

DOORS

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INTRODUCTION

Regulation 18 of the Workplace (Health, Safety and Welfare) Regulations 1992 covers safety aspects of doors and gates within workplaces. In general, term's doors and gates must be suitably constructed, including being fitted with any necessary safety devices.

POWER OPERATED DOORS

Where the risk of injury is significant (for example due to the speed and force of descent or closure, or the method of operation) the following precautions and recommendations should be considered:

- (1) **Sensitive edge** - to stop or reverse the motion if there is a danger of a person being trapped, or
- (2) Door to be driven by a **friction clutch**, so adjusted and maintained so as to transmit the minimum torque necessary to close the door
- (3) It should be possible for a person to hold back the door by **hand**, and that heavy vertically moving doors be **counterbalanced**.
- (4) **Door controls** to be in such a position that the person operating the door, can see it whilst it is in motion; to be of the 'hold to run' type.

Specific requirements are:

1. Sliding doors or gates to have device to prevent them coming off their track.
2. Upward opening doors or gates to have device to prevent them falling back (by counterbalance or ratchet mechanism)
3. Powered doors or gates to have features to prevent trapping of people.
4. Where necessary, powered doors or gates must be capable of being operated manually unless they open automatically if the power fails.
5. Doors which are openable both ways to be designed as to ensure a clear view of both sides (e.g. vision panel)

MANUALLY OPERATED DOORS

Where such doors are suspended from rollers running on an overhead track, the following recommendations should be considered:

- (1) Means to stop rollers running off the end of the track
- (2) Door to be properly suspended from the rollers
- (3) Provision of a retaining rail to prevent the door falling should the suspension fail or the rollers leave the track.
- (4) Manual activators should be located where the user has a clear view of the door and is positioned so that the user is not impeded or struck by the door during its operating cycle.

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POWER OPERATED PEDESTRIAN DOORS

Such doors are to be found in high activity areas used by the general public. They may present risks of injury or entrapment. Doors may be powered by a gear-driven transmission with a pneumatic or hydraulic cylinder mechanism, with motion controlled by pressure sensitive mats or by microwave, ultrasonic and / or photoelectric systems. Precautions / recommendations include the following:

1. i) Activators - should operate such that a person approaching the door at normal walking pace should not have to hesitate while the door is opening.
ii) Presence sensing devices - to stop or reverse the door before it can collide with a person who is moving or stationary.
2. Barriers - may be required to:-
 - i) safeguard against approach from the side into the arc-of-swing of a swing door; or
 - ii) safeguard against entering the path of a sliding door during its cycle of operation; or
 - iii) direct pedestrians towards an opening.
3. Delay - the period of time the door is held open after the activator has stopped and should be set so as not to prejudice safe operation.
4. Signs - suitable appropriate warning/advisory signs should be affixed to the door at normal viewing height.
5. For sliding doors
 - i) deterrence/prevention of user occupying the area through which the door travels in its opening cycle (barriers, monitoring devices).
 - ii) prevention of trapping during closing cycle (e.g. 'hold-open' beam; monitoring devices).
 - iii) suitable speed of travel of the door.
 - iv) prevention of finger traps.
6. For swing doors
 - i) prevention of trapping of user in the arc-of-swing (e.g. safety mats or presence detectors).
 - ii) suitable speed of travel of the door.
 - iii) prevention of finger traps
7. A regime of operation, maintenance and safety checks should be in place.
8. In areas of high pedestrian usage, the provision of trained personnel able to take appropriate action in an emergency is recommended.

NB - Full details on all the above safety precautions can be found in British Standard Code of Practice B.S. 7036 : 1996 - 'Safety at Powered Operated Pedestrian Doors'.

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AUTOMATIC POWERED REVOLVING DOORS

Incidents involving these doors appear to indicate that some of the factors which contributed were lack of maintenance (causing alterations to the operating characteristics of the door), inadequate safety devices fitted and poor sensitivity of those safety devices that were fitted. These deficiencies become increasingly important when the aged, infirm or very young use the doors.

Suggested recommendations include:

- (1) Maintenance to the manufacturer's specification (including safety devices)
- (2) The provision of additional presence-sensing devices to each revolving section to detect static objects.
- (3) The provision of sensitive edges to the leading edges of the fixed screens.
- (4) The provision of external, and other, emergency stop buttons
- (5) The provision of appropriate and necessary warning signs

Although there is no British Standard for automatic powered revolving doors, a draft European standard (which will include such doors) is being prepared. At the time of writing the draft is at a very early stage. Interim advice may be sought from the Automatic Door Suppliers Association (ADSA) or via your local council, as your enforcing authority for health and safety.

INDUSTRIAL DOORS & SHUTTERS

There is no British Standard for industrial doors and shutters. A draft European Standard, which will include them within its scope, is at an early stage of preparation. Examples of the minimum safety measures to meet legal requirements include:

- (1) Comprehensive instructions and all necessary tools and equipment to be provided for safety during installation and maintenance.
- (2) Installation by competent personnel, followed by systematic checking of equipment and safety devices on regular basis (frequency influenced by risk assessment)
- (3) Ongoing system of maintenance to the manufacturer's specification by trained personnel.
- (4) Segregation of pedestrians from vehicles by barriers etc. and prevention of pedestrians crossing gangways near industrial doors or shutters.
- (5) In the absence of other safety devices, all manually controlled doors and shutters to have 'hold to run' type controls, with a full view of the motion.
- (6) All automatic doors and shutters to have emergency stop controls on both the inside and outside, and systems to ensure that the door cannot close if persons or vehicles are in their path.
- (7) Where appropriate, warning signs on both sides.

CHECKLIST - DOORS

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|---|-----|----|
| 1. Are all your doors and gates suitably constructed? | YES | NO |
| 2. Do any of your doors and gates require safety devices to operate in a safe manner? | YES | NO |
| 3. Do you have written records for all such doors or gates identified in (2) above? | YES | NO |
| 4. Do such records contain information regarding: | | |
| (i) Installation details? | YES | NO |
| (ii) Safety devices required? | YES | NO |
| (iii) Maintenance procedures? | YES | NO |
| (iv) Log of tests/maintenance/work carried out? | YES | NO |
| (v) Instructions for use/training of personnel? | YES | NO |

REFERENCES/FURTHER DETAILS

- *1. Approved Code of Practice L24 - Workplace health, safety and welfare (pp 29-30). (HSE)
- *2. Local Authority Circular 17/1 – Power and Manually operated Doors in Workplaces. www.hse.gov.uk/lau/lacs/17-1.htm
- *3. Local Authority Circular 17/3 – Safety at Automatic Powered Revolving Doors. www.hse.gov.uk/lau/lacs/17-3.htm
- *4. Local Authority Circular 17/4 – Safety at Automatic Powered Revolving Pedestrian Doors. www.hse.gov.uk/lau/lacs/17-4.htm
- *5. Local Authority Circular 17/5 - Safety of Industrial Doors and Shutters. www.hse.gov.uk/lau/lacs/17-5.htm
- 6. British Standard BS 7036 : 1996 'Safety of Power Operated Pedestrian Doors'.
- *7. Specialist Inspector Reports No. 54. Safety at Powered (Automatic) Pedestrian Doors 1997. (HSE)

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- * Available to view by prior arrangement at Nuneaton and Bedworth Borough Council, Environmental Health Services, Council House, Coton Road, Nuneaton. CV11 5AA
 - ** Free copy available from Nuneaton and Bedworth Borough Council at the above address.

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