

# Fire formal interpretations

25 July 2013

**FI-108**

NZS 4512:2010 *Fire detection and alarm systems in buildings* – Clause 405.1.3

## Question:

In an apartment complex fitted with a Type 5 fire alarm system the escape route/corridor from the apartment bedrooms passes through the lounge/kitchen within 5 m of the cooking apparatus. Outside along the apartment entrances is a fire-separated covered walkway, open to the air on one side.

- (a) With reference to 405.1.3(h)(ii), is substitution of smoke detectors with heat detectors permitted in the escape route/corridor from the bedrooms through the kitchen area?
- (b) Where the escape route from the bedroom passes within 5 m of a cooking apparatus, is substitution of smoke detectors with heat detectors permitted per 405.1.3(d)?
- (c) Does the 30% maximum substitution area of 405.1.3 apply to escape routes?
- (d) The main egress route, being the outside walkway, is allowed to be protected with heat detectors. Why are the requirements for the walkway different to the kitchen area inside the apartment?
- (e) Is substitution of smoke detectors with heat detectors permitted by 405.1.3(c) in walk-in wardrobes of any size from small to 5 m<sup>3</sup> and upwards?

## Interpretation issued by the Alarms and detection group:

- (a) No. The escape route itself must have smoke detectors throughout, and these must be at the normal spacing. Substitution may be possible in adjacent areas that are not directly on the escape route.
- (b) No. The specific prohibitions of 405.1.3(h)(i) through (iv) override the permissions to substitute in the rest of 405.1.3. These prohibitions match specific requirements of the New Zealand Building Code Compliance Documents. Smoke detector(s) should, however, be situated as far away from the cooking apparatus as the spacing rules allow.
- (c) 405.1.3 does not allow substitution within the escape route itself, however the escape route counts towards the total area.
- (d) An external walkway is quite different from an escape route within an apartment. A fire is much more likely to occur within an apartment, and smoke is much more likely to hinder escape within an apartment than in an open walkway. A walkway only provides a place of safety if an apartment occupant is able to reach it.
- (e) Yes, provided the wardrobe is not part of the escape route from a sleeping space, see 405.1.3 Note 2.

NOTE – The New Zealand Building Code (G4.3.3) has mandatory requirements for effective ventilation to remove cooking fumes, odours, moisture, and the like from the space in which they are generated.