

### AUS National Construction Code (NCC) Spec. C3.4

Class 2 - Class 9 buildings

#### 3.2 Construction deemed-to-satisfy

A smoke door of one or two leaves satisfies Clause 3.1 if it is constructed as follows;

- (a) The leaves are side-hung to swing—
  - (i) in the direction of egress; or
  - (ii) in both directions.
- (b) (i) The leaves are capable of resisting smoke at 200°C for 30 minutes.
- (ii) Solid-core leaves at least 35mm thick satisfy (i).
- (c) The leaves are fitted with smoke seals.
- (d) (i) The leaves are normally in the closed position; or
- (ii) (A) the leaves are closed automatically with the automatic closing operation initiated by smoke detectors, installed in accordance with the relevant provisions of AS1670.1, located on each side of the doorway not more than 1.5 m horizontal distance from the doorway; and
- (B) in the event of power failure to the door, the leaves fail-safe in the closed position.
- (e) The leaves return to the fully closed position after each manual opening.
- (f) Any glazing incorporated in the door complies with AS 1288.
- (g) (i) If a glazed panel is capable of being mistaken for an unobstructed exit, the presence of the glass must be identified by opaque construction.
- (ii) An opaque mid-height band, mid-rail or crash bar satisfies (i).

### NZ Building Code Compliance Document

#### Clauses C1, C2, C3, C4 Fire Safety

##### Smoke control door

A door set with close fitting single or multi-leaves which are impermeable to the passage of smoke, fitted with smoke seals and installed within a smoke separation. The door, in the event of smoke, if not already closed, will close automatically and be held closed.

#### 6.19.2 Door sets which are required to be:

- (a) Fire doors, shall comply with Paragraph C8.1 of Appendix C.
- (b) Smoke control doors shall, except as required by Paragraph 6.19.4, comply with Paragraph C8.1 of Appendix C. Smoke seals shall be fitted at the head and all vertical edges in the gaps between the door leaf or leaves and the frame, and between leaves in multi-leaf door sets.

**Clause 6.19.6** Door sets shall be clearly marked to show their FRR and where required to show their smoke stopping capability.

Comment: A door marked -/60/30 Sm would be a fire door with an integrity of 60 minutes, and an insulation of 30 minutes, which may be used as a smoke control door. A door marked -/-/ Sm would be a smoke control door only, with no FRR.

### UK / EU Building Regulations

Within Approved Document B, certain door sets within a building are identified as where smoke control door sets are required; tested to BS 476 Section 31.1 or EN1634-3 1983 Method for measuring smoke penetration through door sets and shutter assemblies. Those door sets identified as smoke control doors designated by a S after the fire rating, i.e., FD30S, FD60S etc., should have a leakage rate not exceeding 3 m<sup>3</sup>/m/h from the head and jambs when tested at 25 Pa pressure.



### Related Building Codes

There are several standards, which refer to seal properties and testing for fire and smoke:

#### AUS / NZ

Requirements are noted in the Australian National Construction Code (NCC) and New Zealand NZ BC Compliance Doc. C.

#### UK / EU

Requirements are noted in the British Building Regulations Approved Document B.

#### USA

Requirements are noted in the Building Code and the Residential Code IBC 2000.

For further details, refer to Standards / Authorities on page 118.