
6. Stredor/Strebord F15159
7. Strebord/Stredor WF407090
8. Stredor WF377027

Pas 24

Principal Doorsets Ltd - 050 Dual Scope PAS24-22+30min Fire – Strebord/ Stredor D297-001

Principal Doorsets Ltd- 050 Dual Scope PAS24-22+60min Fire - Strebord /Stredor D297-002

Further detail available from your Lead Project Coordinator

Halspan 30/60

Installation Instructions for Halspan 30/60

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

Frame Material:

Frame Material
Softwood (30 only) *Hardwood (excluding beech.)* *MDF (where permitted)*

For limitations refer to report number in the customer schedule.

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

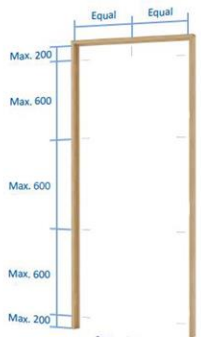
Architrave

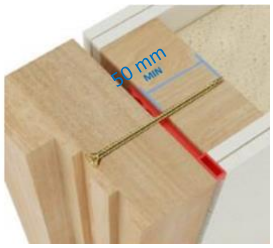
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3 to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Supporting Construction

The supporting construction may be a timber or steel stud plasterboard partition, metal stud demountable partition or masonry wall, but shall be of a type that has been tested or assessed to provide more than 30/60 minutes fire resistance, at the required size, when incorporating 30/60 door assembly openings.

If fitted into timber/steel stud or metal stud demountable partitions, the method of forming the door assembly aperture must be as tested by the partition supplier / manufacturer.

Reference: BS EN 1634-1:2014+A1:2018 - “Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware. Fire resistance tests for doors, shutters, and openable windows".

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum requirement is maintained.

Appendix A and Appendix B, show the permitted installation for Halspan 30 and 60 doorsets.

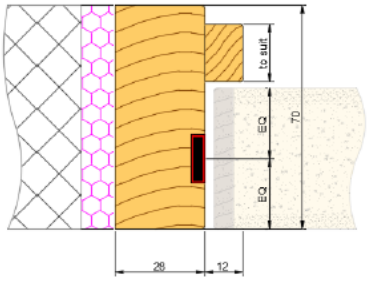
This section considers the installation of the different types of frames and doorset.

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

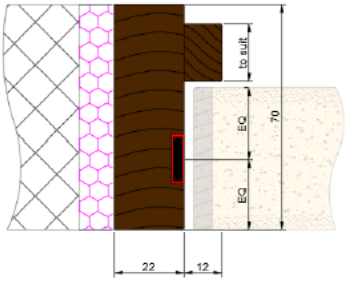
Halspan 30/60

Halspan 30 Installation Detail

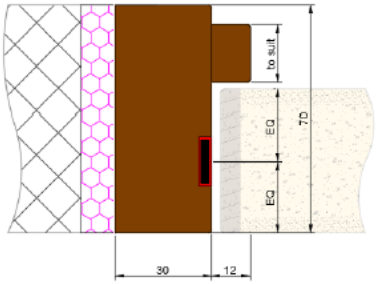
Frame flush to wall with architrave being optional



(A): Frame 1

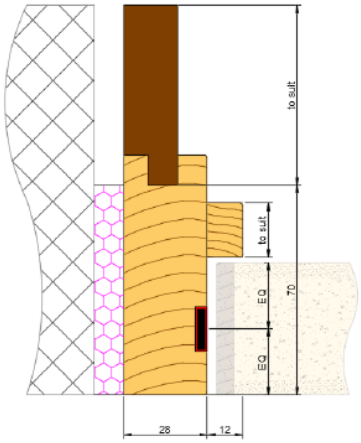


(B): Frame 2

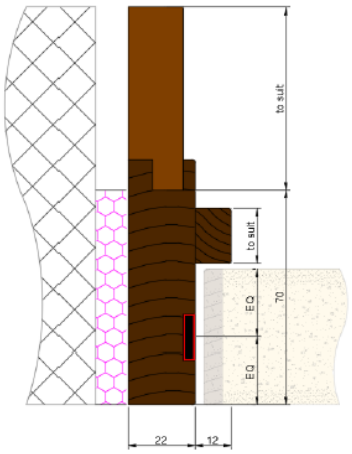


(C): Frame 3

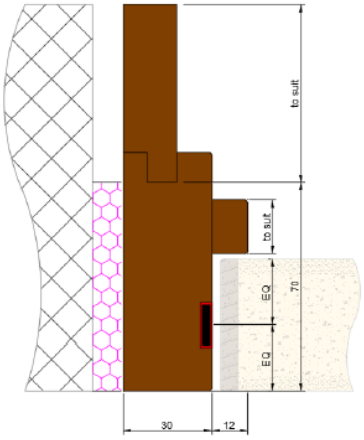
Example of installation detail for frames 1, 2 & 3



(D): Frame 1

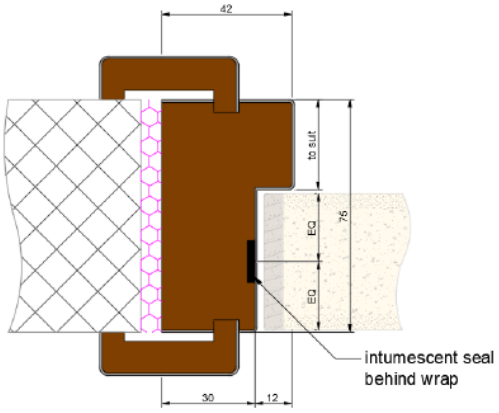


(E): Frame 2

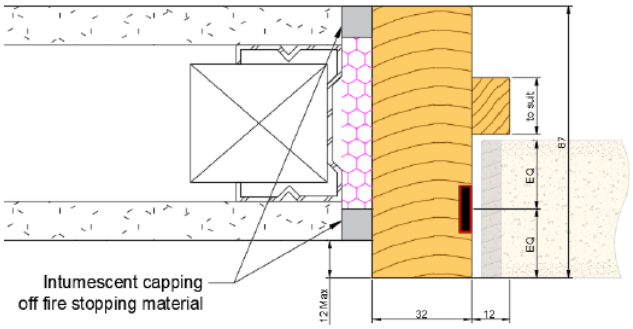


(F): Frame 3

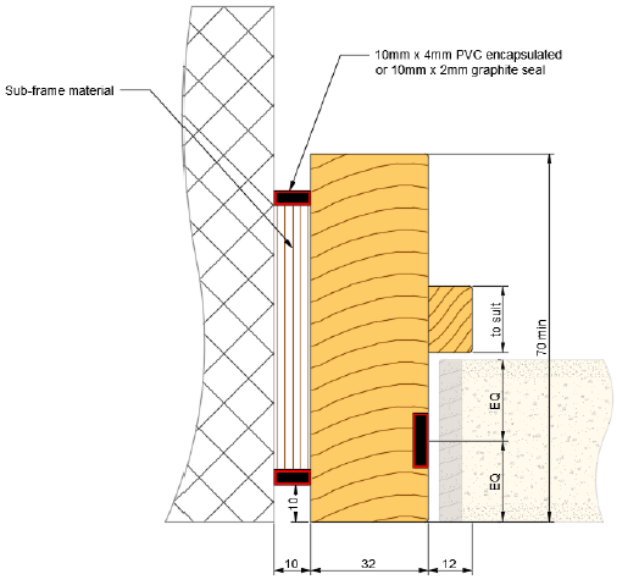
Example of installation details for frames 1, 2 & 3 with MDF/softwood extension liners

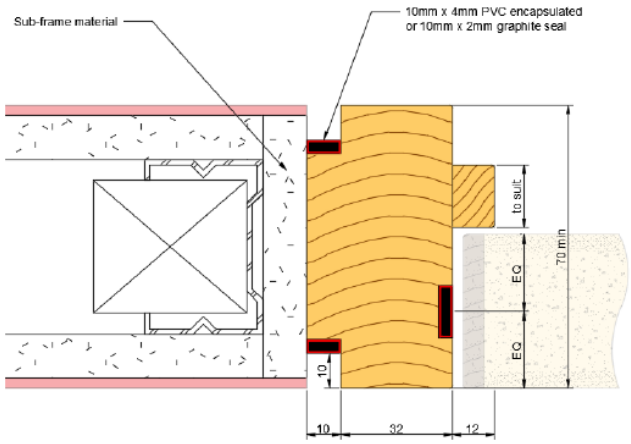


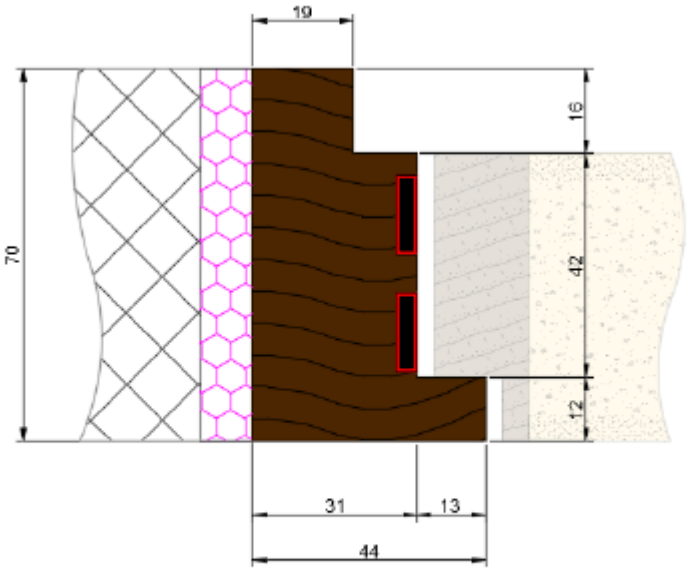
(B): Frame 4 with integral (rebated) stop



Halspan 30/60







Note: The above drawings assume that the wall aperture is suitably protected so that the effects of the fire cannot affect the wall. If this is not the case the fire stopping must be full depth and the extension liner must be the same width and material as the frame.

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

Halspan 30/60

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

Firestopping Requirements for Halspan 30 Doorsets

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm)	**Requirement**
Up to 10	must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Based on the test evidence the use of architraves is optional.
Up to 20	must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.
Over 20	A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: • Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. . • The subframe to door frame gap filled as above.

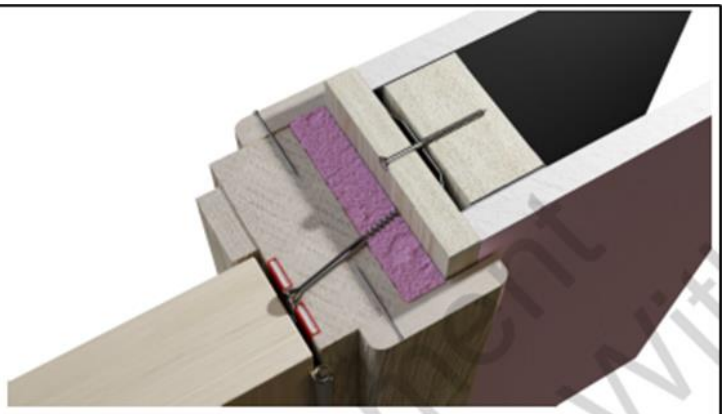
Halspan 30/60

Halspan 60 Installation Guidance

Firestopping Requirements for Halspan 60 Doorsets

Up to 10mm	Sealing type 1 Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
Up to 20mm	Sealing type 2 Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Gaps must be filled full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.	 

Halspan 30/60

Over 20mm Max 50mm	Sealing type 3 A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth	
	of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Not shown on drawing.	

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm)	**Requirement**
Up to 10	must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.
Up to 20	must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.
Over 20	A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows: • Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. • Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap. • The subframe to door frame gap filled as above.

Halspan 30/60

PAS 24/Dual Scope

PAS 24:2016 - Classification 'D'

When installing a dual scope doorset with enhanced security features that meet both the PAS 24 standard for security and the BS 476: Part 22:1987 standard for Fire, there are several important considerations to ensure proper installation and compliance.

Installation

As with fire door installation, it is strongly recommended that the installer is a member of a recognised third-party Pas 24 door installer scheme to ensure that best practice is used.

Manufacturer's Instructions

Always refer to the instructions and guidelines for installation and fitting of any items. These instructions are specific to the dual scope PAS 24 doorset you're installing and will ensure proper installation for optimal security and fire performance.

Not following the manufacturers instruction may invalidate the certification.

Approved Hardware

Verify that all hardware used in the installation of your dual scope doorset, including hinges, locks, handles, and any other components, are approved and compliant with PAS 24 standards. Using non-compliant hardware can compromise the security of the doorset.

You will find that all essential hardware has been factory fitted however, some non-essential hardware may be fitted on site. It is critical that only the permitted items are fitted.

Limitations include:

- Door Viewers
- Drop Seals
- Handles
- Cylinders
- Letter plates

Details for items that are permitted are listed within the Field of Application report CNA/F15084 under these headings.

Frame and Structure Compatibility

Verify that the door frame and surrounding structure are compatible with the dual scope PAS 24 doorset. The frame should be sturdy and properly installed to support the weight and security features of the doorset.

Alignment and Fit

Properly align the door within the frame to ensure the fire elements are met and to minimise gaps that could compromise security. (*Door Gaps and Alignment, section 1)*

Secure Fixings:

Use appropriate and secure fixings to attach the doorset to the surrounding structure. This includes screws, bolts, and other fasteners that are resistant to tampering or forced entry.

Halspan 30/60

Maintenance:
Regular maintenance is essential to ensure continued performance and security. This includes checking and adjusting components, lubricating moving parts, and repairing any damage promptly.

Report References:

Chilt/A01204 Part 1 Optima 30

Chilt/A01015 Prima 60

FEA/F97097 Prima/Optima 30

FEA/F97174 Prima 30

FEA/F01205 Optima 60

FEA/F96103 Prima 60

Chilt/A13227 IT/XT 60

Chilt/ A13242 XT/IT 30

Downloadable from: https://halspan.com/products/

Pas 24

Principal Doorsets Ltd - 050 (D259-002) PAS24+16
Halspan Single Door - Iss 3

Principal Doorsets Ltd - 050 (D259-003) PAS24+16
Halspan Double Door - Iss 3

Further detail available from your Lead Project Coordinator

Halspan 90

Installation Instructions for Halspan 90

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

Frame Material:

Material
Hardwood

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

Timber Based Frames:

- a) Plasterboard clad timber stud partitions
- b) Plasterboard clad steel stud partitions with timber lining
- c) Masonry constructions

Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 90 minutes supporting a doorset design.

Wall type c above must be determined to be able to provide at least the same level of fire resistance of the doorset design. _

Door Frame Installation

In all instances, the door frame must be fully contained within the thickness of the supporting structure.

Furthermore, when fitted within a masonry construction as detailed in section 10.5 the entire thickness of the leaf and frame shall be within the thickness of the masonry element.

Where the thickness of the supporting structure is greater than the depth of the door frame and architrave is applied, it is permitted to fit the architrave such that it overlaps the door frame and abuts the structural opening to conceal the firestopping gap.

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

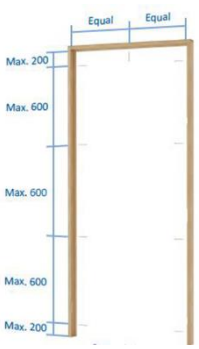
Guidance for various methods of sealing the frame to structural opening gap is also given in BS 8214: 2016, “Code of practice for fire door assemblies”, which may be referred to where applicable.

Fixings

The fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.
For single leaf doorsets, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.
For double leaf doorsets, the upper horizontal framing section abutting the structural opening must also be secured to the supporting construction using steel fixings at either:

- 600mm maximum centres and maximum of 150mm from corner or
- 1No. fixing applied nominally central to the width of the frame head.

The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Halspan 90

Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained.

In the following section the permitted installation for Halspan 30 and 60 doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

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

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

Door gaps and alignment tolerances must fall within the following range:

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	8mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only. (WF384941 AR1)

Halspan 90

Firestopping

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

Gap (mm)	Method
Up to 20	Tightly packed with rock or stone based mineral fibre, capped on both sides with a 10mm depth of acrylic intumescent mastic. Products must have been demonstrated (at the required maximum gap dimension) to achieve 90 minutes fire resistance performance behind a timber frame to BS 476: Part 22: 1987 or BS EN 1634-1. Mineral fibre capped with intumescent mastic has been proven via test evidence for the Halspan® 90 doorsets in test report WF372528 and WF386186 A. Architraves of the same tested material type and dimensions must be applied if included within the evidence used to support the firestopping medium.
Up to 20	Filled to the full depth with fire resisting foam, once cured, a depth of 10mm from each face removed and refilled with intumescent mastic. Products must have been demonstrated (at the required maximum gap dimension) to achieve 90 minutes fire resistance performance behind a timber frame to BS 476: Part 22: 1987 or BS EN 1634-1 when used in conjunction with each other. (i.e. the foam and mastic must have been tested together). Architraves of the same tested material type and dimensions must be applied if included within the evidence used to support the firestopping medium. Dennard Polyurethane expanding foam, DI-PU0912 in conjunction with Tremco Illbruck Nullifire FS702 Intumescent Acrylic Sealant has been tested in the manner detailed above (UB128-1A). Based on the testing, this combination may be used up to a maximum width of 10mm. When this method and combination is applied architraves are optional as none were fitted in the testing undertaken.

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 90 minutes fire resistance.

Halspan 90

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.

Halspan 120

Installation Instructions for Halspan 120

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

Frame Material:

Material
Hardwood

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

Timber Based Frames:

Rigid & Flexible Wall Types

May be used within rigid and flexible supporting constructions.

For walls that remain rigid during fire exposure (brickwork or blockwork, for example) the opening should be square, plumb and provide a flat surface for installation of the doorset.

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer. Flexible wall types must have supported fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 120 minutes supporting a doorset design.

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

It must therefore be capable of staying in place and intact for a minimum of 120 minutes

Door Frame Installation

In all instances, the door frame must be fully contained within the thickness of the supporting structure.

Furthermore, when fitted within a masonry construction as detailed in section 10.5 the entire thickness of the leaf and frame shall be within the thickness of the masonry element.

Where the thickness of the supporting structure is greater than the depth of the door frame and architrave is applied, it is permitted to fit the architrave such that it overlaps the door frame and abuts the structural opening to conceal the firestopping gap.

The following information contains permitted fire stopping details.

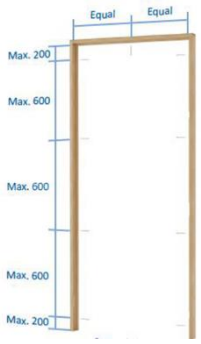
- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

The frame jambs are to be fixed to the supporting construction using 5mm x 100mm long steel screws, spaced at a maximum 600mm centres and 150mm from the top and bottom. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.



Halspan 120

Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Halspan ® 120 range of doorsets may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	A closing bevel can be applied to the leaf edge to assist with onsite fitting of the leaf, provided no more than 1mm of the lipping is removed from the first 50% of the leaf thickness. On double doors this bevel can be applied to both leaves and on both faces provided the gap between the seals and the opposing leaf edge does not exceed the maximum of 4mm

In the following section the permitted installation for Halspan 120 Doorsets can be found.

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

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

The following tables detail permitted fire stopping details.

The architrave can be MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

For the generic systems that specific the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset. Fire & Acoustic Intumescent Acrylic Sealant or ST88 mastic have both been both successfully tested for 120 minutes applied over the foam on both faces.

Fire & Acoustic Fire Door Foam or STS ST99 foam have been successfully tested for 120 minutes.

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

Door gaps and alignment tolerances must fall within the following range:

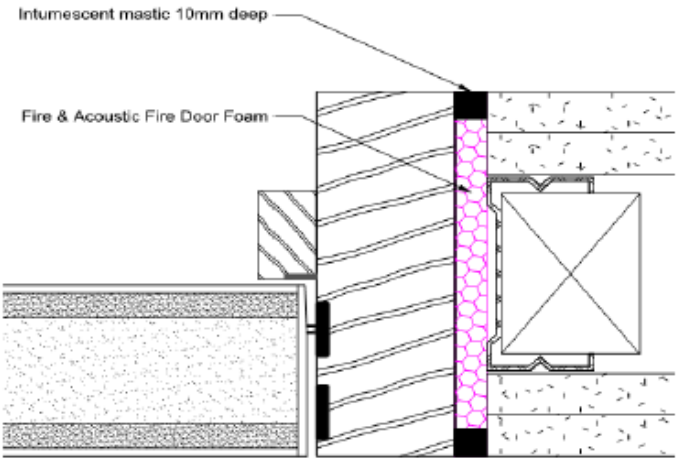
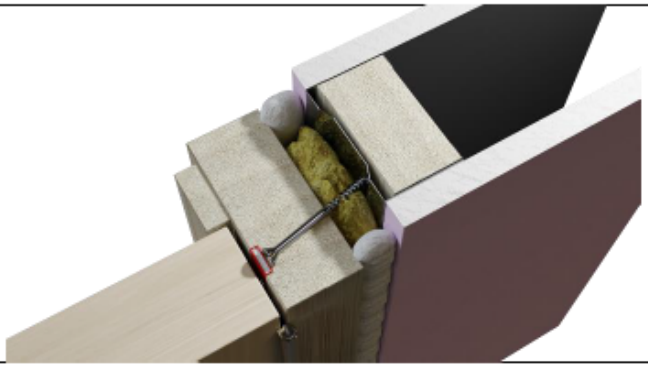
Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold / Bottom edge of the leaf This is the maximum tolerance for fire resistance only.	10mm between bottom of leaf and top of floor covering.

Halspan 120

Firestopping

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

The door frame to structural opening gap must be protected using one of the following methods;

Method 1 Fire Foam Gaps up to 20mm may be filled with tested fire rated foam such as Fire & Acoustic Fire Door Foam or STS ST99 foam successfully tested for 120 minutes, and once set, 10mm deep scraped out of the foam to allow 10mm depth capping of Fire & Acoustic Intumescent Acrylic Sealant or ST88 mastic both successfully tested for 120 minutes applied over the foam on both faces. Architraves are not required. This design was tested in report CFR1911291 with a timber frame and plastic packers. This fire stopping detail has been successfully tested for 120 minutes in fire resistance integrity in report CFR1911291.	
Method 2 Mineral Fibre Gaps up to 15mm may be tightly packed with mineral fibre, capped on both sides with a 15mm depth of acrylic intumescent mastic. Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. An MDF architrave measuring 45 wide x 18mm thick must be used. This fire stopping detail has been successfully tested for 120 minutes in fire resistance integrity in report BMT/FEP/F15069A.	

Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 for 90 minutes fire resistance.

Halspan 120

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Fixity

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

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

It must therefore be capable of staying in place and intact for a minimum of 120 minutes.

Stredor 30/60

Installation Instructions for Stredor 30 44mm & 54mm

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

Frame Material:

Permitted Material
Hardwood

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

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

Timber Based Frames:

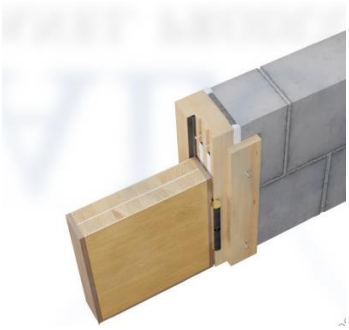
- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

A: without Frame Extension

B: With Frame Extension

Blockwork Supporting Construction: Installation Detail



A: Without Frame Extension

B: With Frame Extension

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

Stredor 30/60

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm) Requirement

0 – 5 this should not occur as it is practically not possible to apply a firestopping material into a gap of this size.

If unavoidable the following must be applied:
A 30x2mm strip of graphite fixed to back of the frame located central to the frame rebate and capped with intumescent mastic.

5 – 10 must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Based on the test evidence the use of architraves is optional.

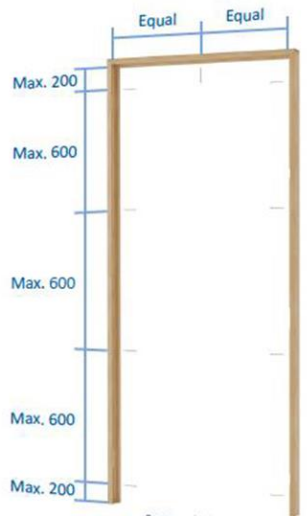
10 – 20 must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.

Over 20 this would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows:

- Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.
- The subframe to door frame gap filled as above.

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.



Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Stredor 30/60

Masonry, Concrete & Solid Blockwork

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes ensuring a minimum of 6mm for flat lipping and 8m for rounded lipping

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

10mm between bottom of leaf and top of floor covering. (See section 14 for gap details with reference to smoke control)

Moralt 30/60

Installation Instructions for Moralt Cores

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

Frame Material:

Permitted Material
Softwood, Hardwood, MDF

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

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

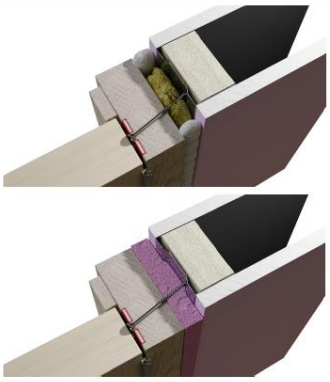
Timber Based Frames:

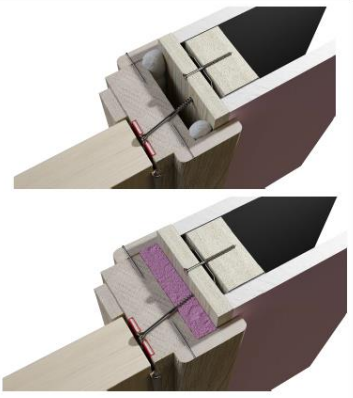
- Plasterboard clad timber stud partitions
- Plasterboard clad steel stud partitions including timber lining.
- Masonry constructions.

The following information contains permitted fire stopping details.

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates.

The table below provides the requirements based upon the gaps size.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Gap (mm)	Requirement	3D model depiction
Over 20	This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows: Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 15mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Fixings

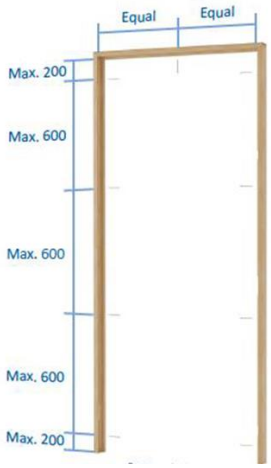
In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

For single leaf doorset, the frame jambs only are to be fixed to the supporting construction using steel fixings at

Moralt 30/60

600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.



Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

Fixity

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum 6mm is maintained.

Onsite trimming of PVC facings or edge protectors is not permitted.

The following tables detail permitted fire stopping details.

The architrave can be softwood minimum density 500 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.

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

Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset
For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

Door Gaps

Door gaps and alignment tolerances must fall within the following range: A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm.

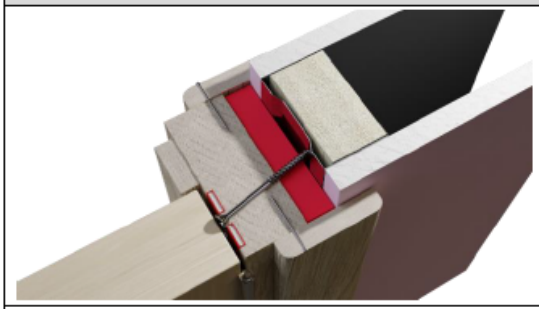
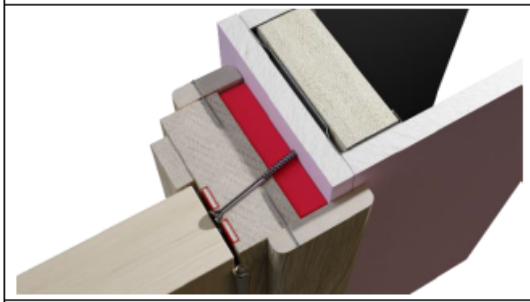
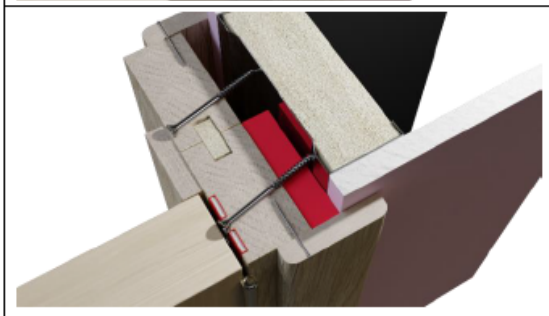
Threshold / Bottom edge of the leaf.

8mm between bottom of leaf and top of floor covering. (for 30, 10mm is permitted)

Moralt 30/60

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

- For single leaf doorset without side panels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the adjacent image. It is not necessary to fix the frame head, although packers must be inserted.
- For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm, in the case of timber and steel studs with timber inserts, the fixing is permitted to extend beyond the rear face of the stud as shown in the below image.

Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the firestopping section of this report.
	Instances where the wall thickness is greater than the door frame depth. In this scenario timber architraves of minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.
	Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.

The drawings are provided as a generalised illustration of the door frame installation only.

XT30/IT30 Cores

Installation Instructions for XT/IT30

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

Frame Material:

Permitted Material
Hardwood

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

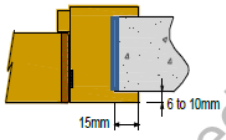
The following details which wall type the frame can be installed into.

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

The following diagrams indicate acceptable door frame/wall installation arrangements.

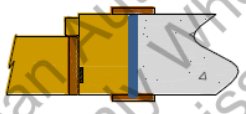
Permitted Installations



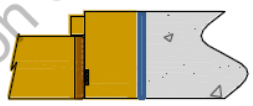
6-10mm is the maximum a frame is permitted to be proud of the structural surround when combined with a 15mm bolection return. Projecting frames outside these dimensions will require specific test evidence or assessment.

Max 10 x 10mm shadow gap with 2mm intumescent mastic capping or 10 x 4mm PVC encased intumescent seal

Shadow gaps are permitted as shown in the above diagram providing the frame to structural surround junction is infilled with timber of the same density as the frame or a non-combustible material such as plasterboard. Other shadow gap dimensions will require specific test evidence or assessment.

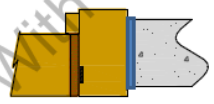


Architraves overlapping the frame to structural surround junction are always permitted where required but may be mandatory depending on the size of frame to surround junction gap and the fire stopping used. See section 16.

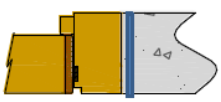


Depending on the size of the frame to surround junction gap and the fire stopping methods used, it may be permitted to install doorsets without architraves. See section on Sealing to the Structural Surround.

Installations Not Permitted



Unless the frame thickness is increased to include the thickness of a bolection return, (i.e. 47mm) projecting frames without bolection returns are not permitted without specific test evidence or assessment due to the potential for increased charring to the back of the frame.



Quirks between the leaf and frame are not permitted without specific test evidence or assessment due to the potential for increased charring of the leaf to frame gap.

The following information contains permitted fire stopping details.

- The architrave can be softwood minimum density 450 kg/m3 or MDF minimum density 600kg/m3. Architrave to be mechanically fixed in place.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22:

1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

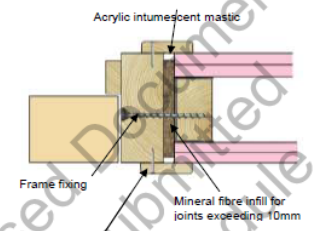
Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

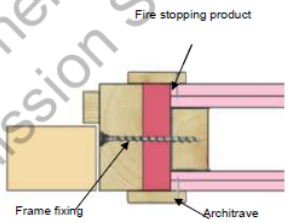
Door Frame to Supporting Structure Fire Stopping Specification

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.

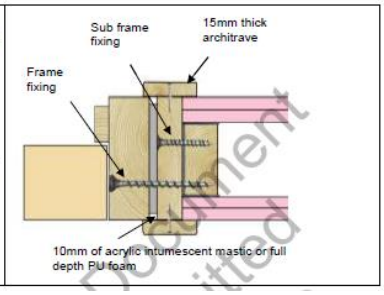
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.



3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.



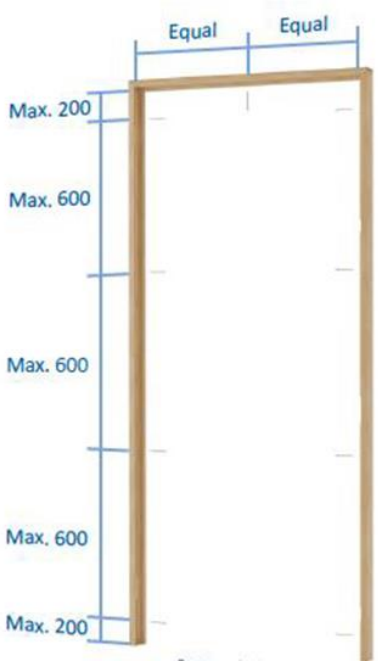
4. Timber based or non-combustible subframe up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joints must be fitted with 15mm thick architraves overlapping at least 15mm each side.

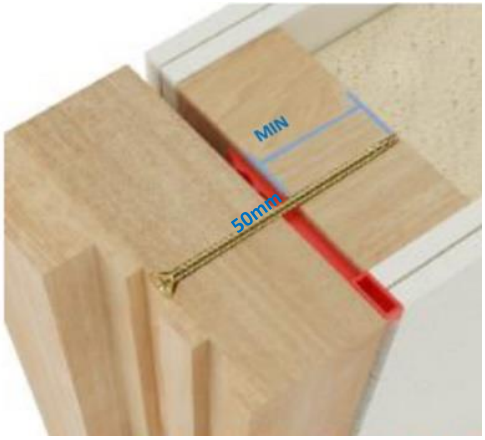


XT30/IT30 Cores

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

Packers can be timber of equal density to the frame or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period.

Bespoke Walls & Partitions

These will require specific test evidence.

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes.

Door Gaps

A minimum of 2mm and a maximum of 4mm

Alignment tolerances

Leaves must not be proud of each other or from the door frame by more than 1mm

Threshold

10mm between bottom of leaf and top of floor covering.

Flamebreak 30/60 FEA/98164/ FEA/F20141

Installation Instructions for Flamebreak 30/ 60 Fire Doors and Doorsets

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

Frame Material:

Material	*Minimum Density (KG/M3)*
Softwood *Hardwood*	*30:450/60* *640*

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

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

Timber Based Frames:

- Masonry Wall
- Timber Stud Partition
- Steel Stud partition

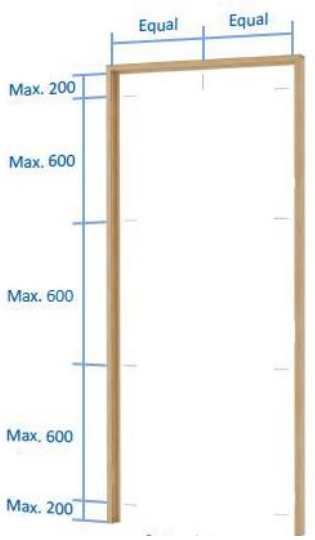
The following information contains permitted fire stopping details.

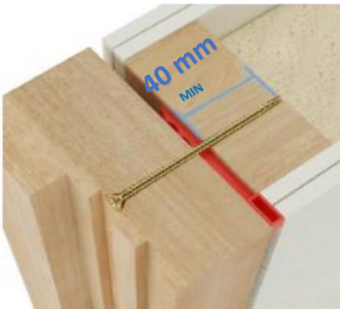
- The architrave must have a minimum thickness of 15mm for 30 and 18mm for 60 Doorsets.
- For the generic systems that specify the application of intumescent mastic, the sealant must have been fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 and shown to provide at least the level of fire resistance required from the doorset.

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

Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.





Packers

These can be timber of equal density to the frame, or plywood, or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

Wall Types

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

Masonry, Concrete & Solid Blockwork

Flamebreak 30/60 FEA/98164/ FEA/F20141

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

Steel Stud Partitions

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

Timber Stud Partitions

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

Onsite Leaf Adjustment

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

The Lipping may be reduced by a maximum of 1mm for fitting purposes but must ensure that the minimum 6mm is maintained.

Appendix A & Appendix B

These sections consider the installation of the different types of frames and doorset.

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

The following tables detail permitted fire stopping details.

The timber architrave must be a minimum of 15mm (30) or 18mm thick (60). Architrave to be mechanically fixed in place.

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

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

Flamebreak 30/60 FEA/98164/ FEA/F20141

APPENDIX A. Flamebreak 30 The following tables detail which wall type and Firestopping for the **Flamebreak 30**

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

Mineral Rock Fibre and Mastic with Architraves

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

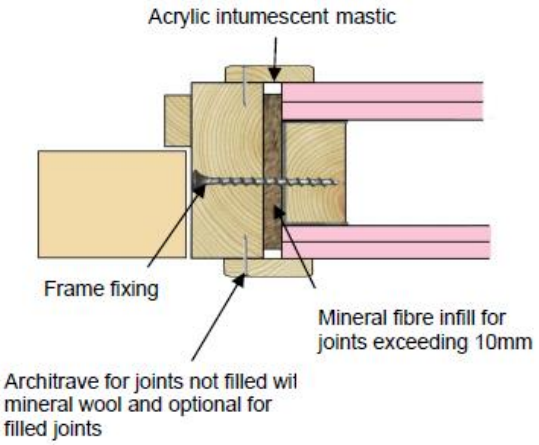
Non-Combustible subframe with mastic or Foam with architraves

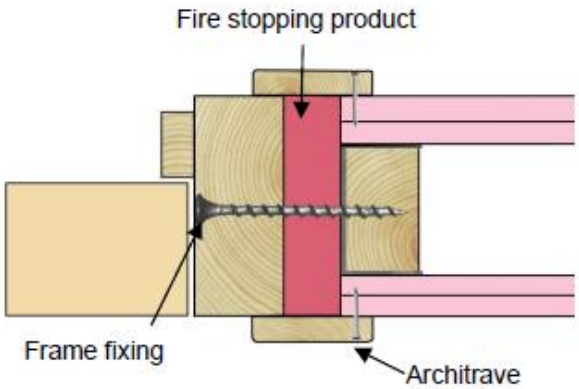
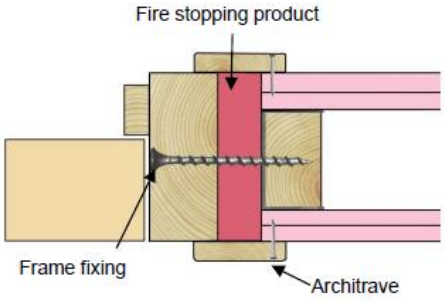
Wall construction	Steel & Timber stud / masonry	
Architrave	15mm thick overlapping 15mm each side	
Linear gap joint seal	Non-combustible sub frame up to 50mm with foam or mastic filling gaps upto 5 to 10mm.	
Maximum gap size	Over 20mm (10mm once sub frame is applied)	

Flamebreak 30/60 FEA/98164/ FEA/F20141

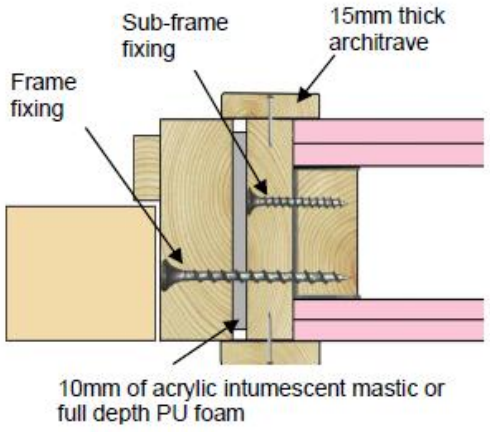
APPENDIX B – Flamebreak 60

The following tables detail the Fire Stopping Detail for **Flamebreak 60.**

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at least 15mm each side	
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at least 15mm each side.	

3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
4. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 18mm thick architraves overlapping at	

Flamebreak 30/60 FEA/98164/ FEA/F20141

least 15mm each side. 5. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

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

Specific fire stopping solutions.

Based on test evidence the following fire stopping solutions are considered appropriate.

Sealed Tight Solutions Ltd

- ST88 intumescent mastic
- Mineral Fibre
- ST99 fire foam
- ST99 Expanding foam.

Large Gaps

- Timber or non-combustible sub frame bedded on wall with ST88 and gap between sub frame and frame filled with ST99. Gap between frame and sub frame 25mm. Overall gap 60mm max

Fire and Acoustic Seals Ltd

- Intumescent mastics
- Expanding foam and mastics