



**FIRE DOOR
MANUFACTURING
DIVISION**

**CALEDONIAN PLYWOOD COMPANY LTD
(CPC LTD)
FIRE DOOR INSTALLATION AND
MAINTENANCE GUIDANCE**

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Fire Door Maintenance

Fire doors are intended to facilitate a similar level of fire resistance as per the structural elements of a building. However, since doors are often opened and closed many times a day, it is important therefore for regular inspection be performed.

Fire doors should therefore be examined at six-monthly intervals as follows;

- Recommended clearance of 3 mm (between door and frame) along head, down sides

- Where applicable, any signs of damage, to glass or glazing system as the glass and glazing system are critical to the performance of the fire door.

- Fire and smoke seals (as maybe fitted) for any signs of damage, degradation or missing in part or total, as either of these will have serious implications on the fire door performance

- Hinges should be inspected for signs of wear. Worn hinges should be replaced with those that perform in accordance with the latest edition of BS EN 1935

- Ensure that (where fitted) the latch or lock furniture moves freely and engages fully. Damaged or badly worn latch or lock furniture should be replaced immediately

- Self-closing devices should be examined to ensure it closes the door leaf properly. The door should close effectively from any angle. There are a number of reasons why doors may fail to close
 - Check that there are no foreign bodies or other objects obstructing the door.
 - Check that any smoke seals (as maybe fitted) remain correctly fitted and are undamaged.
 - Check the latch (if fitted) to ensure correct operation

Any self-closing device (as maybe fitted) which is unable to be effectively adjusted should be replaced using a closer that has been validated by test for use on a door assembly of similar specification, and performs in accordance with the latest edition of BS EN 1154.

It is not easy to repair doors and maintain the interactive behaviour of the various component parts, and except for minor repairs to 30 minute fire rating door leaf which CPC Ltd recommend are performed via a professional source, where significant damage is detected the door leaf should be replaced in total. Door leaves providing a 60 minute fire rating or higher should be replaced, not repaired

Note: In the event of damage that necessitates the replacement of one leaf of a double door, both leaves should be replaced with a new matching pair. As a commitment of continuous improvement and possible changes of legislative requirement, would make it virtually impossible to ensure that a replacement single leaf would be of identical construction to that being removed.

Fire Door Decoration

Fire door leaves are generally not required to provide a specific surface spread-of-flame barrier, and may therefore be re-decorated as desired.

Whilst suggested that the over painting/varnishing intumescent seals does not have detrimental effects, it is recommended that such action is limited to a maximum of 5 (five) coatings

Where intumescent seals are incorporated within the doorframe the use of heat or chemicals in preparation for re-coating should be avoided

Certified fire doors supplied by CPC Ltd are permanently marked with their declared fire resistance period by means of a colour-coded plug(s). It is therefore recommended to avoid painting over the plug(s) during re-decoration



General

It is important that individual sets are installed strictly in accordance with the instructions given in their respective global assessments (available on request) and the following information is given as general guidance only.

Details contained within this document refer to recommended minimum requirements for fire rated finished door leaves and doorsets for installation as supplied by CPC Ltd. The door leaves and doorsets supplied have been tested to the latest edition of BS 476: Part 22, and are independently certified as achieving fire resistance up to 30, 60 minutes or higher as applicable to the fire rating specification, when installed in accordance with the following conditions:

Storage

Fire door leaves and doorsets are internal 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 preferable in a ventilated building.

Door leaves and doorsets that are clear lacquered or varnished should be subject to storage that protects them from being unevenly exposed to sunlight.

In addition, door leaves 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.

Suitability of Structural Opening

It is the installer's responsibility to ensure that structures to receive fire doorsets comply with National and Local Regulations and that they are suitable for the design performance.

Note: *Installers are recommended to refer to the applicable parts of the latest edition of BS 5588 Fire Precautions in the Design and Construction of Buildings for further guidance.*

The fire test/data applicable to doorsets manufactured by CPC Ltd anticipates that they will be fitted into block wood, brickwork, concrete, timber, or metal stud partitioning, unless the partitioning manufacturer (as applicable) can provide fire test/assessment data to demonstrate that this is not necessary.

Where doorsets are to be fitted into metal stud partitioning, the hollow metal stud at the doorset positions should be filled with softwood solid packer (being continuous for the full doorset height/width) between the opening in the supporting structure and the rear face of the frame member of the doorset. The finished partition thickness should not be less than the thickness of the doorframe.

Doorset Installation

Recommendations for the joint between timber door frames and the supporting structure should not exceed 10 mm, and for 30 minute fire rating doorsets should be filled with non-combustible material i.e. mineral or glass wool, or either intumescent mastic or for 60 minute fire rating doorsets the inclusion of a 2mm x 10mm intumescent strip on the reverse of the frame.

Further details for gap filling between timber door frames and the supporting structure of more than 10mm can be found in the latest edition of BS 8214, Code of practice for fire door assemblies with non-metallic leaves section 9.4 and table 2 or 3, according to fire doorsets rating performance.

Doorset frame jambs must be fixed to supporting structure using steel fixings at 500mm maximum centres, and 100mm from corners, and be of an applicable type for the supporting structure and must penetrate the same to a minimum depth of 50mm.

Whilst it is not deemed necessary to fix the frame head (except for a recommendation to inset at least one fixing in double door applications), it is recommended that packers be inserted between the frame head, and the head of the supporting structure.



Installation Instructions for Fire Doors and Frames

ENSURE CERTIFICATION AND COMPATABILITY

All Fire Doors must have a clear identification plug (BM Trada/Exova Q Mark) to identify the Fire Rating, Manufacturer's name & traceability.

FIXING

Structural Opening

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

- Gaps up to 10mm must be sealed both sides with 10mm depth of Acrylic intumescent mastic
- Gaps Between 10-20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of Acrylic intumescent mastic

Frames

- The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres.
- The fixings must be suitable for the supporting construction and must penetrate to a minimum of 50mm
- It is not necessary to fix the frame head

GAPS

Door edges

- Minimum 2mm & maximum 4mm

Alignment Tolerances

- Door Leaves must not be proud of each other or the door frame by more than 1mm
- Threshold - 10mm Between bottom of door and top of floor covering

ALTERATIONS

- Lipping's may be reduced by 20% for fitting purposes

IRONMONGERY

- HINGES

Leaves <2400mm (h) must be hung on 3no hinges. Leaves >2400mm (h) must be hung on 4no hinges

Blade Height 90 - 120mm

Blade Width 30 - 35mm

Blade Thickness 2.5 - 4mm

Position for 3no hinges

Top 100 – 180mm from head to top of hinge

2nd Min 200mm from top hinge or centrally fitted between top & bottom hinge

Bottom 150 – 250mm from bottom of leaf to bottom of hinge

If 4no hinges are required

Top / Bottom position as above with 2nd & 3rd hinges Equispaced between top & bottom

Or 2nd hinge 200mm from top hinge & 3rd hinge equally spaced between 2nd & bottom

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- LOCKS

Latches & Locks must either be as tested or alternatively with the following specification are acceptable.

Maximum forend & strike plate dimension 235 x 25 x 4mm thick

Maximum body dimension 18mm thick x 100mm wide x 165mm high

- CLOSERS

Face fixed or concealed overhead closers may be used if to Standard EN 1154

And must either be as tested or components of equal specification that have demonstrated contribution to the required integrity performance of this type of doorset design when tested to BS476 PART 22 OR BS EN 1634-1

The top pivots to floorspring assemblies must be protected with 2mm thick intumescent gasket or alternatively the manufacturers tested intumescent pack

- INTUMESCENT SEALS

Edge seals fitted into the Frame Jambes or Leaf edges

Hinges require 1mm Interdents underneath both blades - FD60 Only

Lock/Latches 1mm Interdents under Forend & Keeps

Top Pivots & Flush Bolts 2mm Interdents

Hanging Door Leafs

When hanging door leaves as supplied by CPC Ltd the frame materials for use with the same should comply with the recommendations to be found by reference to the latest edition of BS 8214

Frame material for FD 30 doorsets maybe softwood or hardwood of not less than 510 Kg/M³ density at 15% moisture content. Where as frame material for FD 60 doorsets must be hardwood of not less than 640 Kg/M³ density at 15% moisture content.

Frames must be plumb and square and assembled with traditional joints with appropriate woodscrews (joints maybe glued, and screwed). All joints should be of a tight fit. During the hanging process, an equal gap of 3 mm (+/- 1mm), is to be maintained across the head and down both jambs, and up to a maximum of 10mm at the threshold.

The gap between the door and frame and at the meeting stile of double doors should also not exceed 3mm (+/- 1mm).

Glazed apertures can potentially be the weakest part of any fire door if glazed incorrectly and it is for this reason that the cutting on site of apertures for glass is strongly deprecated by CPC Ltd, as any non-factory controlled cut-outs and glazing may severely reduce the likelihood of the door maintaining its integrity when exposed to fire and additionally invalidate the fire door certification.

Ironmongery such as hinges, closers, locks, and latches are recommended to be bedded on low-pressure intumescent e.g.

- Fitted beneath the hinge blades on leaf and frame
- Encasing latch body
- Fitted under the latch forend and under the latch keep.
- Use of Intumescent gaskets supplied with door closures (as applicable).

Following the fitting of any ironmongery, it is important to check that the same move correctly, particularly that any fitted closures overcome the latch resistance.



Over Panels

Over panels must be fixed through the rear of the doorframe with steel woodscrews passing at least 30mm into the over panel. Fixings are to be spaced at a maximum of 300mm centres, and no more than 100mm from each corner

Architraves

The utilisation of architraves is commonly used with fire doorsets supplied by CPC Ltd

The intention of the architrave is to cover the gap between the frame and the supporting structure thereby providing for a minimum cover over the edge of the supporting structure and a nominal 15 mm cover over the doorframe

The varied use of Intumescent mastics, ceramic cords or similar products may be used in lieu of architrave where such products have a proven performance under fire test conditions with wood doorsets.

Note: Such materials as described above must be used strictly in accordance with the appropriate manufacturer instructions

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