BS 8214: 2016 Timber-based fire door assemblies – Code of Practice

Published November 2016.
Guidance and recommendations for the specification, installation and maintenance of timber-based fire doors (up to 2 hours fire resistance), covering fire door assemblies and door leaves.

Note: This CoP does not cover doorsets, which are defined under EN standards to be the complete door in its entirety for installation, including the frame and all components, from a single source.

Content includes the fire resistance classification of fire doors, specification, identification and marking, installation, doors and frames, glazing, handling and storage, installation, hardware, smoke and fire seals, decoration on site and maintenance. Pafrticulalry important guidance is as follows.

Sealing between the frame and the surrounding structure

Section 9.4.1 provides a number of robust details as standard solutions recommended for the sealing of the joint between the frame and the structure, summarised in Tables 2 to 5, noted by the standard as "appropriate for the fire performance required." (Section 0.2 for the rating of fire door assemblies clearly recommends that "performance is tested in accordance with either BS 476-22 or BS EN 1634-1.")

Tables 2 to 5 should be read and applied in accordance to section 9.4.2, where recommendations are particulalry made on the use of mastics and expanding foam sealants. Restrictions are placed on the sealant that can be used. Important guidance includes the following:

a) Mastic and expanded foam materials should be approved for use as a linear gap seal successfully tested according to BS 476-20 or BS EN 1366-4.
b) Use is conditional on the mastic or expanded foam having test evidence for the structure that is being used (e.g. timber to concrete, concrete to concrete, flexible partition to timber, flexible partition to concrete). Restrictions apply unless appropriate test evidence is available.
c) Expanded foam is tested uncapped on both faces with a minimum gap width of 20mm and a maximum fill depth of 100mm.
d) An alternative provided by the standard is for mastics and foams to be used which have been included in a fire resistanmce test on a door assembly according to BS 476-22 or BS EN 1634-1 for the sealing arrangements to the structure, as proposed and applied.

ASDMA preferred best practice guidance is that the sealing arrangement to be used should be based on such a full door assembly fire resistance test.

The marking of glass (Section 10)

Fire-resisting glass should be "permanently marked as a minimum with the glass name, glass supplier's name and the applicable glass performance classification. Marking should be permanent and clear, able to be read after installation. Glass should not be marked on site at the installation, or later."

These stipulations should be carefully noted. There are cases of printed marking on glass rubbing off during use. That is entirely unacceptable, especially according to fire safety law under the Regulatory Reform (Fire Safety) Order 2005. * Door manufacturers are advised to include a reminder to glass suppliers when placing orders, as a standing requirement - using the above reference paragraph.*

The cutting of apertures (Section 7.5 general guidance; Section 10, glazing; Section 11, hardware))

"Apertures should only be cut into doors that are designed to receive apertures, and should therefore only be fitted into a fire door under the control of the door manufacturer."

"Apertures should not be cut on site unless this is carried out by a competent person in accordance with the test evidence and the manufacturer's recommendaitons."

The position and size of any cut-outs should be the same as the arrangements previously tested or assessed based on test evidence.

Section 10 recommends that glazing should be carried out in the door factory exactly as specified because of the need for close supervision and attention to important details, according to test evidence. Any apertures for glazing not covered by the applicable test evidence, or which are outside the defined scope of applicable certification, will invalidate approval of the door assembly for use as a fire door.

The standard reminds that "cutting into the body of door leaves that are not designed to take apertures can critically weaken the door and undermine designed fire performance."

*The guidance provided by BS 8214 in these respects may well prove useful in cases where modifications are proposed to existing doors *in situ* to comply with fire safety requirements under the Regulatory Reform (Fire Safety) Order. Such modifications are not acceptable solutions at all.*

Threshold smoke seals (Section 12.3)

The threshold gap is known to be an important consideration – arguably the most important factor – determining smoke leakage under ambient conditions (since smoke inhalation is known to be a major killer and an important consideration for safe escape). This can be an issue for door manufacturers when they are not provided with details of the situation on site where the door is to be used.

BS 8214 provides important guidance that: "The threshold gap in practice when the door is fitted can be significantly influenced by the type of floor/floor finish, and the degree of flatness of the floor across the opening arc of the door. Neither of these is determined by the door manufacturer, and if a particular gap is required then it is expected that this will be identified in the original door specification."

The main guidance provided in Section 12.3 is as follows:
"When installed, the threshold gap should, where practicable, be sealed by a flexible edge or automatic drop seal. Either with a leakage rate not exceeding 3 m^3/hr per metre at 25Pa when tested to BS 476-31.1 or BS EN 1634-3, or just contacting the floor, giving even contact with the floor but not exhibiting significant increased frictional forces that could interfere with the closing action of the door. Where this is impracticable the threshold gap should not exceed 3mm at any point."

Maintenance and Replacements (Section 13)

It is important for inspection, maintenance and repairs to be undertaken on a regular basis. And the original specification and markings on components should be taken as the guide. In particular, if a seal is damaged or missing in part then the entire length or section should be replaced (to the same formulation, dimensions, and configuration as original). Also, any changes to the glazing should be according to the original glazing system specification (and the glazing pocket cleaned of any debris).

ASDMA guidance is for fire doors and components to be backed by rigorous third party certification.

For further details please contact ASDMA