

# An essential element in safeguarding lives and property



The principal objective of a door closer is to close a door and in the case of unlatched fire doors in a corridor, to keep the doors closed in the event of a fire. Most applications where the specification of a door closing device is mandatory, must use a product which conforms to the requirements of European Standard EN 1154 (or EN 1155 for electrically controlled units) and be CE marked accordingly.

The standard applies to all surface mounted or concealed overhead door closers, transom mounted closers and floor springs.

# EN 1154 – A harmonised standard designed for life safety



All forms of “Controlled Door Closing Devices” are covered by a harmonised European Standard, EN 1154. It provides details on product types and classifies products by use, test cycles, door mass, corrosion resistance and product performance requirements using a six digit classification code.

Closers which are controlled by an electromagnetic function must comply with the additional requirements of EN 1155.

### Fire doors

Within EN 1154, certain recommendations are made for closing devices used on fire door assemblies. These include:

- Closers size 1 and 2 are not considered suitable for use on fire doors.
- Door closers shall not include a hold-open device unless it is an electrically powered device connected to the building fire alarm system.
- Control regulators shall be either concealed or operable only by means of a tool.

**4**  
3-4

### Digit 1 - Category of use

For all internal and external doors for use by the public  
 - grade 3: For closing doors from at least 105° open  
 - grade 4: For closing doors from 180° open

**8**  
8

### Digit 2 - Number of test cycles

- grade 8: 500,000 test cycles

**4**  
1-7

### Digit 3 - Test door mass/size

Seven grades are identified - see table opposite on page 25

**1**  
0/1

### Digit 4 - Fire behaviour

- grade 0: Not suitable for use on fire/smoke door assemblies  
 - grade 1: Suitable for use on fire/smoke door assemblies

**1**  
1

### Digit 5 - Safety

All door closers are required to satisfy the essential requirement of safety in use - only grade 1 is identified.

**3**  
0-4

### Digit 6 - Corrosion resistance

Five grades of resistance are identified to EN 1670  
 - grade 0: No defined corrosion resistance  
 - grade 1: Mild resistance (24 hours)  
 - grade 2: Moderate resistance (48 hours)  
 - grade 3: High resistance (96 hours)  
 - grade 4: Very high resistance (240 hours)

### Closing force v Opening force

The closing force required to fulfill the life saving fire-safety function demanded by EN 1154 can, for some elderly or disabled people, be difficult to overcome and the door can become a barrier to safe and easy access for them.

Within the detail of BS 8300 and Approved Document M of Building Regulations, there is a requirement to achieve low opening forces to satisfy the need for easy and universal accessibility. As a consequence there is a conflict between the required closing force for fire safety and the desirable opening resistance which requires special consideration in the specification process.

We strongly recommend you discuss such applications with an Allegion Specification Consultant who can advise on the most appropriate solution.

# Mounting positions and closer power



Slide arm -  
Door mounted pull side



Slide arm -  
Door mounted push side



Slide arm -  
Transom mounted pull side



Slide arm -  
Transom mounted push side



Projecting arm -  
Regular fixing (door mounted pull side)



Projecting arm -  
Transom fixing (transom mounted push side)



Projecting arm -  
Parallel fixing (door mounted push side)

Where closer power is stated it will usually apply to a closer fitted either in Regular fixing applications (in the case of projecting arm closers) or in Door mounted pull side applications (for slide arm closers).

The closer power may vary for other mounting applications and consequently we recommend you check with your Allegion Specification Consultant or technical team.

### EN Closer power settings

Within EN 1154 seven closer power ratings are identified according to the maximum door leaf weight and width.

These are theoretical figures and the final closing power of any door closing device will be subject to any number of variables such as:

- Accuracy of closer installation
- Accuracy of door installation
- Friction in hinges
- Negative or positive air pressure

Because of such variables, the specification of an adjustable door closer is recommended to allow for site variables.

EN Size	Max. door weight (kg)	Max. door width (mm)
1	20	750
2	40	850
3	60	950
4	80	1100
5	100	1250
6	120	1400
7	160	1600

# A guide to specifying door closers

## Easy opening, reliable closing

In contrast to a conventional rack and pinion door closer in a slide channel application, the linear cam action principle of the Briton Cam Action Series of door closers is extremely efficient. The initial opening force decreases very rapidly as the door opens allowing children and the elderly to overcome the closing power without any problem.

During testing, the Briton cam action closers produced opening forces well within the requirements of Approved Doc M and BS 8300.

## Selecting the right closer

In most cases selecting the most appropriate door control will be dependent on a number of factors and the priority of each. These will include:

- Frequency of use
- Type of application (e.g school, library, factory)
- User profile - The Equality Act consideration
- Door situation/size/weight/fire resistance
- Budget
- Aesthetics
- Operating characteristics and other features



# The importance of accessibility



## The Equalities Act - disability legislation

Legislation aimed at providing universal accessibility of buildings requires service providers to make "reasonable adjustments to the physical features of their premises to overcome barriers to access".

Approved Doc M of the Building Regulations and BS 8300 both provide guidance in establishing recommended maximum opening forces for door controls to assist less able users.

High efficiency Briton closers which are capable of meeting the required levels of opening and closing forces are marked with the "Wheelchair Symbol" but accurate installation, hinge friction, door seals and

variable air pressure can all have a bearing on the opening resistance of the final doorset.

For doors which must also meet the stringent closing force requirements of EN 1154 for fire door applications, it may be more appropriate to use electromagnetic hold open or swing free closers or a powered opening solution. These must be CE marked in accordance with the requirements of EN 1155. All these options are available within the Allegion product portfolio.

For additional guidance in the selection process please contact Allegion on 01922 707400.



Series	Briton 2700	Briton 2300	Briton 2400	LCN 4040XP	Briton 2130	Briton 1100	Briton 996	Briton 2820
Description	High performance easy opening cam action overhead door closer	Commercial easy opening cam action overhead door closer	Concealed easy opening cam action overhead door closer	Heavy duty, rack and pinion overhead door closer	High performance, rack and pinion overhead door closer	Medium duty rack and pinion overhead door closer	Dedicated electromagnetic hold-open or swing-free closers	Medium duty floor spring
Accessibility								
Easy opening cam action	■	■	■					
Slide arm for slimline appearance and to minimise abuse	■	■		□	□	□		
Concealed closer for optimum aesthetics and abuse resistance			■					
Suitable for fire doors to EN 1634	2hr timber/1hr steel	2hr timber	1hr timber/90mins composite	2hr timber	2hr timber/4hr steel*	2hr timber/4hr steel	2hr timber	1hr timber
Frequency of use	High	Medium	Medium	Very high	Very high	Medium	Medium	High
Electromagnetic hold-open	□			□	□	□	■	
Cover options	A-line/Softline	Trimplate/Softline	n/a	Rounded Cover (metal)	Square (classic)/Luxury/Curved	Square (classic)/Softline	Square (classic)	n/a
Finish options	SES/SSS/PSS/PBS	SES/SSS/PSS	SE/SS/PS (arm only)	13 painted or plated finishes (7 finishes certified to EN 1634)	SES/GES/SSS/PSS	SES/GES/SSS/PSS/PBS	SE/GE/PB	SS/PS
Budget comparison	££££	£££	£££	££££	££££	££	££££	££
Typical applications	High end commercial specifications, leisure centres, care homes, hospitals, schools, nurseries	Internal doors in primary schools, nurseries, care homes, hotels, commercial offices	Internal doors in primary schools, nurseries, care homes, hotels, commercial offices	High end commercial specifications, leisure centres	High end commercial specifications, leisure centres	Warehouses, industrial units, internal office/school doors, back of house doors	High traffic doors, corridors, schools, hospitals	High traffic doors, corridors and double action doors, shopping centres & retail units

■ Standard □ Available as an option/variant

\* dependant on cover option

# Durability and heavy use

## Use and abuse

For some applications; schools, colleges and leisure facilities for example, the opportunity for and likelihood of abusive use of the door is relatively high in comparison with an office suite. In reality, any application where there is little incentive to exercise care is prone to the door closer being subjected to some extreme behaviour. In these cases we would recommend the following features:

**Concealed closers** - When the door is closed a concealed closer has no projecting arms and the closer body cannot be accessed from either side of the door. This makes it particularly resistant to vandalism and tampering.

**Slide arm** - Unlike a projecting arm closer, the slide arm and track reduces the possibility of damage.

**Backcheck facility** - The action of throwing a door open violently can damage the closer, the door and the surrounding frame and walls. The backcheck facility provides a hydraulic dampening to avoid such damage. This is not intended to replace a door stop.

**Hold open** - For doors which are subjected to high frequency or constant use, the option to keep the door in the open position is both convenient and prevents excessive wear. This feature is not permitted on fire doors.

For fire door applications, the hold-open (or swing-free) feature may be achieved through use of an electromagnetic hold-open or swing-free function which is linked to the building fire alarm or detection system. This option is available on several Briton and LCN series door closers.