

## **DORMA** **Which Door** **Control?**

**Meeting the  
requirements of  
the DDA**



## Introduction

The most common question DORMA has been asked over the past few years is:

### "Does this door control help meet the requirements of the DDA?"

If the door was controlled by an automatic door operator the answer was relatively simple. However if it was a manual door it was an impossible question to answer!

To comply with BS8300, the closing force of the door could not exceed 20N.

To comply with Approved Document M (ADM), the opening force of the door could not exceed 20N.

Under the laws of physics a 100% efficient door closer cannot be manufactured; hence the difficulty in answering the question.

However the Office of the Deputy Prime Minister (ODPM) has now issued guidance to settle the conflict between BS8300 and ADM. So it is now possible to answer the question:

### "Does this door control help meet the requirements of the DDA?"

This brochure will help you to select the correct door control for your application.

To begin with, reproduced below is the guidance issued by the ODPM.

## Guidance of the ODPM (March 2005)

### Q. Does the 'opening force' of doors in Part M 2004 equate to 'closing force' in BS 8300:2001?

#### A. The guidance that follows is based on consideration of a forthcoming amendment to BS 8300:2001 (see BS 8300:2001)

"The guidance relates to doors to accessible entrances, manually operated non-powered entrance doors and internal doors (see AD M 2.13, 2.17, 2.26, 3.7 and 3.10), and means that with careful selection of components, door closers may be specified that will meet the requirements of both Part B and Part M.

For disabled people to have independent access through single or double swing doors, the opening force, when measured at the leading edge of the door, should be not more than 30 N from 0° (the door in the closed position) to 30° open, and not more than 22.5 N from 30° to 60° of the opening cycle.

Where, in order to meet the above opening force limits, the door-closing device is insufficient to keep an entrance door closed against external conditions, consideration should be given to installing one of the following door closing systems:

- a) a power operated (automatic) door – sliding, balanced or swing;
- b) a low energy swing door;
- c) a power operated revolving door assembly; [but note the caveats about use of revolving door assemblies in BS 8300 paragraph 6.3.5]
- d) an entrance lobby or air lock system of inner and outer doors; or
- e) for the purposes of Building Regulations in England and Wales, a low power rated door closer on a door fitted with a suitable latch.

Where hinged or pivoted fire resisting doors need to be accessible by disabled people, the door closing devices fitted should have 'controlled' action, conforming to the requirements of BS EN 1154:1997, Annex A, be of a variable power type and conform to the recommendations above.

Annex A to BS EN 1154 states that controlled door closing devices with a power size less than 3 are not considered suitable for use on fire/smoke door assemblies. This means that, in general, only high efficiency door closers mounted on doors with a width greater than 900 mm are likely to meet

fire door requirements as well as the opening force limits described above. Controlled door closing devices of a lower power size and with relatively low efficiencies, with a lower power size and/or of a width less than 900mm may only be suitable for non-fire resisting doors.

Where the force required to open a fire resisting door on a circulation route exceeds the limits described above, an electrically powered hold open device, either stand-alone or integral in the body of the closer, which conforms to the requirements of BS EN 1155, should be installed.

The use of "swing free" controlled door closing devices should be limited to applications where doors are located for access to rooms or similar locations and not part of a circulation route.

The use of "delayed action" controlled door closing devices should similarly be avoided in circulation areas.

For non-fire resisting doors which have a requirement to self close for reasons of privacy, acoustics or energy control, controlled door closing devices should be selected, fitted and adjusted so that the opening forces are well below the limits set out above, consistent with the doors functioning as intended. It is emphasized that, for non-fire doors, door closing devices of a power size less than 3 will normally be acceptable.

The opening force should be checked using a plunger-type force measuring instrument. Where measurements cannot be taken at the leading edge, they may be taken at a point on the face of the door up to 60 mm from the leading edge, a position approximately in-line vertically with the spindle of a lever handle or the centre line of a pull handle or push plate, in which case the opening force limits can be increased by approximately 2 N.

The accuracy of force measuring instruments available on the market varies and there are inherent difficulties in measuring forces on site. It is recognized, therefore, that any measurements will be subject to a degree of imprecision which could give rise to variations of between 2 and 3 N.

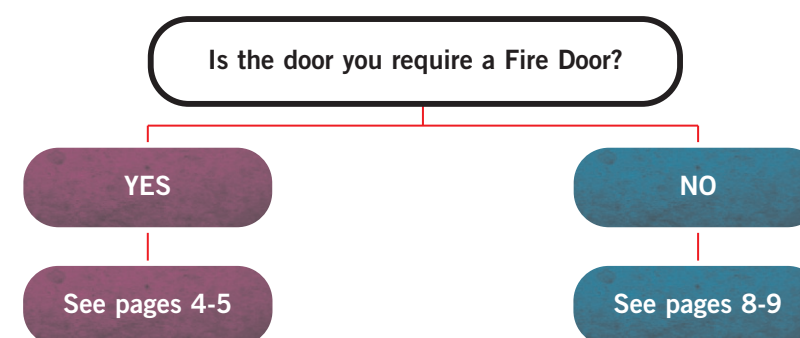
The ability of a controlled door closing device to close effectively while keeping within the opening force limits depends on its efficiency and the resistances from edge seals, hinge friction, latch resistance and differential air pressure. The effect of using a low efficiency controlled door closing device is to reduce the closing force to a point where, coupled with the other resistances to closing, the door may not latch, or stay closed if unlatched. The use of high efficiency closers can reduce the force required to open the door and increase the proportion of the disabled population who can pass through independently.

In some locations in a building, a controlled door closing device incorporating a backcheck is sometimes used to prevent damage to adjacent walls or furniture and to the closer mechanism if a door is flung open with some force. However, when the door is opened slowly, the resistance effect is minimal. With some controlled door closing devices, the backcheck starts to become effective when the door is open at 70°. Care should be taken to ensure that controlled door closing devices, with or without the backcheck, allow the door to open to provide the required effective clear width.

The maximum closing force exerted by a controlled self-closing device should be within 0° and 15° of final closure. Controlled door closing devices that do not have this characteristic should be avoided.

Without regular maintenance of all door fittings, the resistances to opening and closing can increase to an extent that the ability of disabled people to pass through the door may be affected. The opening force at the door opening angles described above should therefore be checked at regular intervals."

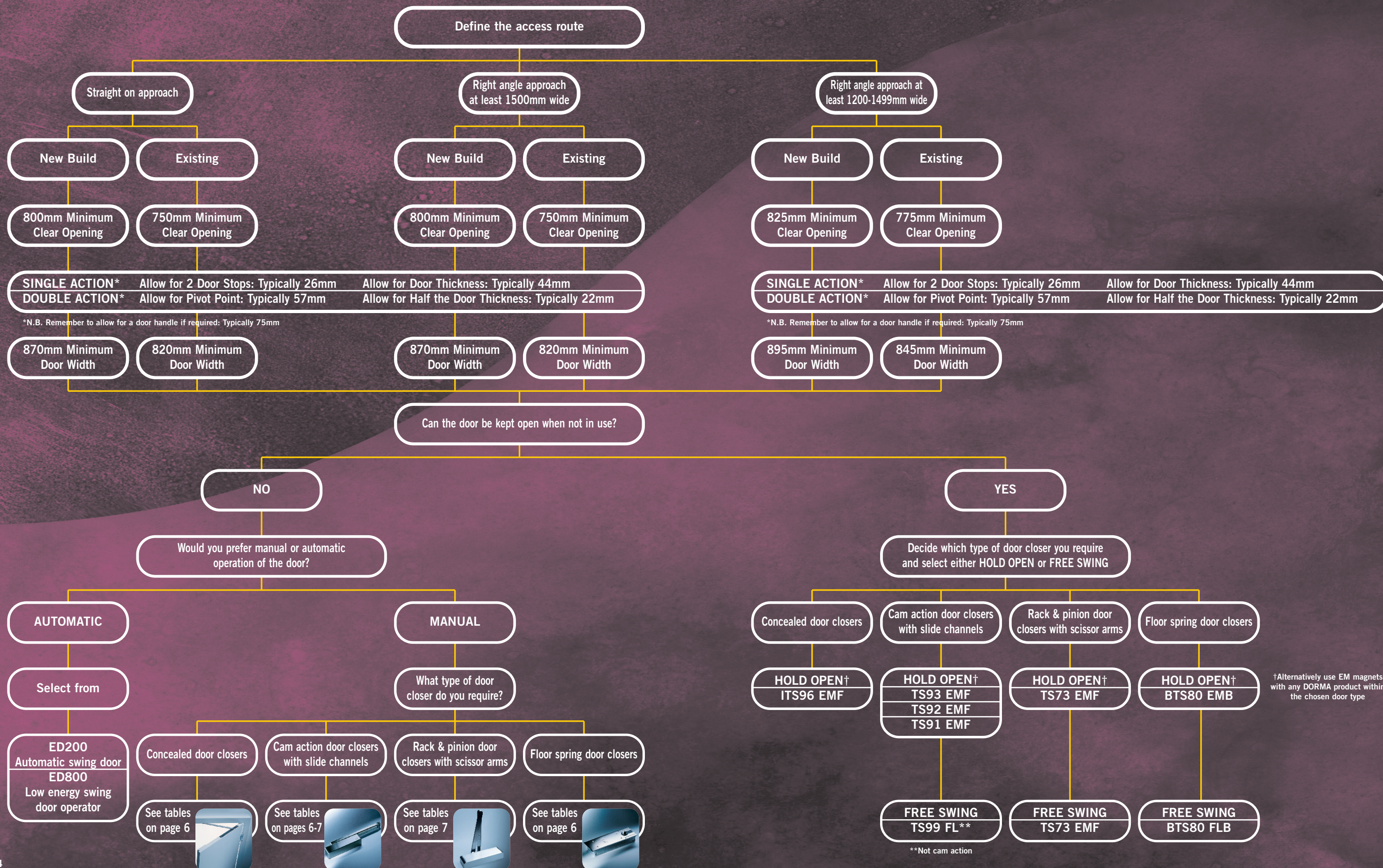
## How to select a door closer that complies with the new guidance on Approved Document M



Having answered this question, simply follow the flow charts until you have defined the type of door control you require. The tables on the subsequent pages will then indicate which products comply at different door sizes. If you require further assistance please contact your local DORMA sales consultant.



# Fire Door

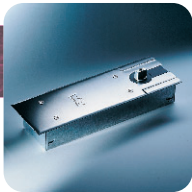




# Fire Doors

## Adjustable Door Closers

FLOOR SPRING Complies at this size



Product	Size	Minimum setting*	826	850	875	900	926
BTS75V	EN1-4	EN3					

CONCEALED DOOR CLOSERS

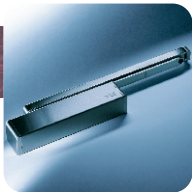


Product	Size	Minimum setting*	826	850	875	900	926
ITS96	EN2-4	EN3					

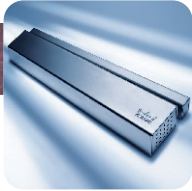


Product	Size	Minimum setting*	826	850	875	900	926
ITS96	EN3-6	EN3					

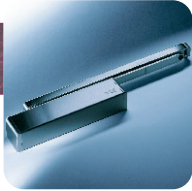
CAM ACTION DOOR CLOSERS



Product	Size	Minimum setting*	826	850	875	900	926
TS93	EN2-5	EN3					



Product	Size	Minimum setting*	826	850	875	900	926
TS97	EN2-4	EN3					



Product	Size	Minimum setting*	826	850	875	900	926
TS92	EN2-4	EN3					

RACK & PINION DOOR CLOSERS Complies at this size



Product	Size	Minimum setting*	826	850	875	900	926
TS83	EN2-6	EN3					



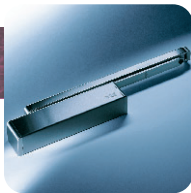
Product	Size	Minimum setting*	826	850	875	900	926
TS73V	EN2-4	EN3					



Product	Size	Minimum setting*	826	850	875	900	926
TS72V BC	EN2-4	EN3					

## Fixed Power Door Closers

CAM ACTION DOOR CLOSERS



Product	Size	Minimum setting*	826	850	875	900	926
TS91	EN3	EN3					



Product	Size	Minimum setting*	826	850	875	900	926
TS90	EN3	EN3					

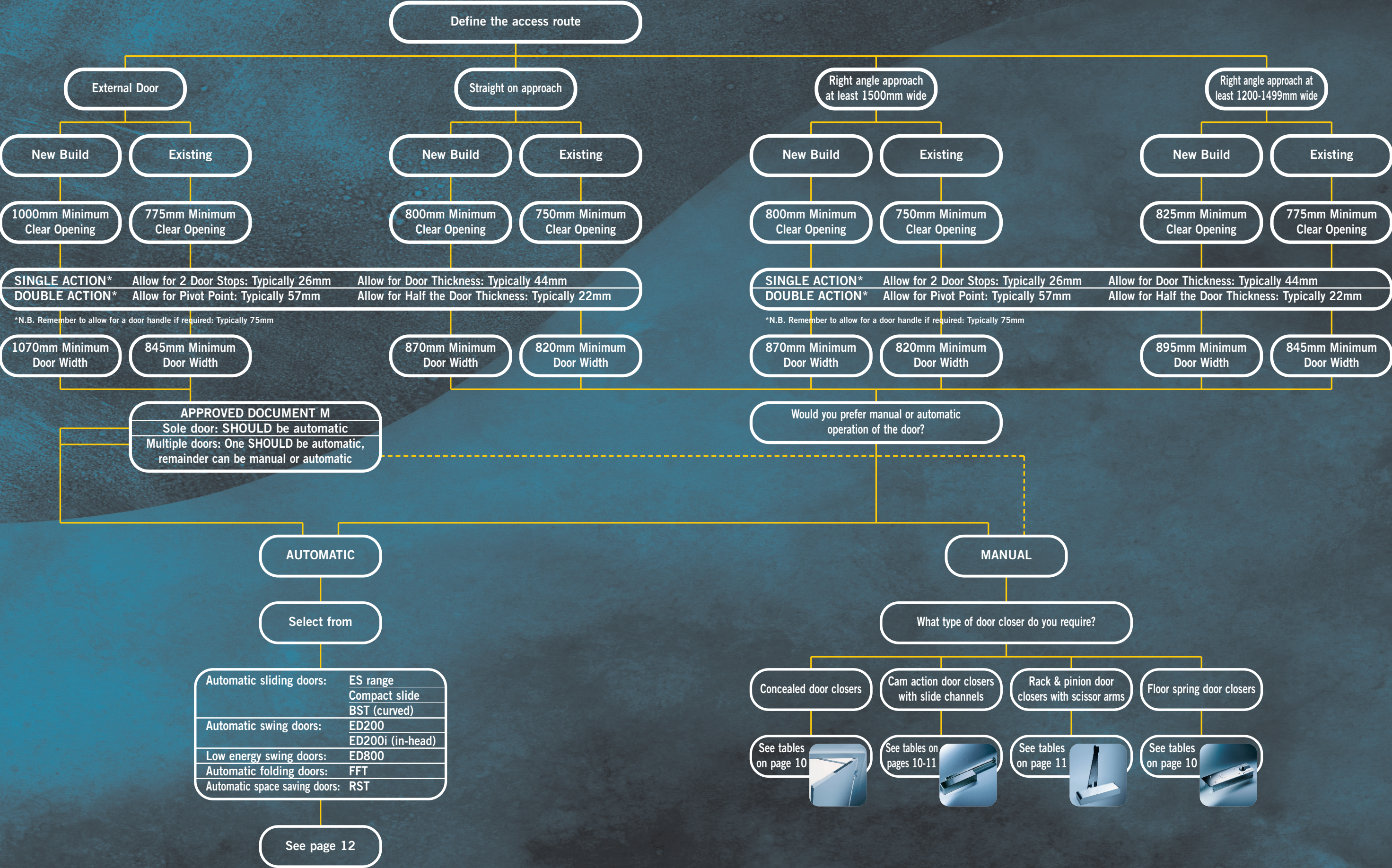
\*Door closers on fire doors must be set at a minimum power size of EN3.  
Under BS EN1154, size EN3 closers are recommended for use on doors up to 950mm wide.

BS EN1154	Door Sizes mm
EN1	750 & below
EN2	750-850
EN3	850-950
EN4	950-1100
EN5	1100-1250
EN6	1250-1400

For further information on the regulations regarding fire doors please see page 15.



# Non Fire Door



APPROVED DOCUMENT M

Sole door: SHOULD be automatic

Multiple doors: One SHOULD be automatic, remainder can be manual or automatic

Would you prefer manual or automatic operation of the door?

AUTOMATIC

Select from

Automatic sliding doors:

ES range  
Compact slide  
BST (curved)

Automatic swing doors:

ED200  
ED200i (in-head)

Low energy swing doors:

ED800

Automatic folding doors:

FFT

Automatic space saving doors:

RST

See page 12

MANUAL

What type of door closer do you require?

Concealed door closers

See tables on page 10

Cam action door closers with slide channels

See tables on pages 10-11

Rack & pinion door closers with scissor arms

See tables on page 11

Floor spring door closers

See tables on page 10

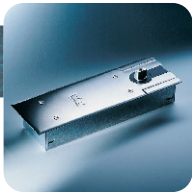


# Non Fire Doors

## Adjustable Door Closers

### FLOOR SPRING

Complies at this size



Product	Size	Minimum setting*	826	850	875	900	926
BTS75V	EN1-4	EN1					

### CONCEALED DOOR CLOSERS

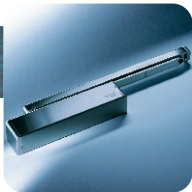


Product	Size	Minimum setting*	826	850	875	900	926
ITS96	EN2-4	EN2					



Product	Size	Minimum setting*	826	850	875	900	926
ITS96	EN3-6	EN3					

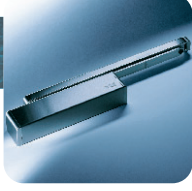
### CAM ACTION DOOR CLOSERS



Product	Size	Minimum setting*	826	850	875	900	926
TS93	EN2-5	EN2					



Product	Size	Minimum setting*	826	850	875	900	926
TS97	EN2-4	EN2					



Product	Size	Minimum setting*	826	850	875	900	926
TS92	EN2-4	EN2					

### RACK & PINION DOOR CLOSERS

Complies at this size



Product	Size	Minimum setting*	826	850	875	900	926
TS83	EN2-6	EN2					



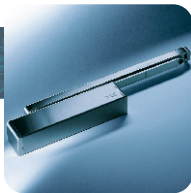
Product	Size	Minimum setting*	826	850	875	900	926
TS73V	EN2-4	EN2					



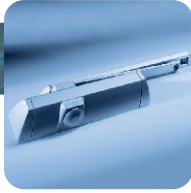
Product	Size	Minimum setting*	826	850	875	900	926
TS72V BC	EN2-4	EN2					

## Fixed Power Door Closers

### CAM ACTION DOOR CLOSERS



Product	Size	Minimum setting*	826	850	875	900	926
TS91	EN3	EN3					



Product	Size	Minimum setting*	826	850	875	900	926
TS90	EN3	EN3					

\*For non-fire doors the power size can be adjusted below size EN3 where the unit allows.

## External Doors

ADM states that "a non-powered manually operated entrance door, fitted with a self-closing device capable of closing the door against wind forces and the resistance of draught seals, is unlikely to be openable by many people, particularly those who are wheelchair users or who have limited strength".

Indeed ADM goes on to state "a powered door opening and closing system, either manually controlled or automatically operated by sensors, is the most satisfactory solution for most people. An automatic sliding door arrangement is particularly beneficial ... and its use can make it possible to reduce the length of any entrance lobby."

However, provided one of the entrance doors is fully accessible and automatically operated, then the remaining doors can utilise manual door closers set at a suitable spring strength to ensure closure of the door.

## Automatic Doors

When selecting an automatic door there are five main types to choose from:



### SLIDING DOORS:

- DORMA ES range / Compact Slide / BST curved doors
- Preferred solution as recommended by ADM



### SWING DOORS:

- DORMA ED200 / ED200i in-head unit
- Ideal for retro-fit or new build



### LOW ENERGY SWING DOORS:

- DORMA ED800
- Ideal for retro-fit or new build
- Activated by push pad or remote control



### FOLDING DOORS:

- DORMA FFT
- Ideal where space is restricted



### SPACE SAVING DOORS:

- DORMA RST
- Unique swivelling action means the sweep of the door is only a few centimetres outside the door line

DORMA offers a full supply and installation package for automatic doors. All installations are completed to the highest safety standards as recommended under BS7036. For further information on the specification of automatic doors please ask to see one of our Automatics sales consultants.

## Frequently Asked Questions

Based on our experience we have compiled a list of FAQ which may arise from the ODPM guidance:

### 1. In the guidance it states that the door closer should be of a variable power type. Can a fixed size door closer be used?

The ODPM took the view that a fixed powered closer with a typical efficiency of 60-65% (BS EN1154 requires a minimum of 55% at EN3) would be unlikely to comply with the 30N opening force. However very high efficiency fixed power closers such as the TS90 and TS91 Cam Action Closers will comply with the required opening forces on certain door widths and can therefore be used.

A variable power closer is a more flexible solution as it allows for on-site adjustment to site conditions and can be adjusted to ensure minimal opening force.

### 2. It states that "in general" fire doors should be of a width greater than 900mm. Why have DORMA offered solutions at lower widths?

We have based the solutions on the minimum requirements of the ADM, starting with a typical 826mm wide door and have then gone up in approximately 25mm increments. A number of DORMA high efficient door closers are capable of coping with doors at these smaller sizes.

The view taken by the ODPM when issuing the guidance on door widths has been based on an average door closer efficiency of between 60-65% which requires wider doors to meet the 30N opening force.

### 3. The guidance refers to electrically powered hold open devices. Which suitable products are available from DORMA?

DORMA offer the following electrically powered hold open door closers: ITS96 EMF, TS93 EMF, TS92 EMF, TS91 EMF and TS73 EMF. We also offer the BTS80 EMB floor spring.



Alternatively any DORMA door closer can be used in conjunction with independent hold open magnets (EM).

When using electrically powered hold open devices the door closing device is not required to comply with the opening force of less than 30N (when the electrical supply has been cut through activation of the alarm or power failure). However certain buildings may benefit from having electromagnetic devices that, when the power is removed, they still comply with the 30N maximum opening force. Here the use of Cam Action EMF Door Closers, or Cam Action Door Closers used with EM magnets will provide opening forces of 30N or less when fitted at size EN3 on door widths as detailed earlier.

### 4. The guidance refers to "swing free" controlled door closing devices. Which suitable products are available from DORMA?

"Swing free" door closers operate without the resistance of a door closer; the closer is only activated in the event of a fire or power failure.

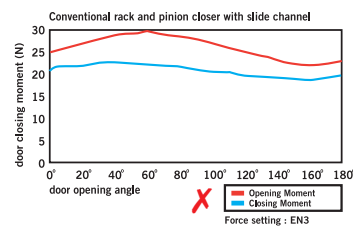
DORMA offer: TS73 EMF Free Swing option, TS99 FL and BTS80 FLB floor spring.

### 5. The guidance talks about lower power sizes for non-fire doors in comparison to fire doors using a door closer. What if a higher power size is required?

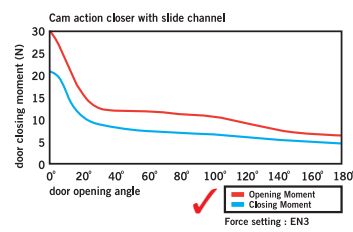
As there is no legal requirement for a minimum closing force on non-fire doors the door closer can be adjusted below size EN3 (18Nm, as required for fire doors). However the door closer should always be adjusted to successfully close the door. If this increases the force to exceed document M requirements, for example to overcome heavy duty seals on an acoustic door, DORMA can supply a supplement to an access statement detailing the measures taken to ensure opening forces have been kept to a minimum.



## 6. The guidance mentions avoiding door closers where the maximum closing force is not between 0-15 degrees. What type of closers exhibit these properties?



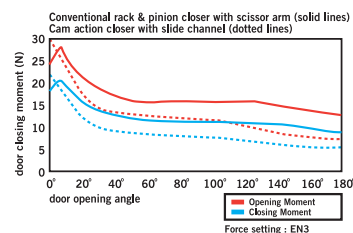
If a rack and pinion type closer is used in conjunction with a slide arm and channel, any user will experience an increase in opening resistance throughout the opening cycle and thus be denied ease of access.



DORMA's unique cam action closer combined with a slide arm and channel do not experience an increase in the opening resistance but a rapid fall in opening resistance on operation of the door.

As opening and closing forces are directly proportional, Cam Action closers exert their maximum closing force between 0-15 degrees as required in the guidance to ensure the correct latching action.

## 7. Why should Cam Action closers be preferred over standard rack and pinion closers?



Cam Action closers provide greater benefit to any user when operating a door fitted with a closing device. The guidance requires the opening resistance to drop to 22.5N by 30 degrees, and although Rack and Pinion mechanisms with scissor arms can achieve this, a Cam Action mechanism achieves it far easier and much more quickly, resulting in easier access for all.

## 8. Can full opening of the door be achieved when using the backcheck facility?



The guidance from ODPM details minimal resistance on a door when opened slowly. However this is only possible when using door closers with 'thinking backcheck'. With 'thinking backcheck' as opposed to 'fixed or standard backcheck', the backcheck facility only engages fully when the door is opened with great force or speed, if the door is opened slowly then the backcheck will not engage. All DORMA overhead door closers with backcheck facility have 'thinking backcheck'.

## 9. How often should regular maintenance be carried out?

Independent studies by PSA Research showed that where doors and ironmongery represent as little as 1% of a building's cost, they can account for 80% of the total maintenance bill in use. This effect will increase as building owners and users will want to ensure that their doors comply with the latest guidance. DORMA Service division offer a full maintenance package for manual, automatic and industrial doors. Please contact us for further details on 01462 477602.

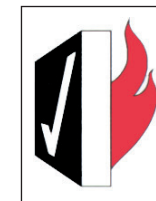


# Fire Regulations

## Fire Doors

Fire doors are designed to contain a fire within the area it started, giving people time to escape the building and limiting the fire damage.

Therefore all fire doors must be self-closing and capable of staying closed. All DORMA door closers, locks and panic hardware have been fire tested and approved by CERTIFIRE to ensure that they are fit for purpose.



## What is CERTIFIRE?

CERTIFIRE is a third party certification authority originally set up by Warrington Fire Research and BSI. It specialises in certification for a wide range of passive fire protection products which includes fire doors and their hardware.

To gain CERTIFIRE approval for use on a fire door:

- Items of door hardware must have been included in successful fire door tests
- They must be independently tested against the relevant BS EN or BS, to ensure their durability and safety
- They must be manufactured on quality assured production lines registered under an ISO 9000 regime

These three requirements give confidence to specifiers, regulating authorities and purchasers, that all relevant aspects of the product have been assessed.

## Details

CERTIFIRE approval does not give carte blanche for the use of an item of hardware on any fire door. Check the following:

**CF No.** Certificate number issued by CERTIFIRE

**ITT120** Suitable for timber fire doors

**MM240** Suitable for uninsulated metal doors

**IMM240** Suitable for insulated metal doors

The number indicates that some items may be suitable for doors up to 120 mins fire resistance, whereas others may be suitable for up to 240 mins.

## Check Certificates

DORMA is always willing to supply copies of certificates relating to their products. Certificates give details of any extra intumescent protection required in the locality of some mortised items. DORMA supplies such extra protection as ready cut gasket packs for those products which require them.

## BS EN 1155

## Electrically powered hold open devices for swing doors.

Covers both electro-magnetic devices incorporated into door closers, and hold open magnets. To comply, the devices must be capable of both manual and electric release. Any door closing element must comply with BS EN 1154 - controlled door closing devices.





Door Controls



Automatic Doors



Glass



Movable Walls



Service

DORMA UK Limited  
Wilbury Way  
Hitchin  
Hertfordshire  
SG4 0AB

Tel: 01462 477600  
Fax: 01462 477601  
E-mail: [dda@dorma-uk.co.uk](mailto:dda@dorma-uk.co.uk)

DORMA Ireland Limited  
19 Sandyford Office Park  
Foxrock  
Dublin 18

Tel: 01 295 8280  
Fax: 01 295 8284  
E-mail: [dormadublin@dorma.com](mailto:dormadublin@dorma.com)

[www.dorma-uk.co.uk](http://www.dorma-uk.co.uk)