

**Code of practice for**

# **Safety at powered doors for pedestrian use**

## **Part 5. Revolving doors**

Confirmed  
January 2010

ICS 91.060.50

NO COPYING IN ANY FORM WITHOUT WRITTEN PERMISSION FROM BSI



Document Sharing Hub

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MHE/31, Automatic power operated pedestrian doors, upon which the following bodies were represented:

- Association of Builders' Hardware Manufacturers
- Automatic Door Suppliers' Association
- British Retail Consortium
- Chartered Institute of Environmental Health
- Department of Health
- Health and Safety Executive
- Institute of Architectural Ironmongers

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 April 1996

© BSI 1996

The following BSI references relate to the work on this standard:  
Committee reference MHE/31  
Draft for comment 95/709605 DC

ISBN 0 580 25729 0

## Amendments issued since publication

| Amd. No. | Date | Text affected |
|----------|------|---------------|
|          |      |               |
|          |      |               |
|          |      |               |
|          |      |               |

# Contents

|                                                                                                                  | Page               |
|------------------------------------------------------------------------------------------------------------------|--------------------|
| Committees responsible                                                                                           | Inside front cover |
| Foreword                                                                                                         | ii                 |
| <b>Code of practice</b>                                                                                          |                    |
| <b>Section 1. General</b>                                                                                        |                    |
| 1.1 Scope                                                                                                        | 1                  |
| 1.2 References                                                                                                   | 1                  |
| 1.3 Definitions                                                                                                  | 1                  |
| 1.4 General                                                                                                      | 1                  |
| 1.5 Safety during the operating cycle                                                                            | 1                  |
| 1.6 Detection zone verification                                                                                  | 3                  |
| 1.7 Finger traps                                                                                                 | 3                  |
| 1.8 Break-out                                                                                                    | 3                  |
| <b>Section 2. Recommendations for powered revolving doors of internal diameter less than or equal to 3000 mm</b> |                    |
| 2.1 General                                                                                                      | 4                  |
| 2.2 Safety during the operating cycle                                                                            | 4                  |
| 2.3 Additional safety during the operating cycle                                                                 | 4                  |
| <b>Section 3. Recommendations for powered revolving doors of internal diameter greater than 3000 mm</b>          |                    |
| 3.1 General                                                                                                      | 5                  |
| 3.2 Active safety devices                                                                                        | 5                  |
| 3.3 Passive safety devices                                                                                       | 5                  |
| <b>Annexes</b>                                                                                                   |                    |
| A (normative) Authorized technician check lists                                                                  | 7                  |
| B (normative) Occupier safety tests                                                                              | 10                 |
| <b>Table</b>                                                                                                     |                    |
| 1 Maximum stopping distance for revolving doors                                                                  | 2                  |
| <b>Figures</b>                                                                                                   |                    |
| 1 Maximum speed of rotation                                                                                      | 2                  |
| 2 Leading mullion buffer and door leaf outer edge buffer                                                         | 3                  |
| 3 Leading mullion and leading face sensors                                                                       | 6                  |
| A.1 Authorized technician check list for revolving doors of internal diameter less than or equal to 3000 mm      | 7                  |
| A.2 Authorized technician check list for revolving doors of internal diameter greater than 3000 mm               | 8                  |
| B.1 Occupier safety check list for revolving doors of internal diameter less than or equal to 3000 mm            | 11                 |
| B.2 Occupier safety check list for revolving doors of internal diameter greater than 3000 mm                     | 12                 |
| <b>List of references</b>                                                                                        | Inside back cover  |

## Foreword

This Part of BS 7036 has been prepared by Technical Committee MHE/31.

The purpose of this Part of BS 7036 is to provide guidance to manufacturers, suppliers, installers, specifiers, occupiers and property owners on the specific recommendations for the provision, installation, safe operation and maintenance of powered revolving doors systems with a view to safeguarding traffic against the risk of accidents. It is not intended to cover the manufacture or design of powered revolving door operating systems except where the products, components or devices have a bearing on safety.

It is essential that this Part of BS 7036 is read in conjunction with Part 1.  
*General.*

Copyright is waived by BSI in respect of the authorized technician check lists in annex A and the occupier safety check lists in annex B. Enquiries concerning bulk printed supplies of these check lists should be addressed to Customer Services, BSI, 389 Chiswick High Road, London, W4 4AL.

The initial text of this code of practice was provided by the Automatic Door Suppliers' Association and due acknowledgement is made to this organisation.

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

# Section 1. General

## 1.1 Scope

This Part of BS 7036 provides guidance on the specific safety recommendations applicable to power operated revolving door systems of two, three or four leaf design.

It is essential that this Part of BS 7036 is read in conjunction with Part 1. *General*.

## 1.2 References

### 1.2.1 Normative references

This Part of BS 7036 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revision of the cited publication apply to this Part of BS 7036 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

## 1.3 Definitions

For the purposes of this British Standard the definitions given in BS 7036 : Part 1 apply.

## 1.4 General

**1.4.1** Powered revolving doors should be installed following the general recommendations given in Part 1, together with the specific recommendations of this Part.

**1.4.2** Operational checking and maintenance should be in accordance with **4.6** of Part 1 and should use the authorized technician check lists and the occupier safety check lists given in annexes A and B respectively of this Part.

**1.4.3** Powered revolving doors have potential hazards in the following five areas:

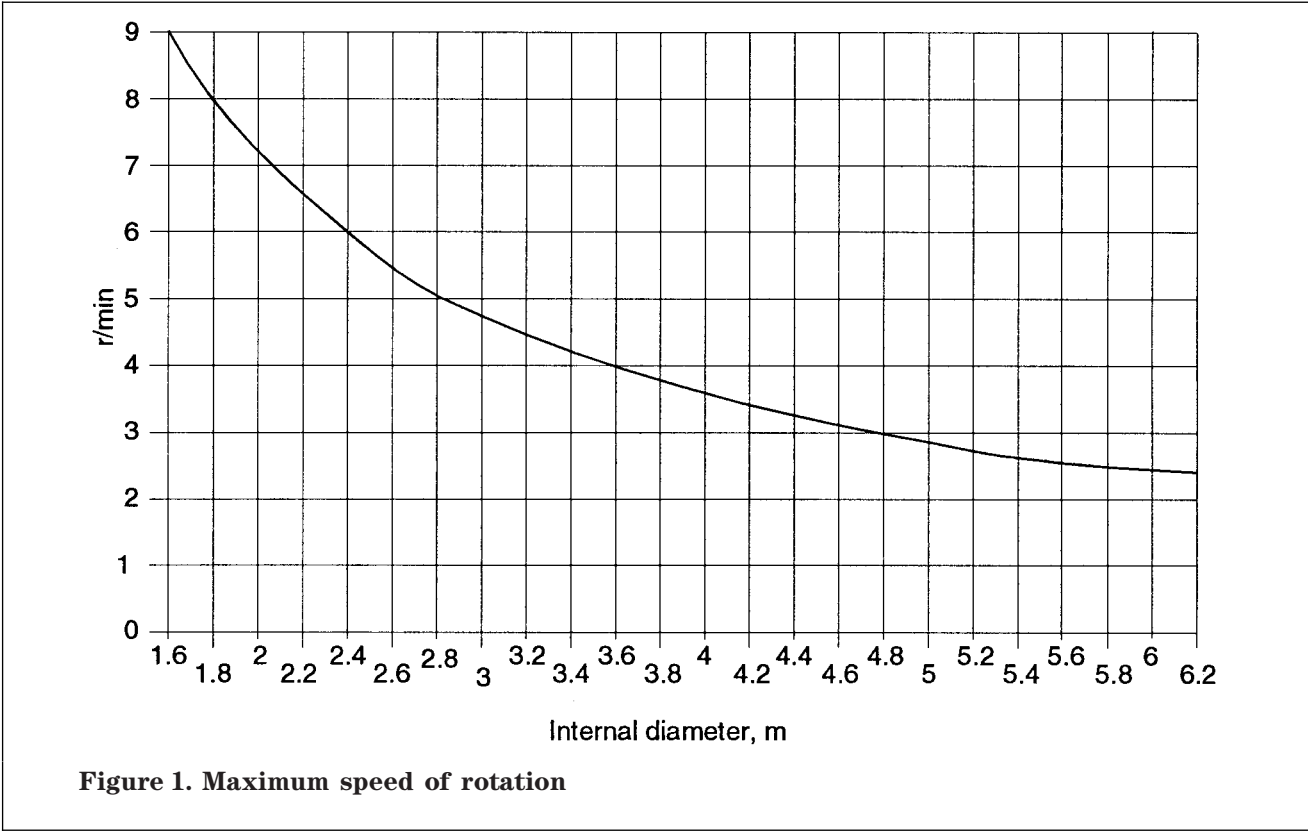
- a) during the operating cycle – traffic can be struck, trapped or walk into the edge of the door;
- b) drawing-in hazards;
- c) tripping hazards (see **4.3.2** of Part 1);
- d) congestion (see **4.4** of Part 1);
- e) other hazards due, for example, to lack of supervision (see **4.5** of Part 1).

## 1.5 Safety during the operating cycle

**1.5.1** Powered revolving doors require both passive and active safety devices to protect users within the swept area when the users are:

- a) moving more slowly than the door; or
- b) stationary within the swept area.

**1.5.2** The maximum rotation speed should not exceed 750 mm/s at the outer edge of the door leaf. The maximum rotation speed of a door varies according to the internal diameter of the installation and should be in accordance with the values given in figure 1.



**1.5.3** Upon receipt of a stop signal, a revolving door should cease rotation from maximum speed within 5.7 °.

NOTE. Values for maximum stopping distances, measured at the leading edge, for doors of certain internal diameters, are given in table 1.

| Table 1. Maximum stopping distance for revolving doors |                                         |
|--------------------------------------------------------|-----------------------------------------|
| Internal diameter                                      | Maximum stopping distance <sup>1)</sup> |
| m                                                      | mm                                      |
| 1.6                                                    | 80                                      |
| 1.8                                                    | 90                                      |
| 2.1                                                    | 104                                     |
| 2.4                                                    | 120                                     |
| 2.7                                                    | 136                                     |
| 3.0                                                    | 150                                     |
| 3.6                                                    | 180                                     |
| 4.2                                                    | 209                                     |
| 4.8                                                    | 240                                     |
| 5.4                                                    | 272                                     |
| 6.2                                                    | 310                                     |

<sup>1)</sup>Measured at the leading edge and calculated from a stopping angle of 5.7 °.

**1.5.4** Each leading mullion should incorporate a compressible buffer (e.g. of rubber) which covers the total surface of the mullion to a minimum depth of 25 mm (see figure 2).

**1.5.5** Each door leaf outer edge should incorporate a compressible buffer (e.g. of rubber) which covers the total surface of the outer edge to a minimum depth of 25 mm (see figure 2).

**1.5.6** The distance between the door leaf outer edge (excluding buffer) and any part of the drum wall should be a minimum of 30 mm (see figure 2).

**1.5.7** Automatic activation devices should be positioned to ensure that, where practicable, the edge of the detection zone where activation is initiated is a minimum of 1400 mm from the door when the door is activated from standstill.

Where the door is continuously rotating at reduced speed, automatic activation should be initiated at a minimum of 750 mm from the door.

Where side approach is possible, the detection zone where activation is initiated should extend a minimum of 700 mm at each side of the doorway opening.

Particular attention should be paid to the provision of a sufficient number of automatic activation devices and their positioning to ensure coverage of all expected lines of approach.

NOTE. Verification procedure for detection zones where activation is initiated is given in 1.6.