



# ACCESS CONTROL ON ESCAPE DOORS

This technical briefing has been provided by GAI (Guild of Architectural Ironmongers) and DHF (Door & Hardware Federation) in response to requests for clarification on what should and should not be used as access control and electronic locking on escape doors.

# 1 INTRODUCTION

## Background

The long-established standards relating to escape door hardware, EN 1125:2008 and EN 179:2008 require egress to be achieved with a single action of the device fitted to the door. Balancing emergency escape with security is, however, often challenging.

While safety should take priority, the above standards have made it difficult to manage security risks. With the growth of the access control market and more electronic hardware products being used on fire doors and escape doors, the standard EN 13637:2015 was introduced. The introduction of this standard now means that electrically controlled locking products such as electro-magnetic locks, electric releases, electrical panic hardware and electric locks can be used on escape doors as part of a compliant system.

EN 13637 is not intended to replace the existing standards, but rather to provide additional options to control unauthorised use of escape routes and escape doors.

## Legal Status

EN 13637 is not currently harmonised or designated; this means that products cannot be conformity marked (CE or UKCA), and use of the standard is voluntary. EN 1125 and EN 179, on the other hand, are harmonised and designated standards, meaning that products within scope must be conformity marked in accordance with the standards.

To comply with EN 13637, all the elements involved must be tested together as a system; this standard cannot be used to declare the compliance of an individual component. There may, however, be instances where an element of the system, e.g. a push bar used to activate the electronic release system, will itself require conformity marking against the relevant standard as above.



Figure 1 - Panic Hardware used with an EM Lock which would comply with EN 13637

# 2 A COMPLETE SYSTEM

The new standard describes a complete system which can be used to electrically control an escape route door and will consist of, as a minimum, the following three elements, either mounted individually or combined in a single unit:

- **Initiating Element** for requesting the release of the electrical locking element e.g. touch bar, push bar, lever handle or exit button
- **Electrical Locking Element** for securing the door e.g. electro-magnetic lock, electric release, electric lock  
NOTE: the electrical locking element must be capable of reliably releasing under pressure when under a side load of up to 1000N. It must also have been tested as part of the complete system in accordance with EN 13637
- **Electrical Controlling Element** for supplying, connecting and controlling the electrical locking element and the initiating element e.g. power supply unit, controller, CMC (Control Management Centre)

## System features

EN 13637 allows more flexibility and choice than EN 1125 and EN 179, which require that the locking elements must retract immediately via a single operation. In certain instances, however, this may lead to security related issues; consequently, this standard includes both immediate release and two levels of time delay: -

- Grade 0 - no time delay (ideal for offices, schools, sports recreation centres, hotels etc)
- Grade 1 - single time delay: up to 15 seconds (ideal for retail stores, cinemas, child nurseries, residential homes, mental health wards, banks, security areas etc)
- Grade 2 - double time delay: up to 15 seconds, or up to 180 seconds (ideal for airports, seaports, power stations, remote areas etc.)

The introduction of this standard now means that electrical locking can be used, and immediate release (Grade 0) can still be achieved in a single action, allowing a variety of options. Examples would be:

- an electro-magnetic lock with a touch bar to release the armature plate or an exit button which disconnects the power
- an electric release with a mechanical lock, if the blocking element is part of a compliant EN 13637 solution and the electric release is certified with the lock case and escape device
- an electrical panic bar with latch bolt retraction also allowing the bolts to be withdrawn electrically from a remote location
- an electric lock with either levers or push bar/touch bar on the inside

In any of the above scenarios, any exit device must be compliant with EN 179 or EN 1125.

The final specification will depend on the building use, the type of users, i.e. public or trained staff and the security level.



**Figure 2** - Secondary locking shown above a mortice escape lock

## 3

## CONFIGURATION TO EN13637

**Configuration to EN 13637**

Four categories of EN 13637 are identified:

- **Category A** - Initiating element being integrated in, and activated by, a horizontal bar in accordance with EN 1125.
- **Category B** - Initiating element being installed outside the door leaf as part of an exit system which is functionally not linked to an exit device.
- **Category C** - Initiating element being integrated in, and activated by, a dummy bar or a dummy handle that is not an operating element.
- **Category D** - Other exit system not included in any of the above-mentioned categories.



**Figure 3** - Panic Hardware system with Electrical Latch Retraction compliant with EN 13637

**Time Delays**

When using electrical hardware, it is recommended that the system is linked to the fire alarm system in order that even where a time delay exists, the doors will release on the activation of the fire alarm. The time delay will increase security whilst maintaining the safety of the people inside.

A time delay of 15 seconds offers additional security for retail premises to deter theft, care homes to prevent the elderly from exiting the building unnoticed and nurseries to protect young children from unauthorised exit via the escape doors. The 15 second delay, coupled with an audio-visual alarm, enables a member of staff or security to investigate the situation.

The standard's Grade 2 time delay option must also include a CMC (Central Management Control) which links the system via CCTV to a control room which can deny or allow egress. This offers the advantage of controlling who gets access to an area which may require the CMC to make an area safe before allowing access. Airports would be an example of where the use of this system may offer benefits. If terrorists were in a location, they could be contained whilst preventing members of the public from entering the area. Under EN 13637 it is a requirement that, upon activation of an escape door, the door will release after T1 timing (15 seconds) unless the CMC react with a positive blocking of the door preventing escape.

When using a time delay an indicator and sounder gives a countdown to when the door will be released.

# 4

## ELECTRO-MAGNETIC LOCKS & ESCAPE DOOR HARDWARE

### Electro-magnetic locks

As electro-magnetic locks have no mechanical parts which can fail, then simply removing the power releases the door. These devices are available with different holding forces to suit the security requirements and, to support the use of fail unlocked devices, a battery backup in the power supply ensures that if power is cut, other than from a fire alarm, that the door remains secure.

Note also that when a fire alarm connection is required, reference should be made to BS 7273-4: 2015, Code of practice for the operation of fire protection measures – Part 4: Actuation of release mechanisms for doors.

Another advantage of using an electro-magnetic lock in an EN 13637 system as a blocking element with a panic device is that the panic device can be used normally when the building is in use. When the security alarm is set, once a building is empty, then linking the alarm to the blocking device will secure the door. When the alarm is turned off, power to the blocking device is removed and the panic hardware will conform to EN 1125 or EN 179.



**Figure 4** - Electro-magnetic Lock that can be part of an EN 13637 system and used for immediate release or on a time delay for security

### Escape door hardware

When using combinations of products on an escape door, it is important that the items have been tested together and third-party test evidence is available, to ensure that the relevant release forces are achieved, and the package functions correctly as described in the standard.

Escape doors are not always fire doors therefore the door specification should be checked before specifying any product. If the door is a fire door, then any hardware that is fitted must be CE / UKCA marked and certified for the door type i.e., timber or steel door and the required fire resistance.

## 5

## BUILDING REGULATIONS

Finally, as with all projects, it is building regulations that will define the specification and should be followed in the respective country as these may vary slightly between England and Wales, Scotland, Northern Ireland, Republic of Ireland and other countries around the world.

In the Republic of Ireland, the Private Security Authority's Licensing Requirements for Electronic Security - Access Control (PSA 67:2021) refer to EN 13637. This allows electro-magnetic locks, electric releases, electrical panic hardware and electric locks to be used for securing the doors with an initiating element such as a horizontal bar, lever or pad on the door or an exit button on the wall to release the locking element, depending on the type of building and whether members of the public will get access to the area.

This requirement precludes the use of the electric lock only function described under EN 13637. In all cases in the R.O.I. the EN 13637 solution should be overlayed as a secondary locking system over an EN 179 / 1125 solution. This standard is similar to the UK National Security Inspectorate (NSI) Code of Practice (NCP109), the third edition of which was published in 2021.



**Figure 5** - Initiating Element built into the operating element on the door



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For further details please refer to  
the Code of Practice: Hardware  
for fire and escape doors.  
[www.firecode.org.uk](http://www.firecode.org.uk)



#### **Guild of Architectural Ironmongers**

The Guild of Architectural Ironmongers (GAI) is the only trade body in the UK that represents the interests of the whole architectural ironmongery industry - architectural ironmongers, wholesalers and manufacturers. Its reputation is built on three key areas: education, technical support and community.

Its qualifications, education and CPD programmes are widely respected in the UK and overseas, including the GCC and Hong Kong. Its technical information service is the only specialist service of its kind, providing GAI members with comprehensive advice on issues relating to the legislation, regulations and standards governing the use of architectural ironmongery and related hardware. The GAI is run by the industry for the industry.

[www.gai.org.uk](http://www.gai.org.uk)



#### **Door & Hardware Federation**

DHF is a not-for-profit membership organisation that represents all the key players in locks and building hardware, doorsets, industrial doors and shutters, domestic garage doors and automated gates.

Due to its dedication for maintaining and raising quality standards, DHF has become the industry's 'go to expert' on training and technical advice, with its team sitting on various UK and European committees. It contributes to relevant industry standards and provides legislative and regulatory advice for professionals.

Through its commitment to educating the market, DHF has created comprehensive training and CPD programmes that benefit the industry. It is an accredited assessment centre for the Awarding Body in the Built Environment (ABBE) providing formal qualifications, forms part of an NOCN assessment centre for the industry specific NVQ and offers a wide range of fire and non-fire doorset courses in collaboration with BRE.

DHF continually produces publications such as best practice guides and technical specifications for the industry and was fundamental in the creation of DHF TS 007:2014 + A2:2018.

[www.dhfonline.org.uk](http://www.dhfonline.org.uk)