

PRINCIPAL DOORSETS LIMITED

HIGH QUALITY PERFORMANCE DOORS, FRAMES AND DOORSETS

INSTALLATION HANDBOOK, MAINTENANCE & GUIDANCE NOTES

IMPORTANT INFORMATION FOR:

- Installers
- Contractors
- Project Architects
- Planning Supervisors
- Building Control Officers

INTRODUCTION

Principal Doorsets' doors frames and doorsets are high quality performance products manufactured using the latest techniques and by highly skilled operatives under strict quality control guidelines and procedures.

This Installation & Guidance Handbook is designed to help and assist all those involved with the handling fitting and maintenance to ensure the products not only look their best but also meet all performance requirements relating to certification at contract handover and for the longer term. A maintenance programme with six monthly intervals maximum is recommended.

Further copies of this Handbook are available on line www.principal-doorsets.co.uk/installation or emailing info@principaldoorsets.co.uk and requesting a copy.

Handling, installation and maintenance are essential links in the chain, leading to successful long term product performance. This is particularly the case with fire resisting doorsets where mistakes could prove fatal.

Project Planning

When dealing with doors, frames and doorsets two fundamental points should be remembered:

1. Full information provided at the earliest stage is essential for delivery on time. Late or missing information can lead to delivery delays which could affect the whole contract.
2. Doors, frames and doorsets should be regarded as "late second fix" products are often fully factory finished. They should not be installed too early.

Installer Qualifications

It is strongly recommended that the installer is a member of a recognised quality assurance scheme to ensure that best practice is used. 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 tested detail supplied by the door leaf manufacturer
- The size of operating gaps
- Intumescent protection around hardware and the quality of the preparations
- The quality of supporting construction and the prepared opening
- The fixing of the fire door
- Fire and smoke stopping methods used in fitting-in gaps and voids

Handling, storage & protection

Handling

- Principal Doorsets products are of a high quality and therefore require an appropriate level of protection on site; we recommend the packaging should not be removed until immediately before

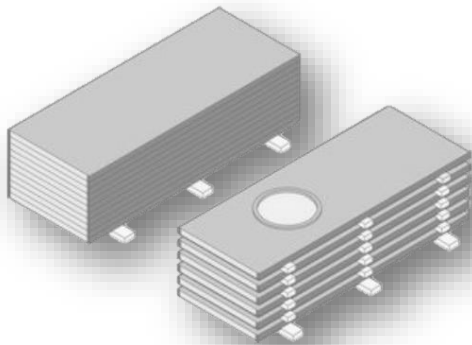
the doorsets are ready to be installed. Our products are late second fix items and should be fixed after wet trades have finished on site and when the moisture level in the building has returned to normal levels.

- Our products can be heavy and difficult to manoeuvre, so please take extra care to avoid damage to the product and prevent injury to site personnel, always work in accordance with sites manual handling policy.
- Door weight information can be found in the table below.
- Our products are designed for forklift truck off-loading and will be supplied banded in stacks for ease of distribution. Pairs of doors will be supplied packaged, separate to frames.
- Heavy doorset will be packaged and shipped individually to reduce item weight. Each item will be identified and will need to be assembled with its “family” of parts.
- Frames and Doors have their unique number marked within the hinge pockets as well as a label on packaging, foot of a door leaf or on the frame.

Storage

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



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.

Doors with glazed apertures should be stacked with spacers between to prevent damage to glazing beads.

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

- **Product should not be stored outside.**



Humidity Guidance within Timber Based products

Relative Humidity Rating (%)	Effects	KEY
Below 40%	Materials are susceptible to "Case Hardening", where the cell Structure of the material collapses, results in deformation (Bowling/Warping) of the material structure.	Control Measures Required
40-60%	This level is the "Optimum" Period, to sustain conditioned manufactured joinery, whereby Atmospheric Moisture is at "Equilibrium"	Acceptable Levels of Atmospheric Moisture
60-75%	Timber being "Hydroscopic", begins to absorb moisture, resulting in "Un - Controlled" expansion, and de-stabilisation of the Material	Control Measures Required
Above 75%	Materials are now exposed to High Levels of Atmospheric Moisture, Deformation of the Cell structure and Un-Controlled excessive swelling resulting in size/Shape alterations to the Manufactured Joinery, the details of which may not return to their original shape after Atmospheric Stabilization.	Activity Must Not Continue/ Residual Risk to Materials

- 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 door sets. Doors/Doorsets stored outside of this range may swell or shrink and distort excessively and will void guarantees and not perform as specified.



DO NOT

- Store outside.
- Store on door/frame edge.
- Store near heaters.
- Store in areas colder than 3°C.
- Store in direct sunlight.
- Store in a damp area.
- Stack product against walls.
- Install prior to 2nd fix.

- Store in a well ventilated location.
- Store close to the installation area.
- Stack doors/doorsets horizontally on 3 to 4 level (same height) bearers, with bearers between the doors/doorsets. Bearers running the vertical length of the door are required if the doors/doorsets have long apertures. Bearers should line through with each other down the stack to stop doors being bent by the above load. Never put bearers across glass or glazing beads.
- Product should never be stacked straight on the floor.

- Doors should not be stacked more than 20 high and doorsets no more than 10 high.
- For extended storage periods, doors should be covered with black polythene to stop the finish being affected by ultraviolet light.
- When restacking door leaves please ensure hinge knuckles or any other ironmongery is clear of the adjacent door face.

Most of our doors and doorsets are despatched to site bubble-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 of time 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

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, doors should be left slightly open with the closer arms disconnected. Doors held open with wedges against a door closer action will induce twist.

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., but it's the contractor's responsibility to assess the level of protection required for the doorsets and provide it.

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

STEP BY STEP (Brief)

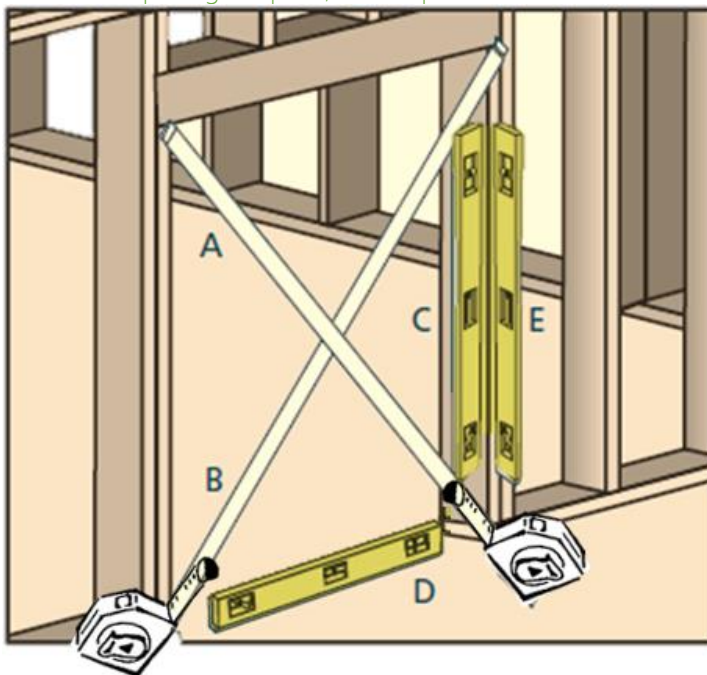
1. Using the doorset labels and a floor plan identify that you have the right components for the doorset location you are to install.
2. Remove packaging and look out for loose items such as pellets, discs, projecting ironmongery etc. Carefully take out the doors and stack flat safely out of the way.
3. Offer the frame into the opening and pack the hanging jamb to make it plumb to both opening and wall face.
4. Fix the hanging jamb making sure that it is plumb both to the structural opening and wall faces. Then 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.
5. Check and adjust level of the frame head. Position the second jamb ensure that it is plumb both ways and parallel to the hanging jamb.
6. 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.
7. 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.

- 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. Then conceal the fixings.

Before you start (Detail)

- 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. This will help you match the correct door and frame at a later date, where doors are stored to minimise site damage.

Check that opening is square, level & plumb before installation



Check the structural opening is plumb and level before you start installation.

- Before removing the packaging check that the overall dimensions of the doorset will fit the opening it is intended for, if correct remove all packaging and take care to retain any loose items.

Where ironmongery is factory fitted, flush strike plates and bolt keeps may be attached to the door leaf or frame. You will need to remove these prior to installation.

- When removing the product packaging, please use a packaging knife with a concealed blade using caution not to come in contact with product, as this will reduce the risk of damaging the product when opening.
- Timber frames supplied separately are fitted with a timber brace across the bottom – this will need removing.

Steel frames may include cover discs to conceal any factory prepared frame fixings. You will need to remove these prior to installation.

FACTORY FRAME PREPARATION

Concealed frame fixing

Frames are presented without being machined for fixing to opening. There are many differing configurations that render many holes 'excess to requirement' and makes the frame appear unsightly. Principal Doorsets offer a frame which allows the product to be secured to openings with the securing positions hidden by either behind the stop or hinge pockets.



Solid Split Lining configuration:

FRAME TO WALL GAPS

Wall construction	Max frame / wall gap width (mm)	Architrave condition	Additional protection	
			30 min	60min
Timber stud masonry etc. non loadbearing (unlikely to distort)	Up to 10	A	None	TYPE 1
		B	TYPE 1	TYPE 2
	More than 10	All	TYPE 1	TYPE 2
Steel stud etc. loadbearing (likely to distort)	All	C	TYPE 1	TYPE 2
Fair faced masonry loadbearing and non-loadbearing	Up to 10	D	None	N/A
	More than 10	All	TYPE 1	N/A
	All	All	N/A	TYPE 2
Architrave conditions:		Additional protection:		
<p>A – Intimately fitted hardwood (or softwood for 30 minutes only) architraves at least 14mm thick with a 5mm overlap onto wall and frame.</p> <p>B – Imperfectly fitting architraves.</p> <p>C – Architrave fit cannot be guaranteed due to likely wall distortion in fire.</p> <p>D – Intimately fitted 19mm hardwood quadrant bead.</p>		<p>TYPE 1 (one of the following)</p> <ul style="list-style-type: none"> • 2mm x 10mm intumescent material as a preformed strip or seal • Mineral or glass wool packed to a depth of at least 10mm • A bead of intumescent paste or intumescent mastic <p>TYPE 2 (one of the following)</p> <ul style="list-style-type: none"> • 2mm x 20mm intumescent material as a preformed strip or seal • Mineral or glass wool packed to a depth of at least 20mm • A bead of intumescent paste or intumescent mastic 		
<p>Notes:</p> <ol style="list-style-type: none"> 1. Principal Doorsets architraves are 14mm thick. 2. When requested we fit 2mm x 25mm intumescent strips grooved into the back of fire resistant frames. 				

Please refer to the latest building standards

Frame

Fixings

The particular wall construction found on the project will determine the best fixing method and our recommendations are as follows:

1. Timber framing or metal framed partitioning with timber sub-lining: No 12 wood screws with a minimum of 50mm anchorage into the timber (75mm for "Heavy Duty").
2. Metal framed partitioning without sub-lining: self-tapping screws with an appropriately sized pilot hole to give the correct holding power.
3. Solid concrete, aircrete perforated or hollow block work: preparatory through frame fixing systems such as the Fischer FUR™ range or similar to give a position fix in varying substrates.

Frame Packers

These are important to ensure a permanent solid positive fixing. They can be made of timber, plywood or MDF or manufactured variable plastic packers can be used. Packers should be the full frame width less 10mm either side (for back pointing) to give a flat surface for the frame to abut. To ensure that they do not move out of position packers can be clearance drilled through when installing the fixing. Alternatively packers can be slotted so that they can be slid in or out of position during adjustment of clearances. Typically the drill through method would be used for the hanging jamb which is installed first with the slotted pockets allowing adjustment of the head and remaining jamb.

Frame to wall gaps

For fire rated doors, a gap of 10mm or more between back of frame and wall will need to be protected in line with the table above to comply with BS 8214. For manufacture we allow a clearance of 5 - 7mm from back of frame to structural wall for top and both sides accommodating wall variations while ensuring fire certification compliance.

Clearances

The following clearances should be achieved around the door leaf when closed to comply with fire certification requirements.

Hanging edge and door top / frame	3mm
Other vertical edge / frame	3mm
Between pairs of doors	4mm
Bottom of door / finished floor covering	10mm* (or 3mm for a smoke control door*)

**Smoke control doors can be identified by neoprene blades fitted in either door edge or frame*

Door stops & Architrave

PVC Postform wrapped, fully painted and polished products can have their stops and architrave fixed by pinning, punching and stopping, filled with a coloured wax to match finish.

Extension linings

When specified the frame is prepared with a groove to receive the extension lining tongue. The lining is screw fixed to the frame.

Over panels

Wherever possible these are factory fitted within the frames of the doorsets or screens. With some door pairs this may not be practicable due to weight therefore overpanels will be factory prepared for site fixing and delivered separately. Two styles are used generally depending upon product range:

1. Shadow Gap – a 3mm spacer is fitted between panel and frame to maintain a similar clearance to the door leaf.
2. Primary Range – unless otherwise specified overpanels fit tight to frame jambs and head.

Both styles require a 3mm clearance between door leaf and bottom of the panel (which is square edged not rebated). For pairs, steel angle stops can be recessed into the panel for further information or drawings contact our technical department/Lead Project Coordinator. Screw fixings are used through the outside of the frame into the panel edge. It is important that frame jambs (and head for pairs) are securely fixed to the wall in the area of overpanels and fixings should be made in that part of the frame not covered by the panel.

Removable overpanels are also available (for example to allow large equipment to pass through) including key operated security bolts and dowels to the head securely retaining the panel to the jambs. Two people are needed to fit or remove these panels.

Large or Heavy Doors and Doorsets

Additional precautions are needed with both handling and installing large or heavy doors and doorsets including the following:

X ray protection	76 kg/m ²
Acoustic door FD60	71 kg/m ²
Acoustic door Rw43	54 kg/m ²
Acoustic door Rw38	59 kg/m ²
Anti-Vandal	57 kg/m ²

The above weight per m² relate to door leaves only and additional weights of frames (for doorsets 4.4kg/m length) hinges plates and ironmongery should be considered. In some cases – and always with pairs – doors may be removed from doorsets with frames knocked back down after factory assembly to allow easier off loading, site handling and delivered separately. All items are identified as sets and wrapped together.

In the interests of safety and protection of products from damage extra manpower should be allocated: we recommend 4 people for handling and three for installation. Before installing heavy doors, check that the wall structure to be fixed to, is suitable for the door weight when in its fully open position. Walls should be at least solid brickwork, heavy duty block work or concrete, securely tided in at both top and bottom.

Replacement of existing doors or doorsets

When replacing existing fire doors and doorsets work should be planned so that doors are not taken off and left over night without proper replacement to maintain the required fire rating.

Single leaf doorsets

- Remove the door from the frame by either:
 - a. A Sliding the door off its hinges (if on lift off hinges),
 - b. B By removing the screws from the frame hinge blades.
- Stack loose doors horizontally on their backs on bearers as per storage information.
- Single doorsets are delivered fully constructed unless otherwise requested, or of excessive weight.
- Where doorsets are delivered with 'knock down' frames ensure the parts for that frame are reassembled together.

Metal frames

We supply metal frames welded and fully assembled as a set. Assembled metal frames include a metal brace which is tack welded on and will need removing. The tack welds will break off with a few hits of a hammer near the weld at the back of the frame striking the brace itself only.

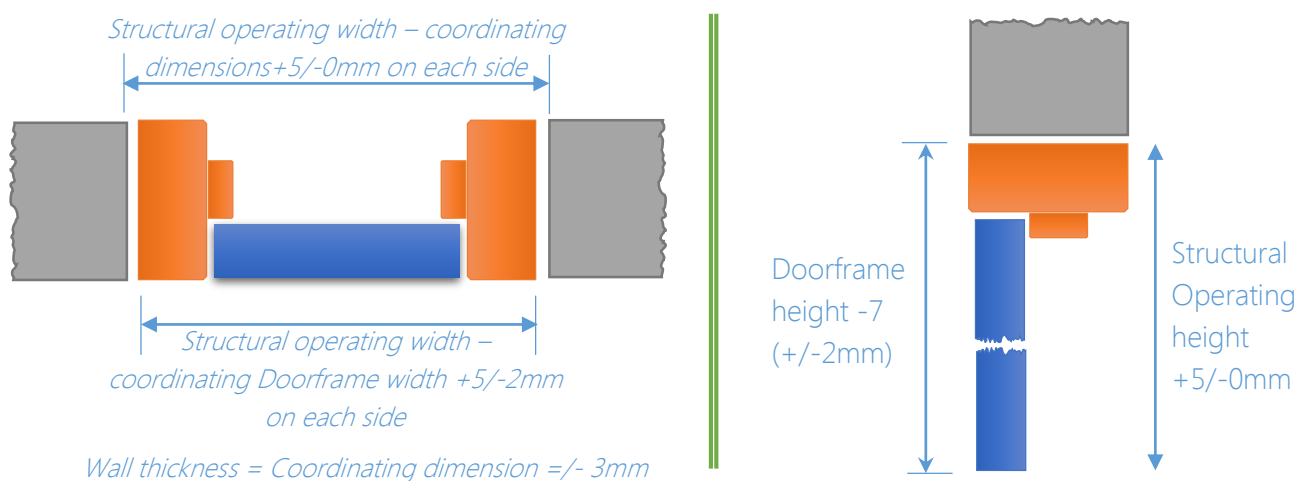
Clearances

The following clearances should be achieved around fire door leaves when closed to comply with fire certification.

Timber doorsets

- Sides and top of door = Manufactured to 3mm (4mm is maximum).
- Meeting stile gap on pairs = Manufactured to 3mm (4mm is maximum).
- Bottom of door to finished floor covering = 10mm maximum (5mm maximum on 90 and 120 minute fire rated doorsets).

Additional guidance on undercuts can be found in BS8214 but the following are guidelines recommended by Principal Doorsets Fire only doors = 10mm maximum undercut from top of finished floor finishes to underside of door Fire and smoke controlled doors = 3mm maximum undercut from top of finished floor to underside of door – this can be increased up to 10mm with the use of a suitable threshold sealing system Principal Doorsets understand the tight tolerances specified, by the rules of BS8214, for smoke controlled doors and recommend that contact be made with Local Building Control or Fire Officer to seek a solution agreeable to all parties prior to doorset manufacture commencing.



The overall doorframe dimensions should be the co-ordinating height and width -5mm (+/-2) on each jamb and -7mm (+/-2) at the head to allow doorframes to be packed up a few millimetres if necessary for the door leaf to swing over high spots of floor coverings.

General guidance is to allow for a 7mm fitting tolerance to both sides and at the top of the doorset from the structural opening.

Recesses for floor mounted closer boxes

Plan pockets to receive closer boxes in reinforcement, floors and screeds. The pockets must be formed and located with great accuracy to co-ordinate with the doorframe position. For projects where underfloor heating is used the planning of closer boxes, within the floor construction, and consideration for fixing of doorstops in advance is critical.

Steel doorsets

- Sides and top of door = 5.5mm maximum (Manufactured to allow 3mm).
- Meeting stile gap on pairs = 5.5mm maximum (Manufactured to allow 4mm).
- Bottom of door to finished floor covering = 19mm maximum.

If no threshold seal is to be used and the door is to stop cold smoke passage through the building then the maximum gap from bottom of door to finished floor covering is 3mm.

Adjusting door sizes

All our doors are made to measure and cannot be cut down unless provisions within the design have been allowed prior to manufacture.

Doors only may be purchased to go into existing openings and these may need reducing to suit existing frames, the minimum lipping thickness allowed on our fire doors is 6mm and the maximum is 20mm, therefore a larger lipping will be required if doors are to be reduced on site.

Doors to go into frames or frames by other manufacturers will need the frames and any back filling checked for compliance with our fire certification, please refer to BS8214 and our certificate.

If in any doubt, please check with our Technical Department or Lead Project Coordinators before carrying out any work on 01237 439152.

Packer materials requirements

Timber frames:

- FD30/Non-Rated – Softwood/Ply/Plastic/MDF.
- FD60 – Hardwood/Hardwood Ply/ (Plastic/Softwood/MDF - provided architraves are fitted or if intumescent paste covers the packers).
- FD90 and FD120 – Non-combustible material e.g. Calcium silicate board.

Metal frames:

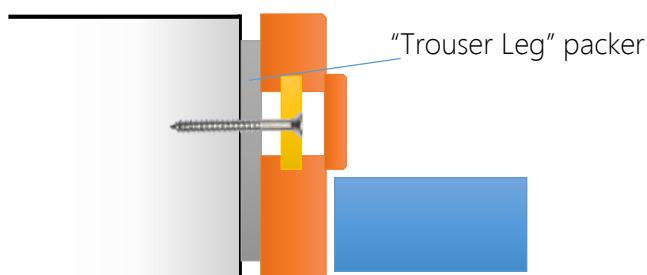
- Non-fire rated – Softwood/Softwood Ply/Plastic/MDF/Steel.
- All fire ratings – Steel.

Note: On our split frame constructions a full-width packer is recommended as it will help to keep the 2nd section in line with the first when fitting.

Pack between the door frame and the prepared opening immediately above each fixing position. Ensure that the door assembly when in position is perfectly plumb and square. Avoid later shrinkage of packers by using packers that are durable, hard and stable. Proprietary "trouser leg" packers are best. Alternatives are off cuts of laminate, metal shims or plywood.



Ensure that jambs are straight, opening gaps are even and in tolerance and that fixing screws do not distort the frame when tightened.



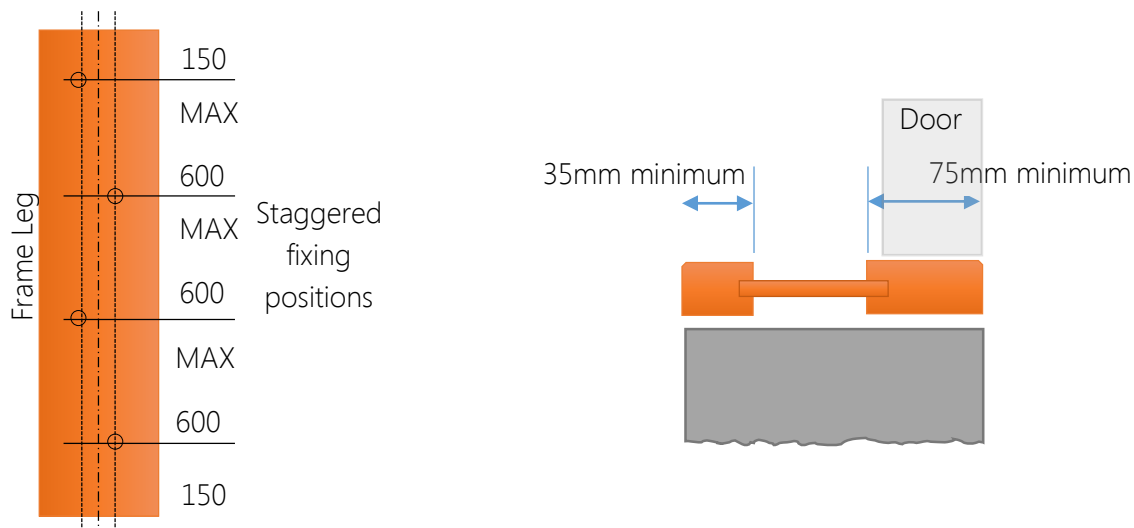
Note: the lateral force at the bottom hinge position can compress packing and metal studs causing the leading edge to drop. Before installing, ensure that studs are secure and fillings are dry.

Packing pieces are not supplied with product.

- Fixing should be kept in from the partition faces to stop the wall material breaking away; we recommend a minimum of 35mm.

Fixing requirements

- To comply with fire test certification you are required to have fixings positioned no more than 150mm from the top and bottom of the doorframe jambs and fixing to the jambs with a maximum spacing between them of 600mm and on frames over 1050mm wide an additional fixing is required to the centre of the frame head. On split frames the section holding the door is required to be fixed in this manner, the secondary section can be fixed in any manner which securely fixes it in place.



- On heavy doorsets paired fixing will normally be required unless specialist fixings are used which are approved by the fixing manufacturer for the door weight.
- All fixings need to be made in to a solid material with a minimum of 45mm of anchorage into the wall construction (70mm for heavy doorsets) soft mortar joints are not suitable fixing points as they will work loose with time.

On heavy doorsets paired fixing will normally be required unless specialist fixings are used which are approved by the fixing manufacturer for the door weight.

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- Fixing should be kept in from the partition faces to stop the wall material breaking away; we recommend a minimum of 35mm.

Screws/bolts should have a minimum shank of no less than 4mm unless fixing manufacturer states their fixings are suitable for the load to be applied on them.

Note: Fixing screws and panel pins are not supplied with product.

Failure to follow these fixing recommendations may, affect fire certification, invalidate any guarantee or cause the products not to operate as specified.

Basic doorset installation steps

- Take the frame and offer it into the opening and level the head or transom rail, this is done by placing packers under the foot of the jambs or by altering the floor level, bearing in mind the required door undercut needed as this will lift or lower the door position.

2. Drill and fix the hanging jamb making sure it is plumb and free from bow and twist, always use packers behind fixing points, you should roughly have an equal amount of packers to both sides of the frame.
3. Drill and fix the lock jamb making sure it is plumb and secured free from bow and twist, sight through the frame jambs to check they are parallel to each other. You may wish to put minimal fixings in at this point until the door(s) are re-hung as adjustment might be required.
4. On doorsets greater than 1050mm in width a fixing is required in the centre of the frame head to stop the frame head sagging.
5. Re-hang the door(s) in the frame.
6. Check you have a 3mm gap around the door(s) and it is flush with the frame, adjust the packing as required to achieve this, making sure when done all fixings are in and have been tightened.
7. Back fill frame as per previous instructions (see back filling section page 6).
8. Fix doorstops and architraves as required. (On high traffic areas and on heavy doors without door closers the door stops will require to be glue fixed as well as pinned or screw fixed in place).

Fix loose doorstops after all adjustments have been made. Fit to suit the shape of the door leaf, permit an easy latching action to ensure any seals are in correct contact with the door leaf face.

Doorstops can be pinned or screwed into position at centres that ensure that the doorstop is in full contact with the doorframe face at all times.

Where wide doorstops are being used it may be necessary to apply parallel or staggered fixings to ensure good fit.

Special installation notes

The following are some unique points you need to know regarding our more specialised products these should be read in conjunction with the basic doorset installation guidance.

Special Frames for X-Ray

All these doors and doorsets are heavy and all the recommendations for large or heavy doors and doorsets must be adhered to. Fischer through fixings



FUR 10 or similar should be used ensuring that gap between the frame and the wall are fully packed for fire resistance. After installation architraves are fixed around the frame ensuring that those with lead inserts are fitted on the "attack" side (usually the same as the door is hung from). These should be counter bored and screw fixed.

Non-Combustible doorsets

The non-combustible doorframe is made from a mineral core to achieve the high fire performance. The material is strong but is also brittle and care is needed when moving the frames into position. The frame jambs can snap if too much force is used to bend/move them.

Non-combustible doors are always supplied on lift off or loose pin hinges, as the mineral core will break down if screws are repeatedly inserted and removed. If this happens a plastic plug bonded with epoxy adhesive can be used to form a new fixing point. This method of repair can be used for any fixing on the doorset.

Door handles and pull bars should be fixed with bolt through fixings only.

Fix architraves to doorframe with pins and glue.

Non-standard intumescent sealing

In general terms Principal Doorsets use PVC encased intumescent seals that are recessed either into the lining/frame or door edge.

Principal Core FD30 doors are required in excessive sizes (e.g. 3456 x 808 single latched leaf (other dimensions are available within certification) these are permitted to use Lorient 617 product.

Wide Access Articulating doorsets

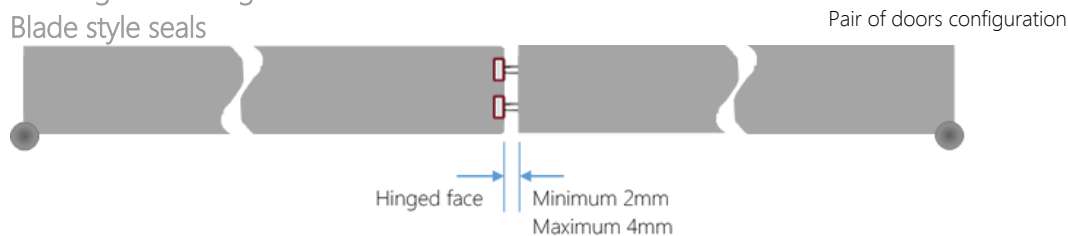
A full range of wide access doorsets are under construction and test. We have designed a range that uses common parts across this range. Contact Technical or a Lead Project Coordinator for up to date information.

Acoustic doorsets

Extreme care must be taken not to damage the seals fitted in the bottom edge of the doors, any damaged seals will need replacing to achieve the door set's optimum performance. (Note: The seals are deliberately cut 3mm longer than the door width to both sides of a door to seal the bottom corners).

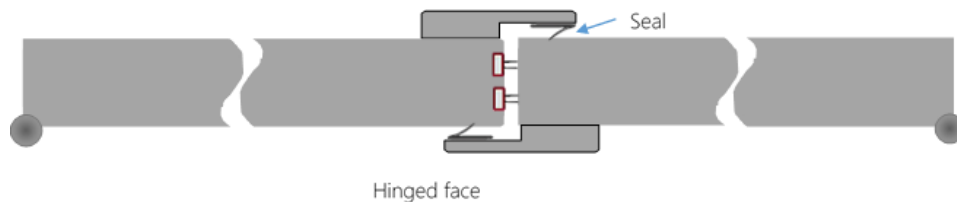
Meeting stile arrangements

Blade style seals



The seal arrangements will vary subject to your required performance needs.

Compression Style seal



Astragals arrive fully fitted to pairs of acoustic doors to ensure maximum performance. Removal or adjustment to the arrangement may significantly damage the acoustic performance of the doorset.

Doorstop seal arrangements



The Batwing acoustic and smoke seal minimises the opening and closing resistance of the door leaf.

- Flexible elastomeric fin material springs back to original shape providing durability.
- Acoustically tested in accordance with BS EN ISO 10140-1: 2010 +A1: 2012 and proven to meet the requirements of Approved Document E. Will achieve a rating of 31dB Rw when tested on a typical FD30 door assembly, in conjunction with a LAS8001 threshold seal - no additional perimeter seals are required.
- Effective smoke seal up to 200°C.
- Variety of colours to blend/contrast (DDA) with door designs.
- Fully tested for performance and durability.
- Tested to 1,000,000 opening and closing cycles on a full size door assembly, without failure

Door seal arrangements

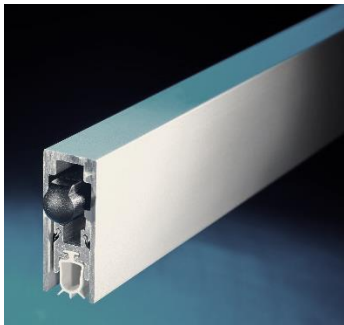


The complete solution for acoustic, smoke, fire and thermal containment.

- A range to cover both 30 and 60 minute applications.
- Successfully tested for fire and smoke performance in accordance with both BS 476 Pt 20/22 and also BS EN 1634-1:2008.
- Proven acoustic performance - tested in accordance with BS EN ISO 10140-1: 2010 +A1: 2012 and proven to meet the requirements of Approved Document E. Will achieve a rating of 31dB Rw when tested on a typical FD30 door assembly, in conjunction with a rubber gasket or a door bottom or drop seal.
- Exceptionally low frictional resistance for ease of door operation (Approved Document M).
- Available in a range of colours, with black fins – to blend/contrast with surroundings.
- Available with antimicrobial technology.

Threshold seal arrangements

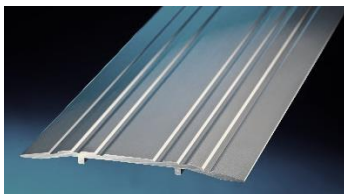
Note: gap dimensions are recommended to obtain optimum performance for acoustic solutions. If you require a specific design please consult our technical department or Lead Project Coordinator for further guidance.



An aluminium-based drop seal for acoustic, smoke and energy containment. It features a high efficiency mechanism which lifts the seal clear of the floor as soon as the door is opened by a few millimetres.

- Tested for acoustic performance in accordance with BS EN ISO 10140-2: 2010.
- Tested under the conditions of BS EN 1634-1: 2008.
- It requires no power connection.
- Tested for reliability, the seal completed 1,000,000 cycles without failure.

Location - Single swing doors. For use on both right and left handed doors.



Low profile threshold plates, only 6mm high.

Key benefits

These plates, when used in conjunction with threshold (door bottom) seals prevent rain, draught, and smoke penetration.

Location - Single and double swing doors. **Use with** - Practically any threshold (door bottom) seal.

The seal arrangements can vary subject to your required performance needs.

ON SITE COMPLETION

FINISHING

At Principal Doorsets we recommend that doors frames and doorsets are supplied factory finished whenever possible to minimise the need for work on site. Where products are to be painted on site they will be delivered factory primed and will require de-nibbing by lightly sanding before decoration. Top and bottom edges of the doors must be sealed/painted. Under no circumstances should the BM Trada Fire dowel identification be painted over.

COMMISSIONING

Performance doorsets should be considered as "late second fix" items installed after all wet trade works have been completed and the building has dried out. Following installation steady temperature and humidity levels should be maintained and care taken to avoid excessive temperature fluctuations. 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 doors should be left slightly open with closer arms disconnected. Doors held open with wedges against a door closer action will induce twist.

COSHH AND CDM REGULATIONS

After installation all substances used in our doors frames and doorsets are innocuous in normal use. The dust of some hardwoods may cause irritation when being worked during installation or maintenance and normal industrial hygiene measures should be observed. In case of fire dry powder CO², water or halon may be used. Laminates, PVC and sheet plastics will give off dense smoke in fires containing hydrogen chloride gas, carbon monoxide and other noxious emissions.

CLEANING

Painted and decorated laminate facings can be cleaned with a soft duster or warm water and a non-abrasive detergent. Veneer facings can be cleaned with a soft duster or if required furniture polish applied after dusting. PVC facings can be cleaned with warm water and a non-abrasive detergent or where needed suitable proprietary anti-static solutions. Only soft "lint free" cloths should be used.

INSPECTION SCHEDULING

It is recommended that a schedule be prepared at intervals to suit usage of the building generally as follows:

1. Medium Duty usage – inspect every 6 months
2. Heavy and Severe Duty usage – inspect every 3 months
3. External usage – inspect every 3 months and prior to the winter

Recording of the condition of doorsets should be kept for later inspection and use for statistical analysis.

CHECKS AND REPAIRS

The following checks and repairs should be made at the above intervals:

1. Scratches and impact damage to facings and lips to edges
2. Damaged glass to vision panels (which will impair performance of the fire doors) to be replaced
3. Damaged perimeter seals to be replaced
4. Missing fire door signs to be replaced
5. Loose screw fixings to ironmongery to be tightened
6. Adjustment in the hanging of a door to ensure perimeter margins are maintained within standard.

In addition flush bolts and locks should be checked and oiled as necessary while door closers should be checked for correct adjustment and any leaks. Some specialised items of ironmongery may require shorter inspection intervals. It is important that the BM Trada fire plug on any fire door remains intact and not defaced to maintain certification.