

Electronically Powered Hold-open Devices

to **BS EN 1155: 1997 + A1:2003**





dhf Best Practice Guide:

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dhf 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.

NOTE: Unless stated otherwise, references in this document to BS EN 1155 refer to BS EN 1155:1997 + A1:2003. Information in this guide is correct at time of publication and intended for guidance only. Information may since have changed and readers should consult the appropriate standards and authorities to confirm its veracity.

BS EN 1155

Electrically powered hold-open devices for swing doors

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 standard includes annexes illustrating the various points made through diagrams and supplementary text.

Extracts from BS EN 1155:1997 are reproduced with the permission of the British Standards Institution. BSI publications can be obtained from BSI Customer Services:

BSI Customer Services, 389 Chiswick High Road,
London W4 4AL Tel +44 (0)20 8996 9001
Email: cservices@bsi-global.com

NOTE: No previous British Standard existed for electrically powered hold-open devices incorporated in door closers and this is, therefore, a new standard. Devices not incorporated in door closers operating at 24 V dc are included in this standard. Devices not incorporated in door closers operating at 240 V ac are covered by BS 5839: Pt. 3: 1988, and this will be amended in due course.

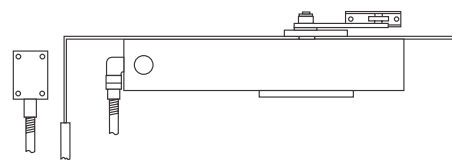
Amendment A1 to BS EN 1155 was published early in 2003 and this amendment provides for CE marking of conforming products in accordance with the EU Construction Products Directive.

SCOPE

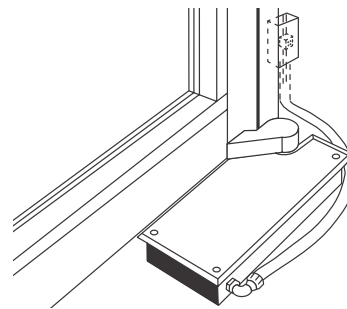
This European standard specifies requirements for separate hold-open devices and also for hold-open mechanisms incorporated in a door closer. Electrically powered hold-open devices for swing doors manufactured according to this European standard can hold a swing door at a fixed position or can allow the door to swing freely. In each case interruption of the electrical supply will cause the controlled door to close positively.

Electrically powered hold-open devices manufactured in accordance with this European standard are recommended for use wherever there is a requirement for reliable hold-open and release of self-closing fire/smoke door assemblies.

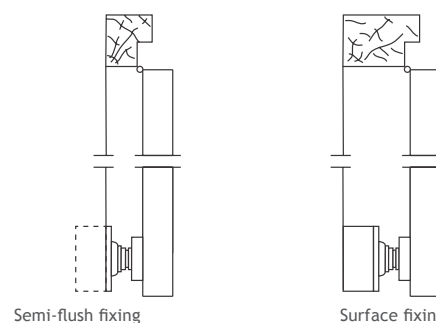
Whilst these devices can incorporate smoke or fire detection elements, the performance of those particular elements is outside the scope of this European standard.



Electrically operated hold-open/free swing overhead door closer surface mounted



Electrically powered hold-open/free swing floor concealed closer



Semi-flush fixing

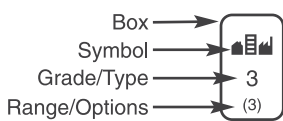
Surface fixing

Electrically powered separate hold-open devices for use with a separate door closing device

Classification

BS EN 1155 classifies products by using an 6 digit coding system. A similar classification applies 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 refers to a particular feature of the product measured against the standard's performance requirements.

dhf recommends the use of graphic icons to enhance clarity of information and has devised a system to facilitate assimilation of the various product classifications. Each feature within the product classification is represented by an icon comprising four elements; Symbol, Grade/Type, Range/Options and Box:-



The icon above is for a product which meets Grade 3 in the Category of Use classification, where EN 1155 stipulates only grade 3.

Full details on the ABHM graphic icons system can be found at www.dhfonline.org.uk

Digit 1 Category of use

Only one category of use is identified for electrically powered hold-open devices.

- Grade 3: for 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

Note: for electrically powered hold-open and free-swing door closers, where the opening angle is limited by the device, provision of a separate door stop should be considered.

Digit 2 Number of test cycles

Two test durations are identified for devices manufactured to this European standard:

- Grade 5: 50 000 test cycles. For all electrically powered hold-open devices
- Grade 8: 500 000 test cycles. For all electrically powered hold-open and free-swing door closers and devices that contain operating arms.

Digit 3 Test door mass

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

Five door mass grades and related hold-open power sizes are identified according to Table 1 of this European standard.

Where an electrically powered hold-open device is suitable for a range of door closer power sizes, both the minimum and maximum power sizes shall be shown.

Table 1

Hold-open power size	Recommended door leaf width max. mm	Test door mass
		kg
3	950	60
4	1100	80
5	1250	100
6	1400	120
7	1600	160

Digit 4 Fire resistance

Only one grade of fire resistance is identified for electrically powered hold-open devices manufactured to this European standard:

- Grade 1: Suitable for use on fire/smoke door assemblies subject to satisfactory assessment of the contribution of the electrically powered hold-open device to the fire resistance of specified fire/smoke door assemblies. Such assessment is outside the scope of this European standard (see EN 1634-1).

Digit 5 Safety

Electrically powered hold-open devices 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 in accordance with EN 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 separate hold-open device suitable for a range of closer power sizes from 4 to 6, and with high resistance to corrosion:



Related standards

As companion to BS EN 1155, two further amended and harmonised product standards have been published. The first, BS EN 1154 covers controlled door closing devices and has replaced BS 6459. The second, BS EN 1158 covers door coordinator devices (or selectors, to use UK terminology), and has no BS equivalent. Both these amended standards were published early in 2003.

Marking

Each electrically powered hold-open device manufactured to this European standard shall be marked with the following:

- manufacturer's name or trademark, or other means of identification.
- product model identification.
- the six digit classification listed above.
- power consumption and rated voltage of the device.
- number of this European standard.
- year and week of manufacture.

Note: This information can be in coded form.

CE marking

Electrically powered hold open devices intended for use on fire resisting doors and smoke control doors are covered by a Construction Products Directive mandate issued by the European Commission.

Consequently, this standard is regarded as a "harmonised" standard and compliance with it, supported by suitable evidence, allows the application of the CE mark.

As electrically powered hold open devices have a critical safety function, application of the CE mark will require the involvement of a notified certification body to provide verification of the compliance claims. This will involve initial type-testing of the product to EN 1155, initial inspection of the manufacturer's factory production control and continuing surveillance and approval of the factory production control. On satisfactory fulfilment of these tasks, the notified body issues an EC Certificate of Conformity which then permits the manufacturer to declare compliance and affix the CE marking to his product.

The standard requires the following additional information to accompany the CE marking:-

- the identification number of the notified certification body
- the name or identifying mark of the manufacturer
- the registered address of the manufacturer
- the last two digits of the year in which the marking was applied
- the number of the EC certificate of conformity
- reference to EN 1155:1997 + A1: 2003
- the classification code of the product

Note that, although the notified body has to be involved to verify the manufacturer's claims, the manufacturer remains responsible for

designing and producing the product, for affixing the CE marking, and for ensuring that the product meets the requirements of the Directive.

Specification issues

- All devices manufactured to this standard shall be designed for a rated supply voltage of 24V direct current with a ripple content of no more than 30%.
- Electrically powered hold open and free swing door closers shall conform to the requirements of BS EN 1154.

When designed for use on fire door assemblies, electrically powered hold-open devices representative of their type shall have been incorporated in successful, full size fire door tests (currently BS 476: Pt. 22).

- The Standard allows electrically powered door closers an element of creep towards the closed position (not more than 2° in 48 hours). Consideration should be given to this effect at the time of specifying. An alternative solution could be wall or floor mounted electro magnets with standard floor spring independent door closers.
- When using independent wall or floor electro-magnets attention should be paid to the positioning of the magnet in order to minimise stress on the door assembly. Ideally the magnet and door closing device should be at the same level thus avoiding twist.
- It is important that, where separate electro-magnet devices are used, the holding power of the magnet is matched to the door closer strength.

In addition to ensuring that products satisfy the requirements of this standard, other factors should be taken into consideration when selecting electrically powered hold-open 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.



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

Support service

The correct specification and installation of electronically powered hold open 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 **dhf** members in support of their products from specification stages through supply to effective operation on site.

Conformity to BS EN 1155

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 1155. 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 1155 including the additional requirements covered by BS EN 1154 for latch action*/backcheck/adjustable closing force*/fire/smoke door use*. Test reports and/or certificate are available upon request.

(c) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1155 including the additional requirements covered by BS EN 1154 latch action*/backcheck/adjustable closing force*/fire/smoke door use*. fire/smoke door use.* Regular audit testing is undertaken. Test reports and or certificates are available on request.

* Add as appropriate.

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dhf was created by a merger between the Association of Building Hardware Manufacturers (ABHM) and the Door and Shutter Manufacturers Association (DSMA), both of which had established excellent reputations in their respective industries, particularly in the area of technical expertise and the development of performance standards in national and international arenas.

dhf has built on these reputations by exploiting the synergies that exist between the two associations and combining their technical and financial resources to provide a unified, authoritative voice for the entire industry.

dhf and its members have consistently risen to the challenges posed by an ever-changing market, 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 products with confidence.

dhf now represents all the key players in the following sectors: locks and building hardware, doorsets, industrial doors and shutters, domestic garage doors and automated gates/traffic barriers.

With the ultimate aim of maintaining and raising quality standards throughout the industry, all dhf members must meet minimum standards of competence and customer service. They all operate within a Code of Conduct governing standards of workmanship, quality assurance, training, safety, business integrity and CE marking compliance.

Guild of Architectural Ironmongers

Founded in 1961, the GAI represents the majority of Architectural Ironmongers in the UK. The GAI serves to further all aspects of architectural ironmongery by promoting the interchange of information to encourage better products design and high professional standards of ironmongery scheduling and specification. GAI has also expanded its offering to include overseas clients, who are increasingly taking advantage of its comprehensive education programme.



Master Locksmiths Association

The MLA is the leading trade association for the locksmithing industry. It is recognised as the authoritative body by the police, government, insurers and other such groups. MLA licenced companies can provide customers with peace of mind regarding the security of their property. Its members undergo strict vetting and regular inspections.







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