

IDD 033C - Fire door sets (External use)

Why are fire door sets important?

Fire doors are one of the most important features of a building's fire precautions and have two key functions:

- To protect escape routes from the effects of fire so that occupants can reach the exit
- To protect building occupants and fire fighters by limiting the spread of fire.

What do we mean by 'fire resistance'

Fire resistance means that the building element is capable of resisting the passage of flame and smoke, and providing insulation, under the prescribed test conditions in accordance with the current British Standard 476.

- FD30 doors (30 minutes fire-rated)
- FD60 doors (60 minutes fire-rated).

Note: In any dwelling or communal area the minimum fire resistance required is FD30.

Where fire door sets are required within communal parts of blocks of flats

FD30s door sets are required in the following locations:

- Flat entrance doors*
- Doors enclosing staircases
- Cross corridor partition doors
- Doors to storerooms, plant rooms, service ducts, and intake cupboards
- Doors to bin chute rooms
- Doors to communal kitchens, tea points and laundry rooms
- Doors leading onto external fire escapes (except the top storey door)
- Doors between basement accommodation and upper floors
- Doors protecting dead end corridors (where escape is only available in one direction).

*Flat entrance doors are not required to be fire rated for flats accessed from an open balcony / walkway where there are two directions of travel i.e. residents can exit their property and can turn either left or right and reach a staircase / exit door, that will take them outside of the building.

How do I know if an existing door set meets this standard?

There are a few simple checks you can complete which will indicate if the door is a FD30s door or not:

1. Tap / knock the door – Fire doors have to be of solid timber construction, if the door sounds hollow, it is unlikely to be of sufficient construction
2. Measure the width of the door itself (the thin edge) – FD30 doors must be a minimum of 44mm (4.4cm) in thickness. If the door has panelled sections and the thickness of these timber panels is less than 44mm in thickness (i.e. they are thinner than the surrounding parts of the door) it is unlikely that the door is of sufficient construction
3. There are three hinges fitted, which bear the CE mark (please see picture of hinge in 'ironmongery' section below)
4. Look for a coloured plug in the door itself or any markings which may indicate the door has been certified by either TRADA's Q-Mark Scheme or BWF's Certifire scheme (see section below on 'new timber fire door set specification' for details of markings)
5. If the door has a glazed panel(s) within it, the glass should either be georgian wired or have a special fire resistant glazing fitted (this will be indicated by an etched mark 'BS476:22'). If the glazing does not have either, its unlikely that the door is of sufficient construction
6. All modern fire doors now come pre-fitted with intumescent or smoke seals (or a combination). If the door has been replaced the door in the last two to three years and the door isn't already fitted with these seals, its unlikely to be a fire door. Further guidance on intumescent seals can be found below
7. **Unfortunately UPVC doors are not currently accepted as fire doors.**

If the door meets all of the above criteria and is fitted with a self closing device (either an overhead closer or an integrated jamb close – as detailed below) it is likely that it meets the standard and will perform effectively in a fire.

Can you upgrade a current door rather than replace it?

Upgrading existing door sets should be avoided unless the door is required to be retained as a requirement of planning or listed building consent and the door has been assessed by a suitably qualified person and deemed suitable for upgrade. Please contact CityWest Homes' health and safety team to have a door assessed.

There are several accepted methods of upgrading doors that have been subjected to fire tests. Details of these can be found in the TRADA technical guide: 'Fire resisting door sets by upgrading', which can be downloaded from www.trada.co.uk.

Whatever method of upgrading is selected, a valid and complete fire test report or assessment report by a suitably qualified person must be provided by the homeowner on completion of works. Where this is not provided, CityWest Homes will not accept the door and require that it is replaced with a new door set.

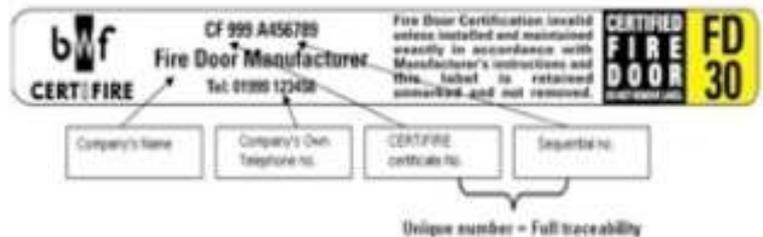
New timber fire door set specification

All new fire door sets to flats are to be to FD30s standard in accordance with BS476: Part 22 1987 or BS EN 1634-1 2000 and must be manufactured by a third party certified manufacturer.

A test certificate for all replacement doors should be provided by the contractor supplying/ fitting the door confirming that the door set meets this standard.

Alternatively, fire door sets should be marked in accordance with TRADA's Q-Mark Scheme or BWF's Certifire Scheme.

Images below show TRADA's Q-Mark Scheme and BWF's Certifire Scheme marks.



Door frames

The selection and installation of door frames is as important as the door itself. Where purpose built frames are installed they should be matched with the recommended door as the fire resistance of one may depend on design features of the other.

Note: Metal fire doors must not be installed in existing timber door frames or vice versa.

In limited circumstances it can be acceptable for a purpose built door to be installed in an existing frame – please seek advice from the door manufacturer. A valid and complete test report from a suitably qualified person to confirm that the door set will achieve the necessary fire resistance is required.

Whichever method is adopted the following guidance should be considered:

- Any gaps between the rear of the frame and the wall must be filled with an Alcoxy based intumescent sealant

- When intumescent material on a frame faces the same on the door edge, they must be of the same type
- Door frames will not be accepted if they are less than 30mm thick for FD30 doors and 44mm thick (hardwood) for FD60 doors unless accompanied by a relevant test certificate
- Steel doorframes are subject to distortion when heated and will only be accepted if a relevant test certificate is provided.

To prevent failure, contractors must ensure that fire door sets on site are installed in accordance with the manufacturer's specification and in accordance with BS 8214 and installation should always be undertaken by a third party certified fire door installer.

Ironmongery

All FD30s door sets must incorporate Grade B assemblies, tested in accordance with BS EN 1634 -1 2008 which bear the CE mark;

- Flat entrance doors should be fitted with a concealed jamb closer controlled closing in accordance with BS EN 1154 (Perko R100 Powermatic closer BRS or similar approved CE marked in accordance with BS EN 1154 1997)

Image below shows a concealed jamb closer.



- 3no butt hinges to BS EN 1935 (sized in accordance with table 1 of the BS EN). Hinges should be secured with a minimum of 8 screws 30mm in length.

Image below shows a butt hinge to BS EN 1935.



- Door lever handles and locks to BS EN 1906 Annex C and BS EN 12209 (cylinder locks to BS EN 1303)
- Pull handles to BS EN 8424.

Intumescent seals

Door edges are the part of a door set most susceptible to fire penetration. The pressure of a developed fire drives hot gases between the door and frame leading to loss of integrity of the door.

Traditionally, this weakness was countered using a large doorstop. However, this method relied on a very close fitting door with a gap of less than 3mm between door and frame.

The modern solution to this problem relies on the use of intumescent materials applied or set into the edge of doors or doorframes opposite the door edge. Intumescent materials expand at around 100 degrees centigrade to several times their original size and fill the gap between the door and the frame.

An intumescent strip can be fitted either in the frame or in the door edge itself and must follow the centre line of the door edge, all new door assemblies will come with the intumescent seal already incorporated.

Note: An intumescent strip must never be fitted to the door stop as the door will be forced open when the strip expands.

Image below shows a smoke seal being fitted to a door frame.



The following rules apply to the retro fitting of intumescent seals:

- They are applied along the top edge and sides; intumescent material is not required along the bottom edge
- There are several types of intumescent material and it is important to use the correct type as specified by the manufacturer of the door set. The differing types are not interchangeable
- Installing a combined intumescent and cold smoke seal is preferred
- On fire doors of 30 minutes fire resistance, it is acceptable to interrupt the intumescent strip for hinges or latches

- The long-standing requirement to provide oversize doorstops on fire doors is no longer applicable to doors with edges fitted with intumescent protection. A 12mm planted stop fixed with nails is acceptable in this case
- Intumescent materials must not be reduced in size during installation by planning or sawing. In particular, installers should be aware that some are fitted beneath veneers or door trims.

Note: All new / replacement fire door sets are to be fitted with a combined rebated intumescent and smoke seal (brush style, indicated by suffix 's') in accordance with BS476 Part 31.1 1987. Exfoliating Graphite preferred.

Glazing in fire door sets, glazed partitions or fan lights

If a vision panel or glazing (i.e. fan light) is required in a fire door then the glazing has to be fire resisting glazing to 30 / 60 minutes integrity (FRG30/60) meeting BS 476: Part 22 – 1987 – Fire tests on building materials and structures – methods for determination of the fire resistance of non-load bearing elements of construction.

All glazing is required to be georgian wired so that the CityWest Homes health and safety team and other technical staff can confirm the fire resistance of glazed elements, unless there is a specific justification for varying from this standard to comply with planning or listed building requirements.

Image below shows georgian wired glazing.



Where clear fire rated glass is installed (Pyro) it must incorporate a clearly visible acid etched trade name or reference to BS476-22 on the surface of the pane.

If the glazing is not clearly marked, CityWest Homes will not accept the glazing as FRG30 and will require its removal at the homeowner's cost.

Note: Safety glazing marked with BS 6206: 1981 / BS 6262 is not fire resisting glazing. Double glazing units in doors or side screens or fan lights is equally unacceptable, a double glazed unit provides no more fire resistance than a single pane of glass.

Decoration of fire doors sets

There is no requirement to decorate fire doors utilising Class O paint finishes. Care should be taken however not to apply more than five coats of paint over door seals.

Further information

For additional information about fire door sets please contact your area repairs surveyor or lessee services.