Fire Door Installation:

Door assemblies are complex structures made up of a number of components that must be carefully assembled to meet performance requirements. Door assemblies are not free standing products and they will not provide for any design performance until they have been competently installed into a suitable structure.

The primary purpose of any door assembly is to provide a means for 'traffic' to pass from one side of a wall to the other. To achieve this objective the doors should be easy to use. If the installed door assembly is difficult to operate the users of the building may disable elements of the assembly on the basis of user convenience with consequential safety risks. e.g. by wedging fire doors in an open position.

It is vital that performance door sets are assembled and installed by competent tradesmen and it is strongly recommended that the installer is a member of a recognised quality assurance scheme, such as the 'Q-Mark' Fire Door Installers scheme to ensure that best practice is used.

Installers should be familiar with the content of BS8214 : 2016 - *Timber-based fire door assemblies – Code of practice*. Further guidance can be found by reference to the Architectural and Specialist Door Manufacturers (ASDMA) published Installation Guide that is reproduced by reference to *Section 16 - Appendix 1 & 2 of this manual.*

This section provides for further guidance but does not include for details with regard to any particular brand or type of fixing or for any particular method of packing door assemblies at fixing positions. Most installers have their preferred methods but these should generally comply with the following advice.

FLAMEBREAK™ based door assemblies are 'Q-Mark' approved for installation into most structures including:

- Cast dense concrete
- Dense concrete blocks or brickwork.
- Lightweight concrete
- Lightweight aerated concrete.
- Timber stud partition.
- Steel stud partition.

NOTE 1: All structures should provide for secure fixings and in the case of Steel stud partitions, the jamb fixing studs should be generally be back filled with softwood to receive fixings.

NOTE 2: Door assemblies may be fixed to some propriety steel stud partitions where the particular partition system has been successfully tested to the required performance with timber door assemblies. In this event fixings must comply with the partition suppliers (manufacturers) specifications.

Installation Fixings:

Fasteners used for the installation of door assemblies must be of a size and type suitable for securing into the medium into which the door assembly is to be installed.

Fixings must penetrate the structure to a minimum depth of 40mm.

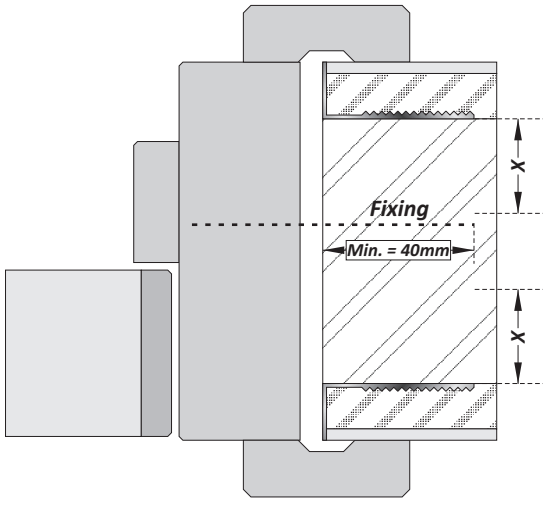
NOTE: Where grounds are used, the grounds must be secured with fixings to a minimum depth of 40mm into the surrounding structure.

When installing door assemblies into masonry walls it is recommended that fixings should be located at least 25mm from the face of the base block work or brick work wall.

Steel wood screws are approved for use with timber stud partitions and for use with steel stud partitions that incorporate a timber infill.

When fixing to propriety metal stud partitions without timber infill the fixings must be of the size and type approved by reference to the partition manufacturers fire test / assessment data.

Installation Fixings *Fig. 14.1*



a/ Steel fixings to penetrate structure to a minimum depth of 40mm.

b/ For masonry walls it is recommended that fixings are located a minimum of 25mm (dim. x) from the face of the base block / brick structure.

c/ Fixings may be covered by use of the door stop, pellets or by the intumescent seals.

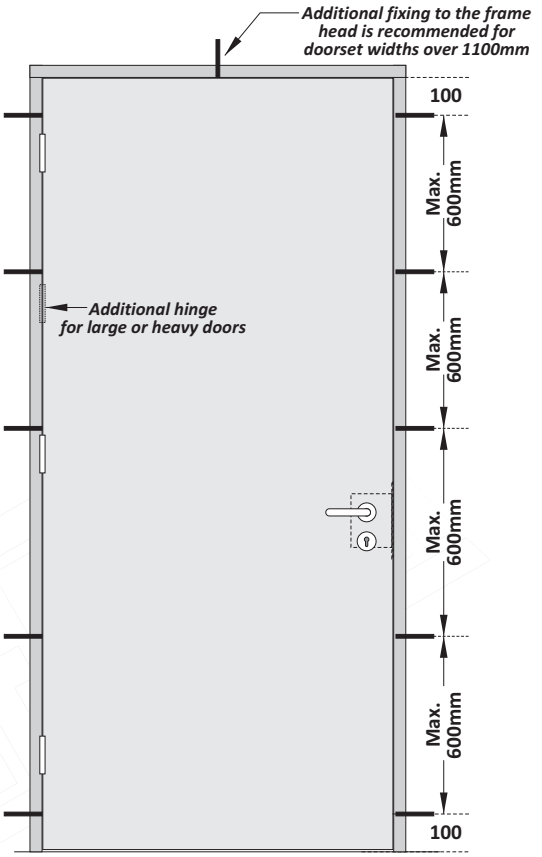
Fire Door Installation:

Installation Fixings *contd.*:

The positioning of installation fixings in height should be planned to avoid conflicts with hardware, sealing systems and other building elements.

- ***A top fixing must be located within 100mm from the underside of the frame head.***
- ***A bottom fixing must be located 100mm from the bottom of the jamb.***
- ***Intermediate fixings must be located at centres of not more than 600mm.***
- ***The minimum number of fixings in height must be:***
  a/ Door assembly heights up to 2000mm = 4No.
  b/ Door assembly heights 2000 ~ 2500mm = 5No.
  c/ Add 1No. fixing for each further 500mm increase in the door assembly height.
- ***For storey height door assemblies a top fixing must be provided within 100mm from the underside of the frame head with a further top fixing positioned 100mm from the under side of the transom rail (or bottom edge of the over panel if a flush overpanel design is used).***
- ***For door assembly widths in excess of 1100mm the use of an additional fixing centre width of the door assembly at the head position is recommended.***
- ***MDF frames are more flexible than timber frames. To reduce the risk of frame distortion during fixing it is strongly recommended that the dimension for fixing centres between intermediate fixings is reduced from 600mm to a maximum of 500mm.***

Installation Fixings *contd.*: *Fig. 14.2*



Timber frame fixing locations illustrated.

Fire Performance Walls and Partitions:

The wall and partition constructions shown in this section are for illustration purposes only.

There are numerous wall and partition constructions and Designers must ensure that the designs used for any particular project are suitable to receive fire doors to the required performance.

The wall / partition designs must also provide for the secure fixing of door assemblies.

Locating Door Assemblies:

For 2nd. fix Fire Door installation, door assemblies must be positioned centrally in the opening width with equal packing to both sides.

For single action doors it is recommended that door assemblies are aligned with the wall / partition faces towards the opening face of the door. For double action door assemblies the assembly should be aligned relative to a single selected face.

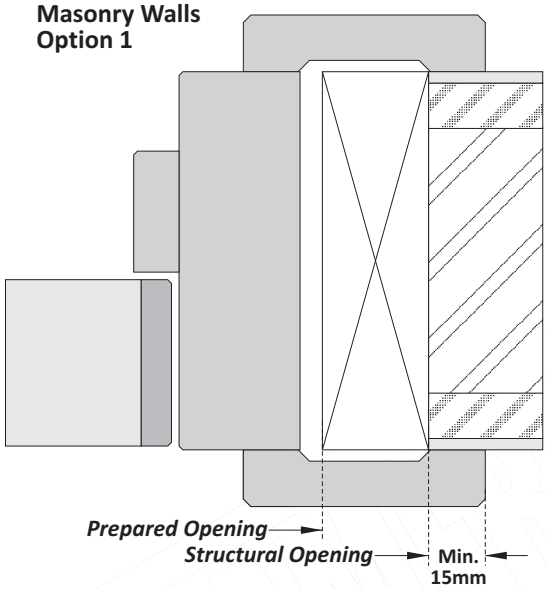
Door assemblies must be installed plumb and square and the use of the door leaf as an installation template is recommended to reduce the need for subsequent adjustments.

Timber Grounds:

Timber grounds may be used to adjust opening dimensions to receive fire rated door assemblies up to FD60 *(BS476 Pt.22)*.

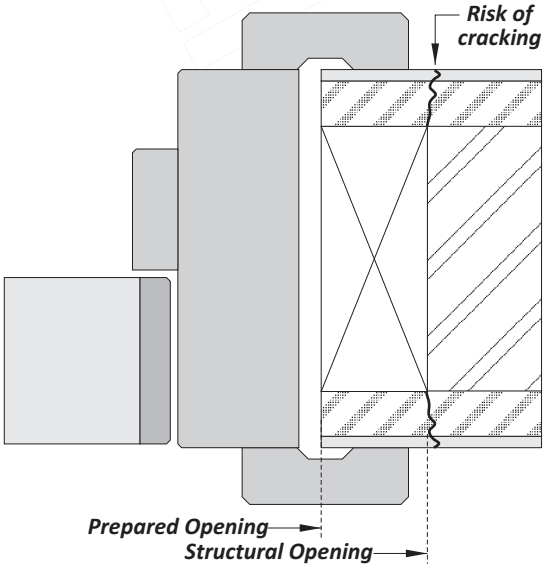
The use of timber grounds is recommended to provide for 'prepared openings' to receive door assemblies See ***Section 9 - Door Assembly Coordination.***

Timber Grounds - Masonry Walls Option 1 *Fig. 14.3*



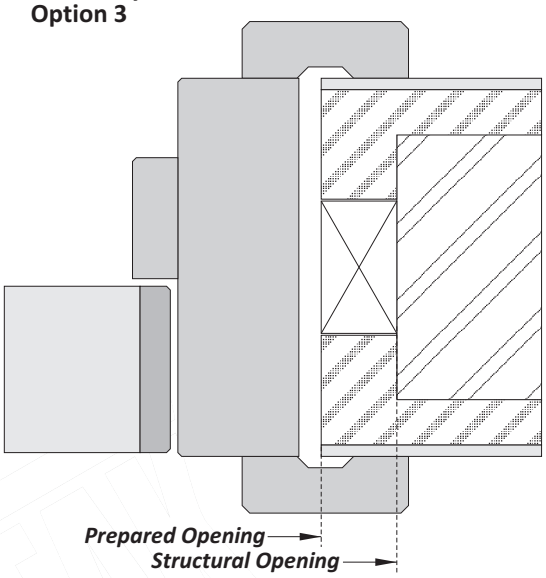
Timber grounds may be applied to the full thickness of the finished wall. However, architrave dimensions may need to be increased to provide for cover over the surrounding structure

Timber Grounds - Masonry Walls Option 2 *(Not Recommended)* *Fig. 14.4*



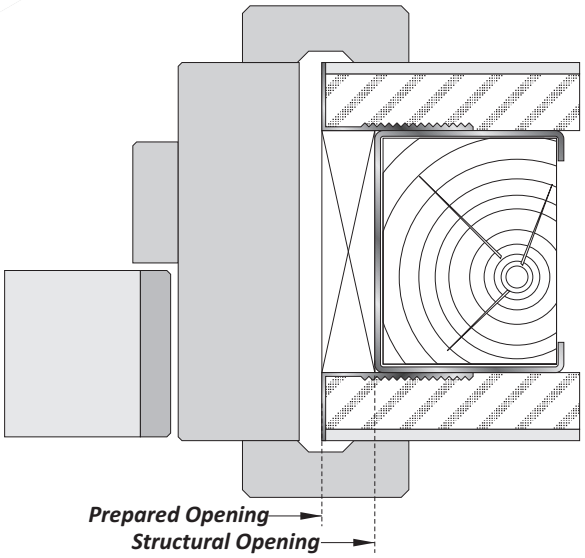
If render is extended over the grounds the ground will absorb moisture (and swell). Shrinkage occurs as the ground loses moisture with a consequent risk of cracking of wall finishes.

Timber Grounds - Masonry Walls Option 3 *Fig. 14.5*



Use of a smaller ground will permit the render to be returned to the structural reveal with minimal risk of cracking of facing materials. This detail will also permit the use of a 'project standard' size architrave.

Timber Grounds Stud Partitions *Fig. 14.6*



Stud partitions can generally be constructed to more exacting tolerances with a reduced need for the use of grounds.

Where necessary timber grounds can be used to form prepared openings with stud partitions. The use of dry facings (e.g. plaster boards) results in a minimal risk of cracking of wall finishes.

Installation Gaps:

Installation Gaps:

For 2nd. fixing of door assemblies into prepared openings it is essential that there is an installation gap between the frame and the surrounding structure.

The recommended minimum gap is 3mm at each jamb at 6mm at the head but, this is only possible where the openings are plumb and square and prepared to exacting tolerances.

The following details illustrate 'Q-Mark' approved methods for the treatment of installation gaps for fire rated door assemblies up to FD60 *(BS476 Pt.22)*. ***See also BS8214 : 2016.***

Sealant:

Mastic should be an approved linear gap joint seal, successfully tested in accordance with BS476 Pt. 20 OR BS EN 1366-4 for the required period of fire resistance.

NOTE 1: Any substrate materials tested either side of the approved mastic are acceptable as supporting evidence, e.g. timber to concrete, concrete to concrete, flexible partition to timber or flexible partition to concrete. Provided that the mastic has been tested within these parameters, it can be used for the applications described by reference to Figs. 4.7 to 4.18.

Expanded foam (*limited to performances up to 30Mins. fire integrity*) should be an approved linear gap joint seal, successfully tested in accordance with BS476 Pt. 20 *OR* BS EN 1366-4 for a minimum period of 30 min. fire resistance.

NOTE 2: Provided that the expanded foam has been tested uncapped on both faces (e.g. without architrave) in accordance with BS476 Pt. 20 OR BS EN 1366-4, with a minimum gap width of 20mm and a maximum full fill depth of 100mm, the expanding foam is approved for frame to supporting construction gap widths up to 20mm for all frame depths. Any substrate materials tested either side of the approved expanding foam linear joint seal are acceptable as supporting evidence. e.g. timber to concrete, concrete to concrete, flexible partition to timber or flexible partition to concrete. Provided that the expanded foam has been tested within these parameters, it can be used for applications described by reference to Figs. 4.7 to 4.18.

NOTE 3: For expanding foams that have been tested in accordance with BS476 Pt. 20 OR BS EN 1366-4, outside these parameters, the maximum width and required depth of foam is dictated by the manufacturer's tested and approval instructions. This could include restrictions on the type of surrounding structure that is approved for use with the expanding foam.

NOTE 4: Mastic and expanded foam seals may be used for the applications described by reference to Figs. 4.7 to 4.18, provided that they have been included within a fire test, between the door frame and the surrounding structure, on a timber based door assembly that has demonstrated a minimum of 30 min. fire resistance in accordance with BS 476 Pt. 22 or BS EN 1634-1.

The manufacturer's instructions should be followed.

NOTE 5: The pressure forming intumescent fire seals identified by reference to Figs. 4.7 to 4.18. are defined as door edge intumescent fire seals that have been successfully tested in accordance with BS 476 Pt. 22 or BS EN 1634-1 for the required period of fire resistance.

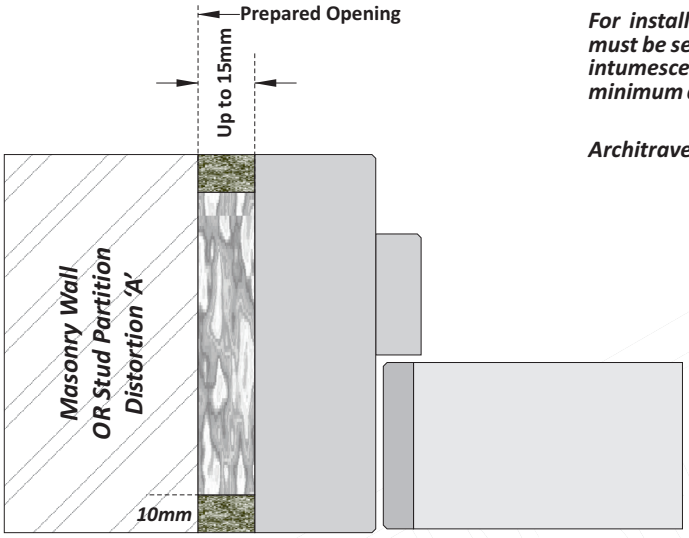
Architrave:

Architraves (*and quadrants*) should be mechanically fixed, e.g. pins (*including pneumatically fired pins*), or screws.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 15mm without architrave 30Min.

Fig. 14.7



For installation gaps up to 15mm the installation gaps must be sealed with tightly packed mineral rock fibre with intumescent mastic capping to both sides of the frame to a minimum depth of 10mm.

Architrave: No Architrave fitted.

BS8214 : 2016
Table 2 Dwg. 1
Table 3 Dwg. 1

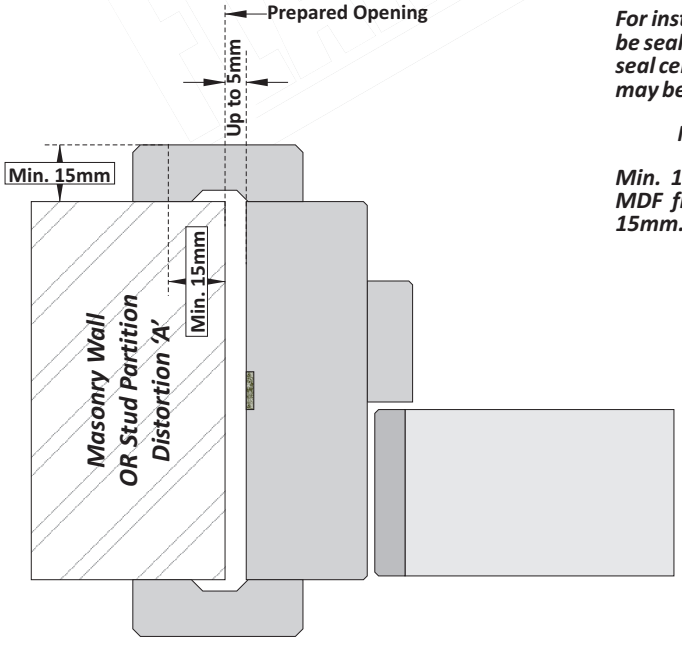
BS8214 : 2016 - Table References:

Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Table 3 = Supporting structure likely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps up to 5mm with architrave 30Min.

Fig. 14.8



For installation gaps up to 5mm the installation gaps must be sealed with 10x2mm pressure forming intumescent fire seal centrally fitted to the rear of the door frame. (This seal may be recessed or surface fitted).

Not approved for smoke sealed applications.

Min. 15mm thick architrave in softwood, hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

BS8214 : 2016
Table 2 Dwg. 3

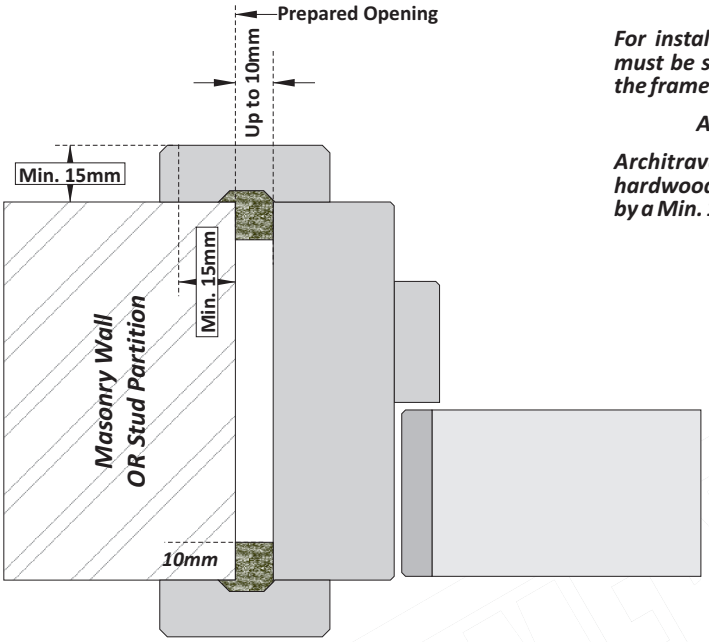
BS8214 : 2016 - Table References:

Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 10mm with architrave 30Min.

Fig. 14.9



For installation gaps up to 10mm the installation gaps must be sealed with intumescent mastic to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Architrave: Min. 15mm thick architrave in softwood, hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

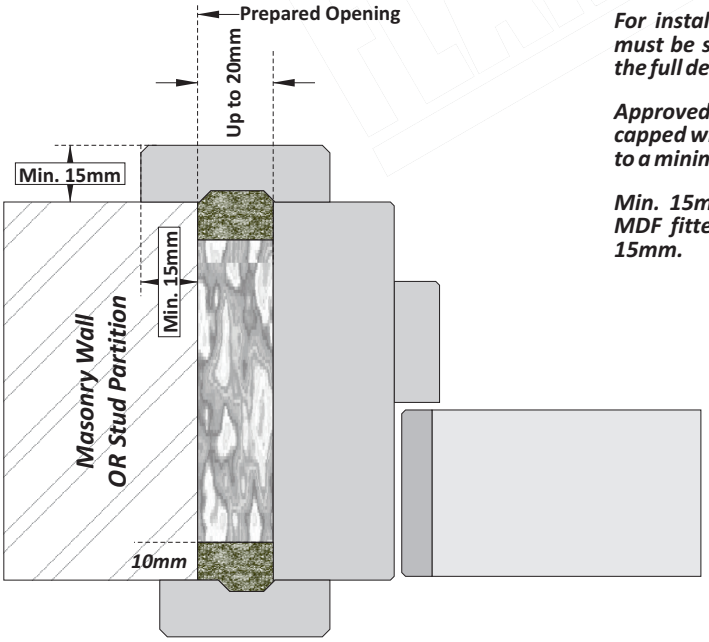
BS8214 : 2016
Table 2 Dwg. 2

BS8214 : 2016 - Table References:

Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps up to 20mm with architrave 30Min.

Fig. 14.10



For installation gaps up to 20mm the installation gaps must be sealed with tightly packed mineral rock fibre to the full depth of the frame.

Approved for smoke sealed locations with the rock wool capped with intumescent mastic to both sides of the frame to a minimum depth of 10mm. (as illustrated).

Min. 15mm thick architrave in softwood, hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

BS8214 : 2016
Table 2 Dwg. 4
Table 3 Dwg. 2

BS8214 : 2016 - Table References:

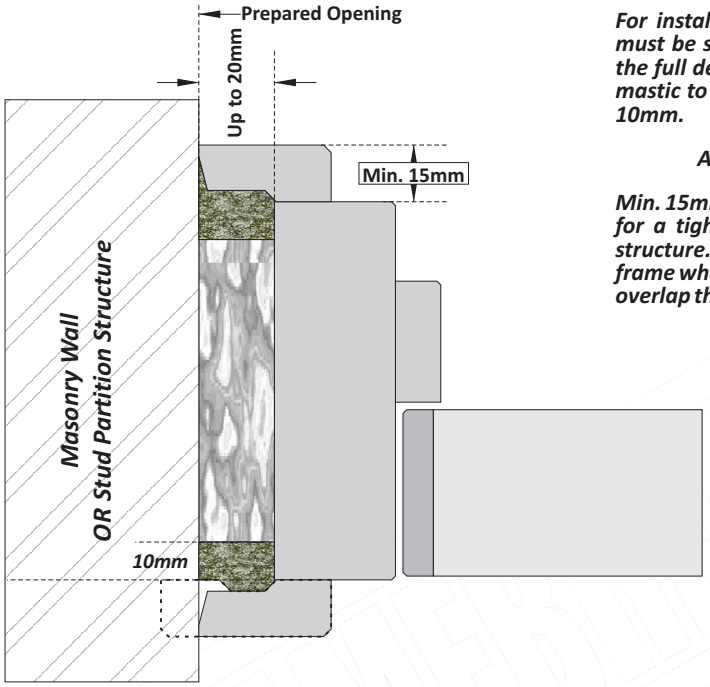
Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Table 3 = Supporting structure likely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 20mm with quadrant 30Min.

Fig. 14.11



For installation gaps up to 20mm the installation gaps must be sealed with tightly packed mineral rock fibre to the full depth of the frame and capped with intumescent mastic to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Min. 15mm thick quadrant in hardwood scribed to provide for a tight fit between the frame and the surrounding structure. The quadrant can be to one or both sides of the frame where an approved architrave is used on one face to overlap the surrounding structure.

BS8214 : 2016
Table 2 Dwg. 7
Table 3 Dwg. 4

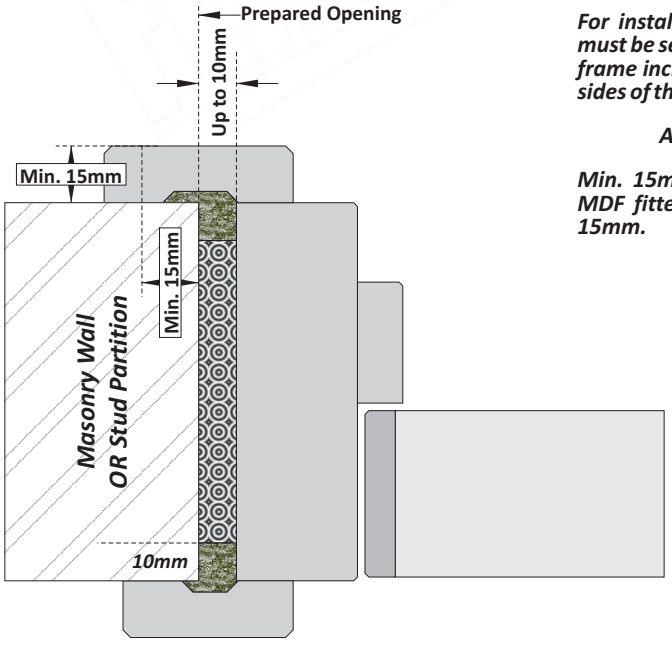
BS8214 : 2016 - Table References:

Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Table 3 = Supporting structure likely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps up to 10mm with architrave 30Min.

Fig. 14.12



For installation gaps up to 10mm the installation gaps must be sealed with expanded foam to the full depth of the frame including capping with intumescent mastic to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Min. 15mm thick architrave in softwood, hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

BS8214 : 2016
Table 3 Dwg. 3

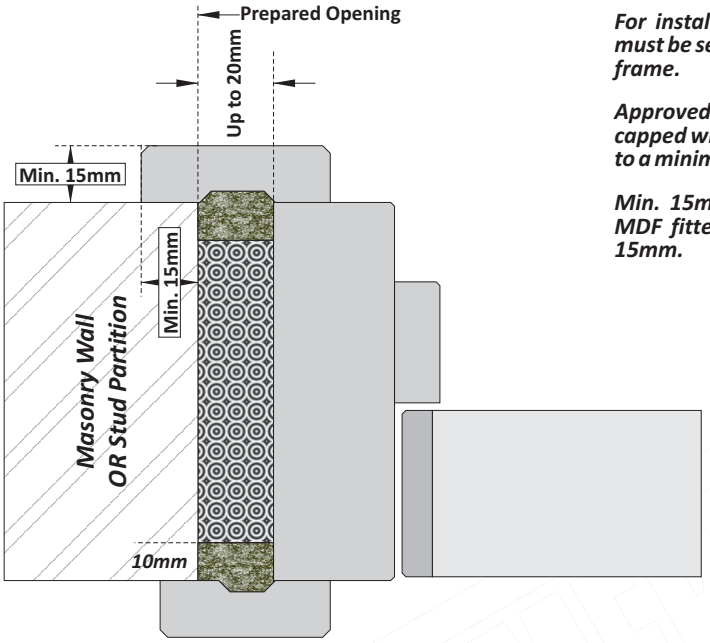
BS8214 : 2016 - Table References:

Table 3 = Supporting structure likely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 10mm with architrave 30Min.

Fig. 14.13



For installation gaps up to 20mm the installation gaps must be sealed with expanded foam to the full depth of the frame.

Approved for smoke sealed locations with the rock wool capped with intumescent mastic to both sides of the frame to a minimum depth of 10mm. (as illustrated).

Min. 15mm thick architrave in softwood, hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

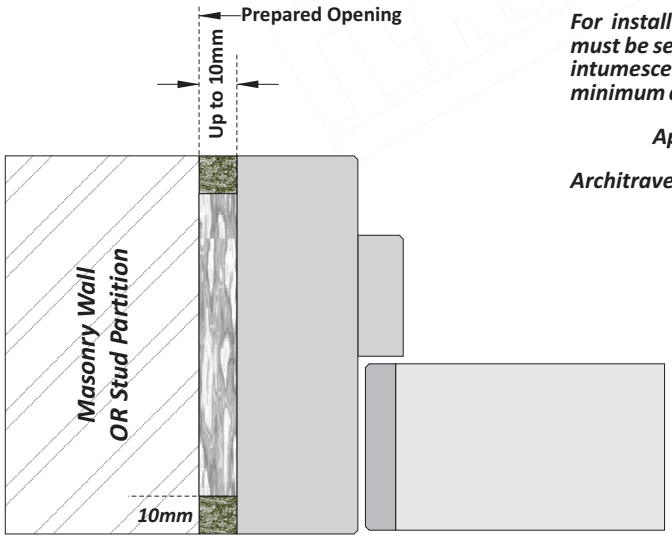
BS8214 : 2016
Table 2 Dwgs. 5 & 6

BS8214 : 2016 - Table References:

Table 2 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 30Min. fire resistance.

Installation Gaps up to 10mm without architrave 60Min.

Fig. 14.14



For installation gaps up to 10mm the installation gaps must be sealed with tightly packed mineral rock fibre with intumescent mastic capping to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Architrave: No Architrave fitted.

BS8214 : 2016
Table 5 Dwg. 1

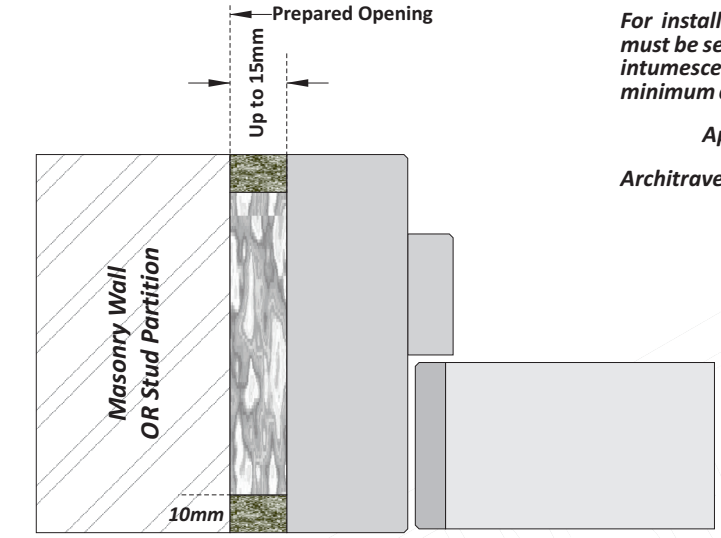
BS8214 : 2016 - Table References:

Table 5 = Supporting structure likely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 15mm without architrave 60Min.

Fig. 14.15



For installation gaps up to 15mm the installation gaps must be sealed with tightly packed mineral rock fibre with intumescent mastic capping to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Architrave: No Architrave fitted.

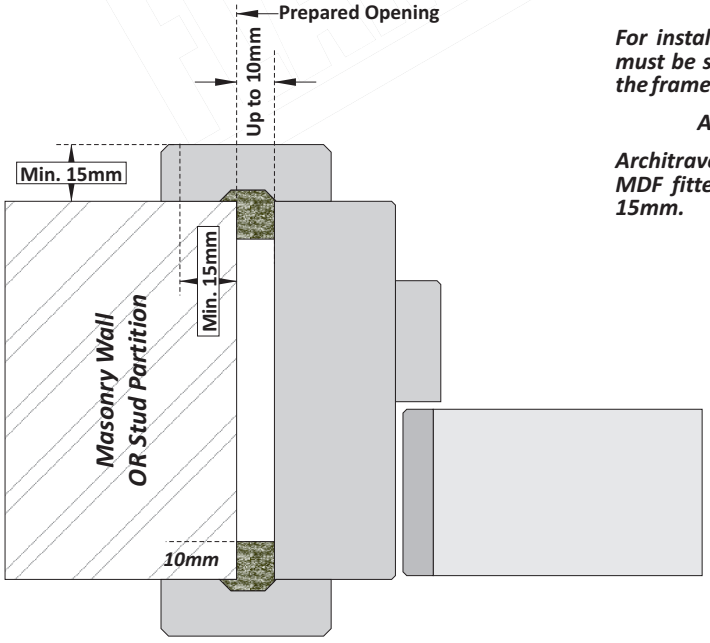
BS8214 : 2016
Table 4 Dwg. 1

BS8214 : 2016 - Table References:

Table 4 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Installation Gaps up to 10mm with architrave 60Min.

Fig. 14.16



For installation gaps up to 10mm the installation gaps must be sealed with intumescent mastic to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Architrave: Min. 15mm thick architrave in hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

BS8214 : 2016
Table 4 Dwg. 2

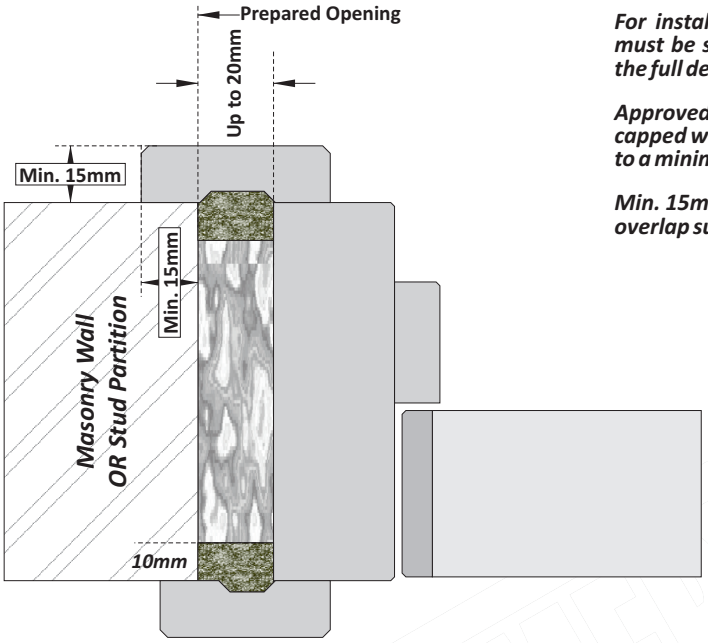
BS8214 : 2016 - Table References:

Table 4 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Installation Gaps - BS8214 : 2016:

Installation Gaps up to 20mm with architrave 60Min.

Fig. 14.17



For installation gaps up to 20mm the installation gaps must be sealed with tightly packed mineral rock fibre to the full depth of the frame.

Approved for smoke sealed locations with the rock wool capped with intumescent mastic to both sides of the frame to a minimum depth of 10mm. (as illustrated).

Min. 15mm thick architrave in hardwood or MDF fitted to overlap surrounding structure by a Min. 15mm.

BS8214 : 2016
Table 4 Dwg. 3
Table 5 Dwg. 2

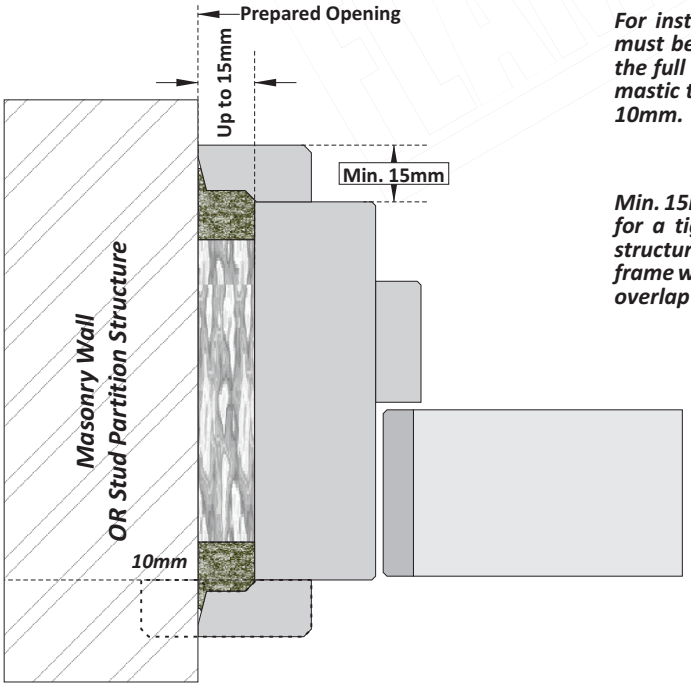
BS8214 : 2016 - Table References:

Table 4 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Table 5 = Supporting structure likely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Installation Gaps up to 10mm with quadrant 60Min.

Fig. 14.18



For installation gaps up to 15mm the installation gaps must be sealed with tightly packed mineral rock fibre to the full depth of the frame and capped with intumescent mastic to both sides of the frame to a minimum depth of 10mm.

Approved for smoke sealed applications.

Min. 15mm thick quadrant in hardwood scribed to provide for a tight fit between the frame and the surrounding structure. The quadrant can be to one or both sides of the frame where an approved architrave is used on one face to overlap the surrounding structure.

BS8214 : 2016
Table 4 Dwg. 4
Table 5 Dwg. 3

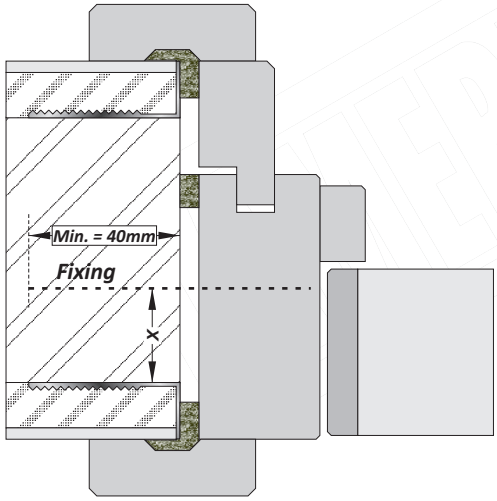
BS8214 : 2016 - Table References:

Table 4 = Supporting structure unlikely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Table 5 = Supporting structure likely to exhibit significant distortion during fire exposure with 60Min. fire resistance.

Installation - Split Frames & Frames with Extension Linings:

Installation Frame Designs with Extension Linings: *Fig. 14.19*



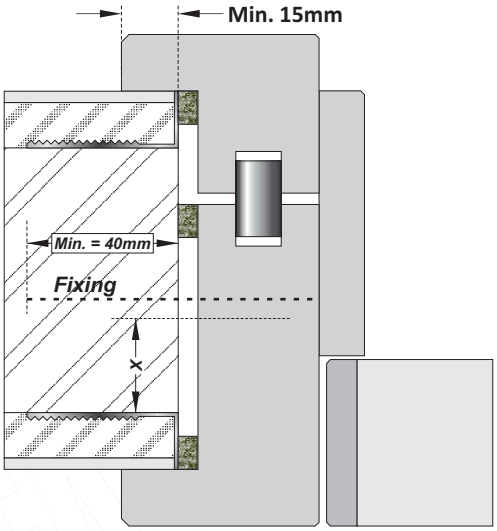
For frame designs using extension linings, the extension lining is essentially a non load bearing trim item and the stability of the installation relies upon the secure fixing of the primary frame section.

Installation fixings for installing the primary frame section must comply with 'Q-Mark' approved details described by reference to Section 14 Page 1 - Installation Fixings.

Sealing between the frame and the surrounding structure must comply with the recommendations defined by reference to Figs. 14.7 ~ 14.18. An additional intumescent bead being used to the back of the primary frame section as illustrated above.

Alternative approved method for intumescent sealing between the frame and the surrounding structure for use with frame designs using extension linings and where installation gap do not exceed 5mm is illustrated by reference to Section 7 - Frames - Fig. 7.52.

Installation Split Frame Designs : *Fig. 14.20*



For split frame designs the section that supports the door leaf is the primary section with the other half of the split frame being a non load bearing trim item.

Installation fixings for installing the primary frame section must comply with 'Q-Mark' approved details described by reference to Section 14 Page 1 - Installation Fixings.

Structures to receive door assemblies using split frame designs without the use of architrave must be very carefully prepared providing for an installation gap that does not exceed 5mm at any point around the perimeter of the frame. It is essential that the openings to receive the door assemblies are plumb and square and constructed to exacting tolerances. (See Section 9 - Door assembly Coordination).

The nib (moulded architrave) part of the frame must overlap the surrounding structure at the head and jambs by a minimum of 15mm and installation gaps of any size must be sealed with intumescent mastic to a minimum depth of 10mm as illustrated above.

Alternative approved method for intumescent sealing between the frame and the surrounding structure for use with split frame designs is illustrated by reference to Section 7 - Frames - Fig. 7.53.

Installation - Door Leaf Adjustment:

Adjusting Door Leaves:

The extent to which door leaves need to be adjusted will be influenced by a number of factors including:

- ***Provisions made at the time of manufacture.***
- ***Environmental conditions affecting moisture contents during transport and storage.***
- ***Quality of installation.***

When installed, the operating gaps between the door and the frame and at the meeting stiles of pairs should comply with BS4787 Pt.1 : 1980 when measured from the opening face of the door leaf (*narrowest point*) with equal gaps at head and stiles *(including meeting stiles).*

Operating gaps at the threshold must not exceed 10mm between the bottom of the door an top of the floor covering.

It is recommended that the moisture content of the door leaf is checked before attempting to adjust door leaves.

NOTE: Timber can grow or shrink across the grain, on average by 1% for each 4% variation in moisture content. Adjusting door leaves that have absorbed excessive moisture during transport, storage or during installation while wet trades are in attendance, may give rise to subsequent operating gap issues following the commissioning of the building heating and ventilation systems.

The site adjustment of door leaves may be required to suit individual location requirements. The need for adjustments will be reduced if the door assemblies are installed plumb and square and where the door leaf *(rather than the surrounding structure)* is used as the installation template.

The application of a 'leading edge' may be required for some locations. *(See Door Growth Formula - Section 9 - Door Assembly Coordination)*.

NOTE: Some door manufacturers offer a 'leading edge' service as a factory applied optional extra. This will usually provide for a fixed chamfer of 2^{o} applied to the closing stiles of doors.

FLAMEBREAK™ based fire doors may be reduced on site by planing lippings. The extent of the reduction should be the minimum necessary to provide for the correct operation of the door but must not exceed 20% of the original lipping thickness.

For adjustments in widths it is recommended that lippings are reduced equally on both vertical edges of the door.

For reductions in height, adjustments may be limited to the bottom edge only unless otherwise required by reference to specific project specifications.

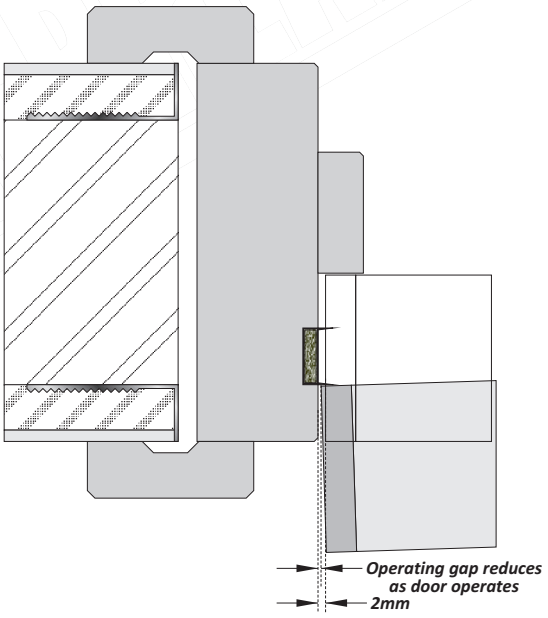
Where intumescent seals are fitted to the door leaf, these must be removed before adjusting the door and refitted *(with additional grooving)* after the adjustments have been completed.

NOTE: Intumescent seals must be replaced with new seals complying with the same size and specifications of the seals that are removed.

Door Assemblies with Acoustic / Smoke Seals:

Additional care is required where door assemblies are fitted with smoke or acoustic seals.

Potential problems Doorsets with Acoustic / Smoke Seals: *Fig. 14.21*



If door leaves are fitted with square edges and corners when used with door assemblies fitted with combined intumescent / smoke seals the following difficulties may be experienced:

a/ The operating gap between door and frame at the closing stile will reduce as the door closes (and opens).

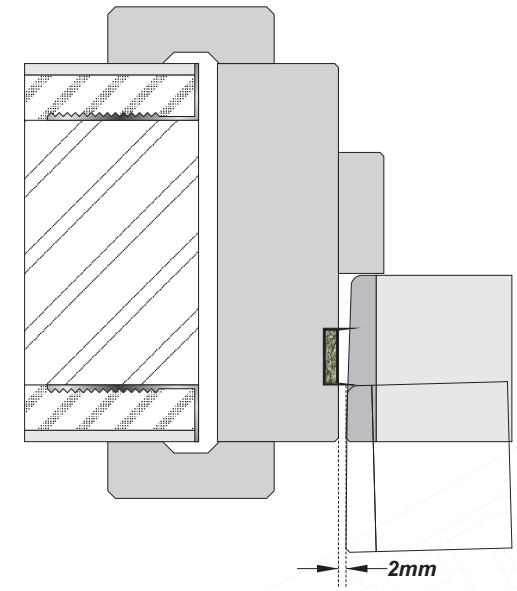
b/ There will be increased resistance to the operation of the door.

c/ Square corners may bite into seal blade with consequent risk that blade may tear from carrier.

Installation - Door Leaf Adjustment:

Door Assemblies with Acoustic / Smoke Seals contd.:

Recommendations Door Assemblies with Acoustic / Smoke Seals: *Fig. 14.22*



The following actions are recommended to overcome the potential problems identified by reference to Fig. 14.22:

a/ Over recess the intumescent seal by 0.5mm to relieve stress at the blade / carrier junction.

b/ Apply a leading edge (particularly to the closing stile) to maintain a constant operating gap as the door closes (opens).

c/ Apply a pencil round to the closing edges of the door leaf to act as a lead for the compression of smoke / acoustic seals.

NOTE: The use of pencil rounds is recommended for all edges of the doors. Apart from acting as a lead for the compression of seals, this feature will also provide for:

i/ Improved application of paint and lacquer finishes.

ii/ Reduced risk of injury to users in the event of impact with door edges.

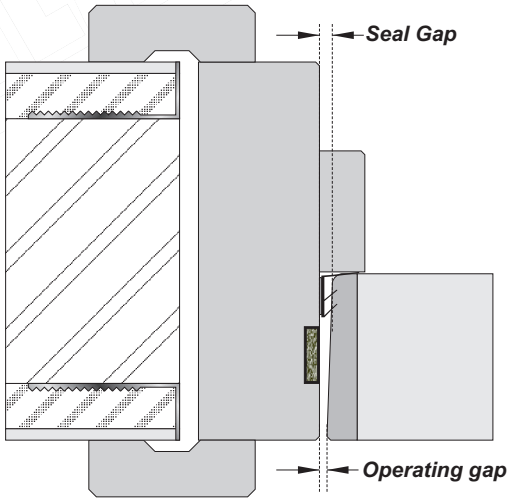
Operating gaps & Seal gaps:

The gap between the door and the frame must be suitable to provide for effective smoke / acoustic sealing at the seal position, particularly in respect of frame reveal fitted seals.

Generally separate seals that fit near to the frame doorstop will provide for reduced influence on the operation of the door.

It is recommended that 'operating gaps' and 'seal gaps' are considered as separate issues and that seal designs should provide for a means of adjustment to suit the particular application.

Operating gaps & Seal gaps: *Fig. 14.23*



The use of separate intumescent and smoke / acoustic seals is recommended by Pacific Rim Wood Ltd. for the following reasons:

a/ Smoke / Acoustic seals can generally be located in positions that have a minimal influence on the operation of the door.

b/ 'Batwing' and Norsound 710 type seals with adhesive backing can be adjusted by the use of backing tape to provide for the optimum balance between sealing efficiency and influence on operating forces.

c/ The smoke / acoustic seals are located in positions with a low risk of damage in use but may be easily replaced if necessary without disturbing intumescent seals.

'Q-Mark' Approval - Installed Door Assemblies:

To maintain the 'Q-Mark' status, the door assembly manufacturer must be a member of the 'Q-Mark' third party certification scheme.

'Q- Mark' Approval:

To maintain 'Q-Mark' approval, an installed fire rated door assembly must satisfy the following requirements:

a/ Lippings must not be reduced by more than 20% of the original sectional thickness.

b/ Leading edges may be applied but the chamfer must not exceed 2.5^{o}.

c/ Edge profiling *(e.g. pencil rounds)* to be Max. 8mm radius.

d/ The maximum permissible gap at the intumescent seal position(s) within door thickness, must not exceed 4mm.

e/ The door leaf must not project more than 1mm from the face of the frame lining *(before the application of architrave)*.

f/ The packing of installation gaps must comply with approved details illustrated in *Section 14 - Fire Door Installation.*

g/ Frame materials and sectional details must comply with the requirements of *Section 7 - Frames.*

h/ Fire doors must be lipped to comply with approved details described by reference to *Section 3 - Lippings & Facings.*

j/ Door facings must comply with details described by reference to *Section 3 - Lippings & Facings.*

k/ Intumescent seals must be of the size and type suitable for the particular door assembly design by reference to *Section 2 - Fire Door Applications.*

m/ Intumescent seals must be located as described by reference to *Section 4 - Intumescent Sealing.*

n/ Glazing in fire doors must comply with details described by reference to *Section 6 - Glazing*, including glass type, glazed area and intumescent glazing / beading system.

p/ Hardware used with fire rated door assemblies must comply with details provided by reference to *Section 8 - Hardware*, including all intumescent gaskets, sealing and the like.

It would be an impossible task to attempt to anticipate every possible door assembly design or design variant.

The content of this manual will cover most application requirements.

Where particular project designs require applications that fall outside of the scope of this manual it may be possible to provide for a 'Project Assessment' based upon specific details.

Requests for 'Project Assessments' under the 'Q- Mark' scheme may be forwarded by any 'Q- Mark' member to:

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