

Health and Safety Executive		Operational Circular	
		OC 31 4/17	
Review Date	20/04/2010	Open Government Status	Fully Open
Version No & Date	1: 20/04/2000	Author Unit/Section	FOD Safety Unit

To
FOD AFQ Inspectors (Bands 0-4)
Specialist Group Inspectors (Con, Mech) (Bands 0-3)
Railway Inspectors (Bands 0-3)
HID Land Division Inspectors (Bands 0-4)
NSD Inspectors (Bands 0-3)

ROLLER-CURTAIN DOORS

This 2-part OC advises that rapid-operating industrial/commercial powered roller-curtain doors used by pedestrians should be provided with presence-sensing 'stand off' safety devices. The Information Document (ID) may be copied to interested persons outside HSE.

INTRODUCTION

1 The operation of rapid-acting roller-curtain doors has led to injuries to people. HSE's Technology Division (TD) has reached agreement in principle with the industry about the further precautions that are needed if such doors are used by pedestrians. The standards to be achieved are described in the Information Document (ID). 'Rapid' is considered to be an opening or closing speed in excess of about 0.5 metres per second.

2 The standard of safety at industrial doors and shutters is described in OC 314/16. Additionally, rapid-acting roller-curtain doors used by pedestrians should be provided with a presence-sensing safety device positioned at least 0.9 metres in front of the doorway.

3 FOD Safety Unit is writing to known manufacturers, suppliers and installers of industrial/commercial powered roller-curtain doors to advise them of the requirements described in this OC. A copy of the HSE letter is given at Appendix 1 and a list of those suppliers contacted is at Appendix 2 .

ACTION BY INSPECTORS

4 Inspectors should draw the attention of relevant users and suppliers (including manufacturers and installers) to requirements in the ID. Note that, until the draft European standard (prEN 12453) is adopted, this is interpretative guidance.

5 Adequate control of the risk is achieved by:

- (1) preventing pedestrians using rapid-operating powered roller-curtain doors; or
- (2) providing appropriate safeguards, eg as described in the ID.

Where adequate control is not achieved then inspectors should take appropriate enforcement action. Where there is an impending risk of possible serious personal injury then issue of an improvement notice is likely to be appropriate action.

6 Occupiers of premises, where there are rapid-operating powered roller-curtain doors which could impose unsafe impact forces, should be advised that pedestrians should not be allowed to use them unless the installation is updated to an appropriate safety standard as described in the ID paras 7-9.

7 If the doors are not permitted to be used by pedestrians, the doorway should be clearly marked 'Danger - door not for pedestrian use' and measures put in place to enforce observance of the instruction.

8 Manufacturers, suppliers and installers should be advised that, when installing powered roller-curtain doors which could impose unsafe impact forces and which are permitted to be used by pedestrians, 'stand off' safety devices should be provided. They should also ensure that quotations to potential customers make clear that:

- (1) this type of door is not normally designed to be used by pedestrians; and
- (2) where this cannot be avoided, additional safety measures will be necessary, as above.

Alternatively, if the door is not permitted to be used by pedestrians, it is acceptable for the supplier to clearly mark the doorway 'Danger - door not for pedestrian use'. Note that there is no legal duty under the Supply of Machinery (Safety) Regulations 1992 (as amended) for the supplier of an **existing** door to provide additional safety devices free of charge.

Inspectors should accept the absence of additional safety devices on any roller-shutter door which opens and closes at less than 0.5 metres per second. Even at such low speeds, however, some risks remain and inspectors should ensure that these are addressed in the user's risk assessment (see ID para 12).

FURTHER GUIDANCE

9 Technology Division has been working in conjunction with the Door and Shutter Manufacturers Association (DSMA) and others to develop guidance on safety requirements, in particular to establish the most suitable types of safety devices, and the determination of a 'safe' level of impact force. Further guidance will be issued when more information is available about these matters. DSMA guidance for their members and the industry, similar to that in this OC, should be published shortly.

Date first issued: 20 April 2000
(220/FOD/1017/2000)
ref: J:/editors /intranet/314_17.lwp

APPENDIX 1
(para 3)

**LETTER TO SUPPLIERS OF INDUSTRIAL/COMMERCIAL
POWERED ROLLER-CURTAIN DOORS**

Dear Sirs

**PEDESTRIAN USE OF INDUSTRIAL/COMMERCIAL
POWERED ROLLER-CURTAIN DOORS**

I believe your company is a manufacturer, supplier or installer of industrial/commercial powered roller-curtain doors. This letter gives advice on the safety devices which should be provided by suppliers (including manufacturers and installers) of doors which, because of their speed, quietness and design, could cause injury to pedestrians. The trade association (the Door and Shutter Manufacturers Association (DSMA)) is aware of this advice.

The powered industrial/commercial doors covered by this letter operate on a 'roller curtain' principle, opening and closing rapidly, with flexible material being wrapped around a roller. The operation of rapid-acting roller-curtain doors has led to injuries to pedestrians and these doors should normally be provided with a presence-sensing device positioned at least 0.9m in front of the door. The standards to be achieved if such doors are used by pedestrians are described in the enclosed Information Document.

As a supplier of such doors you have duties under the Supply of Machinery (Safety) Regulations 1992 as amended (SMSR) and the Health and Safety at Work Act etc 1974. For general advice on your duties please see the enclosed leaflet 'Supplying New Machinery' (IND(G)270). Products should meet all relevant Essential Health and Safety Requirements of SMSR and be safe. You should take account of all relevant factors to ensure the safety of users. It is particularly important to protect elderly, infirm or young persons, who are most at risk of injury, from **any** impact. Precautions to avoid risk of injury include appropriate controls and safety devices fitted to the door, or used in association with it.

An acceptable safety device is likely to be of the "stand off" presence-sensing type. This should be positioned a suitable distance either side of the door so as to prevent unsafe door motion if it detects a person or vehicle approaching the door. The

correct choice and positioning of safety devices is your responsibility as it depends on the environment, the type of traffic and the type of door.

Your quotations should make clear that this type of door is not normally designed to be used for pedestrian traffic and, where this cannot be avoided, that additional safety measures (ie 'stand off' safety devices) will be necessary. If the doors are **not** permitted to be used by pedestrians, 'stand off' safety devices will not be required. In these circumstances the doorway should be clearly marked "DANGER - DOOR NOT FOR PEDESTRIAN USE".

You should advise existing users of your products of the necessary precautions (there is, however, no duty under SMSR on you as the supplier of an **existing** door to provide additional safety devices free of charge).

HSE is advising occupiers that doorways with powered roller-curtain doors at which there is a potential risk to pedestrians should not be used by pedestrians unless precautions are adequate to avoid injury. Users are advised to update the installation to an appropriate safety standard as described above.

If you have any questions about the advice contained in this letter you should contact your local HSE office (look under 'Health and Safety Executive' in the telephone directory).

Yours faithfully

D M Willis
HM Inspector for Health and Safety

APPENDIX 2
(PARA 3)

SUPPLIERS OF POWERED ROLLER-CURTAIN DOORS

Wales and West Region

Crawford Door Ltd
Whittle Road
Meir
Stoke on Trent
Staffordshire

Harefield Doors
Valley Road
Cinderford
Gloucestershire
GL14 2HE

Lycett's (Burslem) Ltd
Glendale Street
Burslem
Stoke on Trent
ST6 2EP

Pollaforce Ltd
Unit 8, Newbridge Trading
Estate
Gott Drive
Brislington
Bristol
BS4 4AX

Zenith Industrial Doors Ltd
Western Units
Pottery Road
Bovey Tracey
Devon
TQ13 9DS

Home Counties Region

Blount Shutters Ltd
Unit B
734 London Road
West Thurrock
Essex
RM20 3NL

Chiltern Industrial Doors
Ltd
Commerce Way
Leighton Buzzard
Bedfordshire
LU7 8RW

Cooks Blinds and
Shutters Ltd
Burnet Road
Sweet Briar Industrial
Estate
Norwich
NR3 2BS

County Shutters and
Grilles Ltd
Unit 8, Winstanley Way
Pipps Hill
Basildon
Essex
SS14 3BP

SARA/Loading Bay
Specialists
Local Board Road
Watford
WD1 2JW

Seuster Doors Ltd
Unit 13, The Metro
Centre
Tolpits Lane
Watford
WD1 8SS

London & South East Region

Arkas Industrial Doors
The Coachworks
Upper Street
Leeds
Kent
ME17 1RS

J B Industrial Doors Ltd
Straw Mill Hill
Tovil
Maidstone
Kent

Pemberley Doors Ltd
Station Road West
Ash Vale
Aldershot
GU12 5LZ

R N B Industrial Door
Service
Unit 6, Davenport Centre
Renwick Road
Barking
Essex
IG11 0SP

Midlands Region

Henderson Bostwick Ltd
Grange Close
Clover Nook Industrial Estate
Somercotes
Derbyshire
DE55 4QT

R S Stokvis & Sons Ltd
Pool Road
West Molesey
Surrey
KT8 2HN

Mercian Shutters Ltd
Pearsall Drive
Oldbury
West Midlands
B69 2RA

Meridian Doors Ltd
54 St Ives Road
Leicester
LE4 9FN

Rowland Door Services Ltd
Unit 15, Imex Business Park
Flaxley Road
Stechford
Birmingham
B33 9AL

Stanair Industrial Door
Services
Unit 2, Henson Way
Telford Way Industrial Estate
Kettering
Northants
NN16 8PX

Syston Rolling Shutters
Ltd
33 Albert Street
Syston
Leicester
LE7 2JB

Yorkshire & North East Region

Amber Doors Ltd
Mason Way
Platts Common Industrial
Estate
Hoyland
Barnsley
S74 9TG

Envirodor Markus
Great Butter Lane
Willerby
North Humberside
HU10 6BS

Hart Industrial Doors
Redburn Road
Westerhope Industrial
Estate
Newcastle Upon Tyne
NE15 1PJ

Yorkshire & North East Region cont'd

Marian Engineering Ltd
First Avenue
Team Valley Trading
Estate
Gateshead
Tyne and Wear
NE11 0NU

Northern Doors (UK) Ltd
Kingsforth Road
Thurcroft
Rotherham
SS6 9HU

Oxley Garage Doors
and Shutters
Sovereign Business
Park
Bontoft Avenue
National Avenue
Hull
HU5 4HF

Union Industries
Angel's Wing
Whitehouse Street
Hunslet
Leeds
LS10 1AD

Wellgate Engineering Co
Ltd
Unit 3
The Ladyship Centre
Old Lane
Halifax
HX3 5QN

North West Region

Asco Industrial Doors Ltd
Britannia Way Industrial
Park
Union Road
Bolton
BL2 2HE

Doorco Ltd
PO Box 30
Bredbury
Stockport
Cheshire
SK6 4NZ

Clark Door Ltd
Willowholme Road
Willowholme
Carlisle
CA2 5RR

Industrial Door and Gate Ltd
Astra Business Park
Guinness Road
Trafford Park
Manchester
M17 1SD

Industrial Door Engineering
Ltd
Winnington Avenue
Winnington
Northwich
Cheshire
CW8 4EQ

Industrial Door
Systems Ltd
Unit 4B
Parkway Trading
Estate
Barton Dock Road
Stretford
M32 0TL

Mandor Engineering Ltd
Turner Street
Ashton-under-Lyne
Lancashire
OL6 8LU

Shutter Maintenance Ltd
4 Crawford Street
Bolton
BL2 1JG

Wormald Doors
Wormald Park
Grimshaw Lane
Manchester
M40 2WL

PEDESTRIAN USE OF POWERED ROLLER-CURTAIN DOORS

INTRODUCTION

1 This document contains internal guidance which has been made available to the public. The guidance is considered good practice (rather than compulsory) but you may find it useful in deciding what you need to do to comply with the law. However, the guidance may not be applicable in all circumstances and any queries should be directed to the appropriate enforcing authority.

2 The powered industrial/commercial doors covered by this Information Document are designed to allow the movement of vehicles into and within buildings. In some situations, pedestrians may also be permitted to use them.

3 Roller-curtain doors operate on a 'roller curtain' principle, with flexible material being wrapped around a roller. The roller may either remain at the top of the doorway ('fixed roller') or may travel up and down as the door is opened and closed ('moving roller').

4 There have been increasing sales of (powered) roller-curtain doors which, for reasons of heat conservation and business efficiency, close (or open) rapidly. 'Rapid' is considered to be an opening or closing speed in excess of about 0.5 metres per second.

5 There is a risk of injury to persons when a roller-curtain door operates. The risks are of being struck on the head during closure, particularly violently if the door is the 'moving roller' type and, in the case of 'moving roller' type doors, of having clothing entangled in the roller-curtain door as it opens. The risk is increased due to the speed and quietness of operation of powered roller curtain doors. 'Moving roller' type doors are more dangerous than 'fixed roller' type doors.

6 Roller-curtain doors should be differentiated from roller-**shutter** doors. The former operate more rapidly (typically closing at 0.6 m/sec to 2.5 m/sec) and are considerably quieter than roller shutters (which typically close at 0.25 m/sec). There is generally no need with roller-shutter doors to use safety devices as described below.

PRECAUTIONS

7 Risk of injury from a rapid operating roller-curtain door should be eliminated or reduced, in particular by appropriate door controls and safeguards. HSE recommends that any such door which may be used by pedestrians should be

provided with a safety device to detect any person approaching the door, when they are at least 0.9 metres away from it. This recommendation does not apply to a roller- curtain door which is not used by pedestrians and at which there are effective measures (including appropriate warning notices) taken to prevent pedestrians passing through the doorway.

8 In theory, a device positioned close to the door and scanning the area in front of the door could provide adequate protection. However, many such devices are not acceptable for safety purposes (see para 11). It is likely that acceptable protection will normally be achieved by providing a 'stand-off' safety device, such as a photoelectric guard, about one metre from the doorway.

9 A 'stand off' safety device is one positioned some distance from the door which will prevent unsafe door motion if the **presence** of a pedestrian or vehicle is detected, approaching the door. HSE does not specify a particular type of safety device or where it should be positioned, as the choice depends on the environment, the type of traffic and the type of door. An electro-sensitive device (such as a photoelectric (p/e) beam) in a 'stand-off' location will detect the presence of a person at that point but not someone who is stationary between the beam and the doorway. This matter is being addressed (see para 14) but, at the moment, a p/e device is acceptable if positioned at least **0.9m from** the door. A barrier may be necessary between the device(s) and the doorway to prevent anyone entering the 'unprotected' area other than through the p/e beam.

10 A presence sensing safety device mounted **on** (or slightly in advance of) the door's leading edge, or **adjacent** to the door, is unlikely to be satisfactory [even if the device is manufactured to the appropriate safety device standard, ie BS EN 61496-1: 1998 *Safety of machinery: electro-sensitive protective equipment: general requirements and tests* and the draft standard prEN 12978 (powered doors)]. Owing to factors such as the speed of response of the control system and the braking system, safety devices positioned in this way are unlikely to prevent an impact on a person walking through the doorway. Where a door-mounted safety device, or a safety device mounted adjacent to the door, cannot prevent impact then an additional 'stand off' presence-sensing device should be provided.

11 A **motion** sensor (such as a passive infrared beam) is not a 'safety component'¹ and should therefore not be used as a safety device in this application. However, if installed and used correctly in conjunction with a presence-sensing device(s), a motion (movement) sensor can provide enhanced safety.

12 It is acceptable to reduce the opening and closing speeds of the door to less than 0.5 metres per second, such that it is no longer classed as 'rapid operating', to avoid the need for additional safety devices. However, this does not eliminate the risk as, even at the lower speed, the moving masses and the energy involved (particularly with 'moving roller' doors) can cause injury. Furthermore, a reduction of speed would not in itself be sufficient to overcome the risk of entanglement when a 'moving roller' door is opening. These factors need to be addressed in the risk assessment for **any** roller-curtain door.

13 A device for measuring impact force is being developed in support of draft standard prEN 1245 3 (see para 15 below) which defines a safe level. 'Safe' impact energy levels have yet to be established but, where there is a risk of a person being struck vertically on the head, a safe impact energy level is likely to be less than 0.2 joules.

LAW AND INDUSTRY STANDARDS

14 Suppliers of industrial/commercial powered doors have duties under the Supply of Machinery (Safety) Regulations 1992 as amended (SMSR) to supply products which meet all relevant essential health and safety requirements (EHSRs) and are safe. Users should ensure that their industrial/commercial powered doors have appropriate controls/safety devices etc and that they are maintained in efficient working order, to comply with the Workplace (Health, Safety and Welfare) Regulations 1992 regulations 5 and 18.

15 At present there is no European, British or industry standard covering this type of door but a draft European standard (prEN 12453) dealing with powered industrial doors (including roller-curtain doors) has now been completed. The draft recommends that doors which could cause unsafe impact forces should be provided with presence-sensing 'stand off' safety devices, as described in paras 7-9 above. Until prEN 12453 is published, useful information may be gained from BS 7036: 1996 *Safety at powered doors for pedestrian use*. Although this British standard is not intended for industrial doors, it describes suitable safety devices and their applications.

1 A motion (or movement) sensor is not a 'safety component' in accordance with the Supply of Machinery (Safety) Regulations 1992 (SMSR). Consequently, as this type of sensor relies upon electronic circuit technology which may fail to a dangerous condition, additional measures should be employed to ensure that the safety-related control system has sufficient safety integrity.