

Scottish Government Building Standards Ministerial View Reference V2019/5

Functional Standard 2.9 Escape

Standard 2.9 (Escape) states: “Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, the occupants, once alerted to the outbreak of the fire, are provided with the opportunity to escape from the building, before being affected by fire or smoke.”

Verifier

Glasgow City Council

Technical Context

The subject of the view is the alterations and conversion of a 4 storey office building to a 4 storey dwelling house.

The view of Scottish Ministers

On behalf of Scottish Ministers, the Building Standards Division has considered all the information submitted in this case and their view is set out below.

Table 2.3 to clause 2.9.2 allows the use of a suppression system in lieu of an alternative exit in a townhouse where the topmost storey is more than 7.5m but not more than 18m above the adjoining ground.

In addition, clause 2.15.1 of the Domestic Technical Handbook states: “Alternative suppression systems - there are many alternative or innovative fire suppression systems available including systems utilising domestic plumbing and water-mist systems. Verifiers should satisfy themselves that such systems have been designed and tested for use in domestic buildings and are fit for their intended purpose (see Section 0). Alternative approaches in a particular case may or may not be compensated by an automatic fire suppression system.”

The key area of doubt in relation to compliance with standard 2.15 is the suitability of a water-mist suppression system to BS 8458 : 2015, Fixed fire protection systems, Residential and domestic water-mist systems, Code of practice for design and installation, to be used in a building being converted into a four storey dwelling house.

A correctly designed, installed and properly maintained water-mist fire suppression system can detect, suppress and control a fire at an early stage of development, and activate an alarm. Operation of the system rapidly reduces the rate of production of heat and smoke, allowing more time for the occupants to escape to safety or be rescued.

An individual four storey dwelling house is within the scope of the BS 8458 : 2015 (Table 1, Category of system – Domestic Occupancy). The height of the building is well within the maximum height limit of 40m. The system should form part of an integrated fire safety system as part of the building design. The system components have been tested and third party certified. These tests are used to establish the necessary number of nozzles and their flows, operating pressures and spacing, together with other required design characteristics for each manufacturer's equipment. Thermally activated nozzles should have quick-response thermal elements in accordance with BS EN 12259-1. The discharge duration should be a minimum of 10 minutes.

Having carefully considered all the information submitted in this case, it is the view of Scottish Ministers that, provided the water-mist suppression system is designed, installed and maintained in accordance with BS 8458 : 2015, the proposals do meet the requirements of Standard 2.9.