

HEALTH, SAFETY AND ENVIRONMENT MANAGEMENT SYSTEM GUIDANCE REGISTER		Guidance	G017
 PRIFYSGOL ABERYSTWYTH UNIVERSITY	Electro- Magnetic Door Holders	Issue	1
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This Guidance Note provides advice on and requirements for, devices used to hold doors open

Introduction

Automatic door holders, both electro-magnetic and pneumatic, are designed for all types of self-closing, sliding, hinged and double doors, to hold them open where circumstances make this desirable and release them automatically in case of fire, or on the operation of a fire alarm system. Assuming such door holders to be efficient in operation and properly maintained, they have the advantage of eliminating the practice of wedging or propping open fire doors.

Requirements

The automatic release device is to react upon the door on the same horizontal plane as that of the door closer and be positioned as near to the closer as practicable.

Where existing installations cannot meet this requirement, they are to be removed completely from the door and frame.

Any previously made adaptation to the door or frame to accept the door holder and its associated mechanism is to be made good.

The door closer is to close the door at a safe, controlled speed and hold the door firmly against the door frame in the closed position. Self-closing devices using simple spring mechanisms without hydraulic dampers will not be suitable. Where rebated double doors are fitted, a door selector is to be provided to ensure the doors close in the correct order.

Any self-closing device used with automatic door holders should be of a type which does not lose its effectiveness when held open for long periods of time.

All doors fitted with automatic releases should be actuated by an appropriate automatic fire detection and alarm system. BS 5839 Parts 1 or 6 detail an acceptable standard.

The electrical control arrangements for actuation of mechanisms that unlock, release or open doors in the event of fire should comply with BS 7273 Part 4.

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If devices are fitted to fire doors protecting the means of escape then the automatic detectors should be positioned in accordance with BS 5839 Part 1, for a Category L3 system as a minimum, i.e. suitable detectors on the means of escape routes and in adjacent rooms opening onto those routes. If the means of escape route is fire protected then either smoke or heat detectors are considered suitable in the adjacent rooms, whilst if the route is unprotected, only smoke detectors should be used.

The practice of using dedicated smoke detectors either side of corridor doors that are to be held open by a door release mechanism should be discontinued. This is because studies have found that smoke entering the corridor from an adjacent room may not have sufficient buoyancy, movement and directional flow to actuate the dedicated detector heads.

The smoke detectors are to be of a type that will readily respond to the type of smoke which might be expected from combustible materials in the risk area. All detectors should comply with BS EN 54-7:

The smoke detectors are to be connected with their respective door holder and the electrical fire alarm system in such a way as to ensure that the holders are rendered inoperative on the actuation of the detector or the electrical fire alarm system.

Where an electrical fire alarm system is provided, the signal from the smoke detection equipment is to be integrated into the fire alarm circuit to cause the alarm to operate and the electro-magnetic door holder to release the door(s). Where no electrical fire alarm system is provided, the signal from the smoke detection equipment is to cause its associated electro-magnetic door holder to release the door(s).

Any door fitted with a hold open device must close automatically upon the occurrence of any of the following:

- a) Operation of the automatic detection apparatus.
- b) Manual operation of a switch fitted in a suitable position adjacent to each device.
- c) Failure of electricity supply to the device.
- d) Manual operation of the fire alarm.

In premises with a sleeping risk all doors fitted with electro-magnetic door holders must be closed at night. This requirement could be achieved by the use of a time clock installed in the electrical circuit

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and set to automatically close all such doors at a specified time or alternatively, such doors may be operated automatically by the operation of a central master control.

A notice of 5mm conspicuous plain letters is to be provided on each door fitted with a door holder and be readily visible when the door is held open. The notice should read either "Automatic fire door, keep clear" or if the premises have a sleeping risk "Automatic fire door, keep clear. Close at night".

Care must also be taken to ensure such doors do not obstruct or conceal Fire exit or other signs, either when the doors are held open or closed. Additional signs may be needed over the door opening.

Each door should be checked to ensure its correct operation each time the fire alarm is tested and be maintained by a competent person at intervals not exceeding six months. Where no fire alarm is provided, a test switch should be interposed in the smoke detector circuit to simulate the operation of a smoke detector and cause the door holder to operate. The system should be tested weekly by the use of the switch.

NOTE: The fitting of a switch to isolate the door holders from the fire alarm system is not permitted.

In the event of the door holder or associated smoke detection equipment becoming faulty, the door is to be maintained as a self-closing door until repairs are effected by a competent person. Following the commissioning of an installation, a certificate of compliance with BS5839: Part 3 should be completed.

SITING OF ELECTRO-MAGNETIC DOOR HOLDERS

Acceptance of electro-magnetic door holders is subject to their location and whether they form part of what is considered to be a "critical condition" with regard to the protection of the means of escape from the premises. Critical conditions are referred to in Approved Document B to the Building Regulations and BS 9991 and BS 9999.

- (a) any door forming part of the protected lobby or door to a firefighting staircase.
- (b) any door forming part of the protected lobby or door to the sole escape stairway to a building.
- (c) escape stairway serving a building in any residential purpose group

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The use of fusible links for the purpose of holding a fire door open in lieu of an electro-magnetic device is not acceptable.

SOURCES OF INFORMATION

BS 5839-1 Fire detection and fire alarm systems for buildings. Code of practice for system design, installation, commissioning and maintenance

BS 5839: Part 3 Specification for automatic release mechanisms for certain fire protection equipment.

BS 5839 Part 6 Fire detection and fire alarm systems for buildings. Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings

BS 7273: Part 4 Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors

BS 9991: Fire safety in the design, management and use of residential buildings. Code of practice.

BS 9999: Code of practice for fire safety in the design, management and use of buildings

BS EN 1155 Building hardware. Electrically powered hold-open devices for swing doors. Requirements and test methods

BS EN 54-7 Fire detection and fire alarm systems. Smoke detectors. Point detectors using