



## Background

This Note for Inspecting Officers provides guidance on the standards that are considered appropriate in respect to Smoke Security Devices.

The Note aims to set general principles and to provide the reader with information as to which approved document or technical standard is considered by this Authority to be appropriate.

## Information

The use of smoke security devices to protect property against intruders is becoming more common throughout West Yorkshire. It is recognised that such devices can create a potential hazard to firefighters and members of the public who enter the protected premises. Every endeavor should be made to ensure that exposure to this risk is restricted to a level which is reasonable in the circumstances of each case.

British Standard 7939: 1999: 'Smoke and Security Devices, Code of Practice for Manufacture, Installation and Maintenance' sets an acceptable standard.

Further details about the design of and operational procedures for dealing with these devices are contained in Operational Procedure No. 12 'Fire Protection Equipment and Public Services'.

## Single Occupied Buildings

Smoke security devices installed in accordance with British Standard 7939: 1999 should have sufficient safeguards to prevent accidental discharge of smoke whilst the premises are occupied and are suitable, in most cases, for single occupied buildings.

## Multi Occupied Buildings

Where smoke security devices are installed in multi occupied buildings that share common means of escape provisions, or in buildings that are provided with controlled or phased evacuation facilities, actuation of the device could lead to automatic evacuation of persons from a safe zone to one where a fire actually exists.

## Installation

Prior to installation the installer should liaise with the Fire & Rescue Authority to determine whether there are any local restrictions in force.

Only individuals who have successfully undergone a formal training course including a written test should undertake installation of smoke security devices. The company should maintain detailed records of trained individuals so that independent verification can be undertaken if required.

Smoke security devices should be configured so that they can only be activated automatically when the alarm panel is set. The device should be fitted with a means of isolating the smoke security device from the alarm panel to allow for the independent testing of the smoke security device and the alarm system. Access to this facility should be restricted to an engineer.

Systems should not be configured to form a 'person trap', i.e. they should not activate after a person has passed so as to prevent exit or escape.

Smoke generators should not be installed to cover escape routes and staircases of areas of the building that are still occupied.

Care should be given to ensure safe escape routes in premises with agreed shared means of escape, particularly if such a route relies on escape through adjoining premises. The smoke generator should not be operable when the premises are occupied or if the area is required for means of escape.

Smoke generators should be configured so that they can actuate only when the alarm system is set in the area being protected.

In multi-occupancy buildings or very large sites with internally protected areas the smoke generator should be installed so as to contain the smoke within the protected area(s) and not to infringe on to public areas or open areas.

Consideration should be given to the use of visual and audible indications that the smoke generator has activated. These indications, if used, should be provided adjacent to the fire indicator panel where one is installed. In all other cases the indications should be adjacent to the normal entry point to the building. Warning signs should be displayed, as a minimum, at the normal entry points to the building.

The installer should inform the fire service and alarm receiving centre of the installation prior to smoke generator being commissioned. A full test firing, generated by an alarm condition, should be undertaken as part of the installation and commissioning procedure.

### **Effect on Fire Engineered Means of Escape**

The actuation of the smoke security device could totally remove the beneficial effects of other kinds of smoke control, i.e. pressurisation or 'opposed' airflow systems.

The operation of the smoke control system, due to smoke security device actuation, could have an adverse effect on the actuation of sprinklers due to the cooling effect of air extracting through vents/fans.

A decision may have been made, operationally, to close down the smoke extract system in an area for fire fighting purposes. The actuation then of smoke security device could re-start the extract fans in the same or adjoining area, depending on the control systems, thus reintroducing airflow into the fire zone with adverse effect on the scene of operations.

Smoke control systems could be made to operate outside design parameters and create an adverse effect in a fire zone. Although unlikely, there is the possibility of the smoke extract systems operating simultaneously in two separate zones i.e. the zone containing a discharged smoke security device and a fire zone. The effects of this could include:

- Insufficient inlet air to facilitate extract from the fire zone, and or
- Smoke/fire spread due to the extract fans pulling smoke/hot gases out of the zone of origin and spreading through to other areas.

### **Conclusion**

Effective and efficient controls can only be established after consideration of the hazards, their causes and the potential consequences. Consultation between the installers of smoke security systems and Fire Safety Officers is therefore essential in order for specific and appropriate risk assessments to be carried out. Full consultation and assessment between officers of the Fire Safety and Operations Groups is required.