



**Association of
Builders
Hardware
Manufacturers**

Best practice guide

Controlled Door
Closing Devices
to
BS EN 1154

in association with



*Extracts from BS EN 1154: 1997
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• ABHM BEST PRACTICE GUIDES

This publication is one in a series of guides addressing the major issues that should be considered when specifying, ordering or using the products it describes. It aims to provide the reader with a concise document which includes a summary of relevant sections from the new European Product Standard. The reader will then be in a position to seek further specialist advice where necessary and recognise genuine conformity to the new standards.

• BS EN 1154: Controlled Door Closing Devices

The standard provides details on product types, classification by use, test cycles, door mass, corrosion resistance, as well as definitions, product performance requirements, test apparatus, test methods and marking of products. In addition, the published standards include annexes illustrating the various points made through diagrams and supplementary text. Complete editions of the standards can be obtained by post from BSI Customer Services, BSI Standards, 389 Chiswick High Road, London W4 4AL.

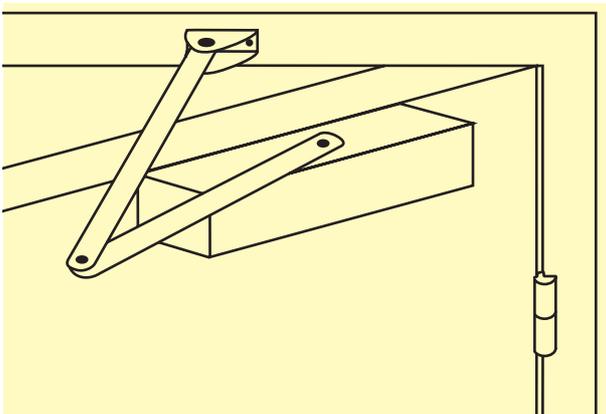
The above European standard will replace existing national product performance standards. In the UK this is currently BS6459: Part 1: 1984: 'Door Closers - Specification for mechanical performance of crank and rack and pinion overhead closers'.

Note: BS6459: Part 1: 1984 will be withdrawn when BS EN 1154: 1997 is published

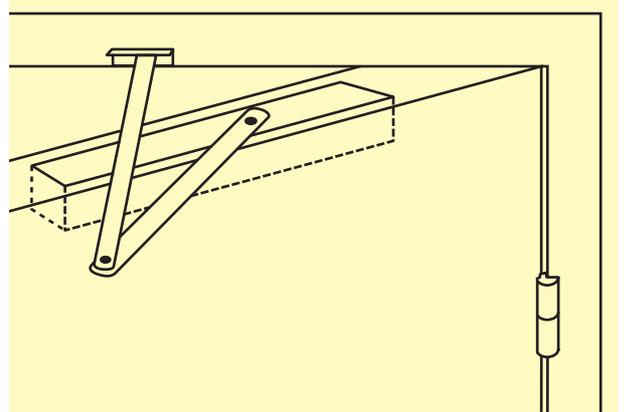
• SCOPE

Products included within the standard are illustrated below and include a wider range than covered by BS6459.

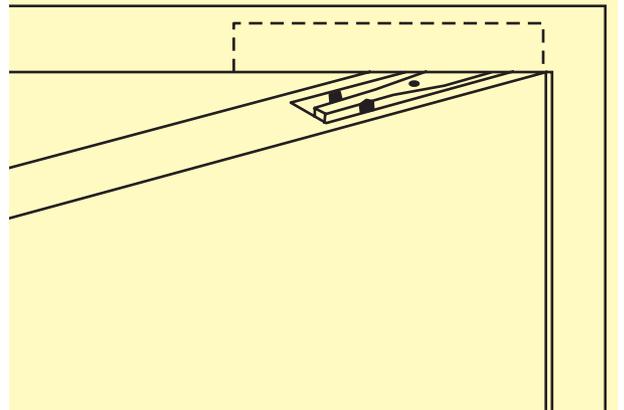
Note: BS EN 1154: This new standard now includes floor springs, see below.



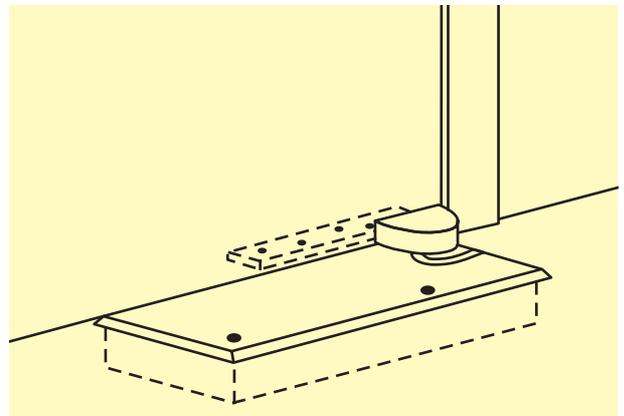
Overhead door closer surface mounted



Overhead concealed door closer door mounted



Overhead concealed door closer transom mounted



Floor concealed door closer - Floor spring

• CLASSIFICATION

The standard classifies door closers using a 6 digit coding system. It is intended that this classification system will apply to all building hardware product standards so that complementary items of hardware can be specified to, for instance, a common level of corrosion resistance, category of use, etc. Each digit relates to a particular feature of the product measured against the standard's performance requirements.

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6
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Digit 1 - Category of use

For all internal and external doors for use by the public, and others, with little incentive to take care, i.e. where there is some chance of misuse of the door.

- grade 3: For closing doors from at least 105° open
- grade 4: For closing doors from 180° open

Note 1: Grade 4 classification assumes standard installation according to the manufacturer's instructions.

Note 2: For applications subject to extremes of abuse, or for particular limitations of opening angle, door closers incorporating a backcheck function or provision of a separate door stop should be considered.

Digit 2 - Number of test cycles

Only one test duration is identified for door closers manufactured to this standard:

- grade 8: 500,000 test cycles

Digit 3 - Test door mass/size

Seven test door mass grades and related door closer power sizes are identified according to table 1 of this standard.

Where a door closer provides a range of power sizes both the minimum and the maximum sizes shall be identified.

Digit 4 - Fire behaviour

Two grades of fire behaviour are identified for door closing devices manufactured to this standard:

- grade 0: Not suitable for use on fire/smoke door assemblies
- grade 1: Suitable for use on fire/smoke door assemblies, subject to satisfactory assessment of the contribution of the door closer to the fire resistance of specified fire/smoke assemblies. Such assessment is outside the scope of this European Standard (See prEN 1634-1).

Digit 5 - Safety

All door closers are required to satisfy the Essential Requirement of safety in use. Therefore only grade 1 is identified.

Digit 6 - Corrosion resistance

Five grades of corrosion resistance are identified according to prEN 1670:

- grade 0: No defined corrosion resistance
- grade 1: Mild resistance
- grade 2: Moderate resistance
- grade 3: High resistance
- grade 4: Very high resistance

Example

The following marking denotes a closer capable of opening to at least 105°, and with a range of power size from size 2 to size 5.

Note that as the 4th digit is zero, such a closer would not be suitable for fire door use.

3	8	5 2	0	1	0
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• MARKING

The standard requires that each door closer and separately supplied accessory manufactured to the standard shall be marked with the following:

- The manufacturer's name or trade mark or other means of identification
- Product model identification
- The six digit classification listed above

d) The number of the European Standard (BS EN 1154)

e) The year and week of manufacture (may be coded)

• CE MARK?

It is not mandatory for door closers to be manufactured to BS EN 1154 and therefore they will not carry a CE Mark. However, work is being carried out on fire door assembly testing which calls up BS EN 1154 as a supporting standard. This means that fire doors, which eventually will carry CE Marking, will require their self-closing devices to be type tested for conformity to BS EN 1154.

• FIRE DOORS

We referred above to fire door assemblies which will require self closing devices. BS EN 1154 makes recommendations as to the closing forces considered necessary for such devices fitted to fire doors.

- The door closer when installed in accordance with the manufacturer's installation instructions shall be capable of closing the test door from any angle to which it may be opened.
- Due to their low closing moments, door closers size 1 and 2 are not considered suitable for use on fire/smoke door assemblies. Door closers with adjustable closing force shall be capable of adjustment to at least power size 3.
- The door closer shall not include a hold open device unless it is an electrically powered device in accordance with prEN 1155.
Note: See further details below under 'Related Standards'.
- Control regulators shall be either concealed or operable only by means of a tool.
- The design of a door closer shall be such that it is not possible to inhibit its closing action in any way without the use of a tool.
- Any incorporated delayed action function shall be capable of adjustment to less than 25 seconds between the door closing angles of 120° and the end of the delay zone.
- The door closer representative of its model shall have been incorporated in a door assembly that has satisfied the appropriate criteria of a fire test. The test shall have been on a full sized assembly in accordance with prEN 1634-1.

• RELATED STANDARDS

As companion to BS EN 1154, two further product standards are in preparation. The first, prEN 1155 covers electrically powered hold-open devices and will replace BS5839: Pt 3. The second, prEN 1158 covers door co-ordinator devices, (or selectors, to use UK terminology) and has no BS equivalent. Both standards are expected to be published during 1997.

Additional important considerations

In addition to ensuring that products satisfy the requirements of this standard, other factors should be taken into consideration when selecting controlled door closing devices. These not only include sourcing products from a reputable manufacturer, but also quality assurance, support services and unequivocal conformity to the standard as detailed below:

• QUALITY ASSURANCE

The internationally recognised standard for quality assurance, BS EN ISO 9000 provides confidence that the products are being manufactured to a consistent quality level. All ABHM members operate recognised BS EN ISO 9000 Quality Assurance Schemes.



Companies displaying this symbol are registered under the BSI Registered Firm Scheme.

• SUPPORT SERVICE

The correct installation of door closing devices is essential to ensure that they are able to operate efficiently within the performance levels described in this standard. Specialist advice is available from ABHM members in support of their products from specification stages through supply to effective operation on site.

• CONFORMITY TO BS EN 1154

Conformity to the standard must be clearly and unequivocally stated. Such phrases as “tested to ...”, “designed to conform to ...”, “approved to ...”, are not sufficient. To avoid misleading or confusing claims it is recommended that one of the following phrases is used when stating conformity:

- a) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1154. Test reports and/or certificates are available upon request.
- b) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1154 including the additional requirements for latch action*/backcheck*/delayed closing*/adjustable closing force*/fire/smoke door use*. Test reports and/or certificates are available upon request.
**Add as appropriate.*
- c) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1154 including the additional requirements for latch action*/backcheck*/delayed closing*/adjustable closing force*/fire/smoke door use*. Regular audit testing is undertaken. Test reports and/or certificates are available upon request.
**Add as appropriate.*

THE ASSOCIATION OF BUILDERS' HARDWARE MANUFACTURERS

Formed in 1897 to represent the interests of brassfounders, the ABHM and its members have been instrumental in the industry's advancement over the last 100 years.

Innovations in material and manufacturing technologies, as well as changes in the building industry throughout the world have resulted in many new practices. These advances have required new skills and knowledge from specifiers, stockists and installers in the building industry and placed new demands on manufacturers.

The Association and its members have consistently risen to this challenge, creating products which meet the needs of a changing world and developing performance standards

alongside national and international organisations, such as BSI and CEN, which enable the industry to select and compare hardware with confidence.

The advances made throughout the industry are reflected in the Association's structure, its membership and the activities in which it is involved. The ABHM now represents the United Kingdom's leading manufacturers of builders' hardware, architectural ironmongery and door and window fittings.

All members are listed in a Product Guide which includes an easy to use matrix of products and services available from each member.

British Hardware Federation

BHF represents some 3,500 ironmongery, hardware and DIY shops in the United Kingdom. In addition, it embraces the Independent Builders Merchants Service, a specialist division of the federation.

Builders Merchants' Federation

The Builders Merchants' Federation represents the majority of bona fide merchants in the UK. Its members have a combined turnover of £6 billion a year. Members range from large nationals to small independents.

Guild of Architectural Ironmongers

Founded in 1961, the Guild represents 95% of bona fide distributors within the UK and the majority of manufacturers of architectural ironmongery. The Guild serves to further all aspects of architectural ironmongery by promoting the interchange of information to encourage better product design and high professional standards of ironmongery scheduling and specification.

Master Locksmiths Association

The MLA is recognised by the Home Office, Police and British Standards as being the authoritative body for locksmithing. It was formed to promote the membership to Central and Local Governments, Industry, Commerce and the Public.



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