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## ACCESS CONTROL & ELECTRONIC LOCKS

### 7.1 Introduction

Electronic Access Control solutions have become increasingly routine components of the infrastructure of most commercial buildings. They can be found on the main entrances to many of our buildings, from the doors in a school nursery to the secure entrances at remote infrastructure sites and almost everywhere in between.

Access Control systems were originally designed and implemented to control who has access in and around a building and when they have that access. The range, complexity and capability of modern Electronic Access Control solutions has increased significantly in recent years. The introduction of mechatronic products - combining the intelligence and convenience of electronics with the security and safety of mechanical - has moved access control solutions on further still.

Electronic Access Control solutions are now often integrated with other security, human resource management and building management systems. Combining Electronic Access Control solutions with other building services provides increased efficiencies and enhanced user experience. As a result, electronic access control solutions are now routine within most work, home and lifestyle environments.

By their very nature, electronic access control systems are primarily designed to manage and control access to authorised persons. To achieve this logically and efficiently, systems are fitted at the points of building often used as main entrances, zonal entrances and circulation routes. Electronic locking is used to secure these entrances to limit movement to authorised persons only. It is at these points within a building that a conflict may inadvertently arise between providing secure access and ensuring safe egress.

Generally, with all instances of access control system design, selection, application and installation, priority must first be given to the ability of occupants to escape safely, which must not be impeded in any way. The safe egress from a building in any panic, emergency or fire evacuation situation, must always take priority over building security, except for a few unique situations which are outside the scope of this document.

Building regulation requirements, specific to electronic locking on escape routes, can vary from country to country. Many electronic locking products are designed and manufactured to incorporate performance tested escape functions and this Code of Practice supports their use as part of an approved system to EN 179, EN 1125 and EN 13637.

In applications where panic or emergency situations are likely to occur, the preferred method of egress - whether emergency, panic, or normal day to day use - should be provided by a performance tested escape locking solution such as one of the following examples:

- An electronic locking solution operated by a lever handle or push pad (an EN 179 type application)
- An electronic locking solution operated by a panic bar (an EN 1125 type application)
- An electronic escape system made up of suitable components (an EN 13637 type application)

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It is essential that all system component parts are suitably tested and certified collectively as part of a single solution for use in EN 179, EN 1125 or EN 13637 type applications.

It is important to consider that doors fitted with electronic access control are likely to be used as escape doors and escape exits. Due to their location within the building these doors may also be fire doors - as a result these doors will have additional fire certification requirements which will also apply to the electronic locking products that may be fitted to them.

Where electronic locks are used on escape doors, any electronic locking device which is surface fitted to doors and frames must not encroach into the minimum clear headroom requirement as defined by local building regulations.

For applications where it is important to maintain the perimeter security of a building, it may be appropriate to use fail secure electronic locks as part of a solution to EN 179 or EN 1125 where applicable. Local Building Control advice should be sought in all cases where this application may be considered with particular consideration given to escape doors which may need to be accessed by emergency services.

The following sections provide information on a wide range of electronic access control products, their requirements and suitability for use on fire and escape doors.



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### 7.2 Critical Recommendations

#### 7.2.1 - Electromagnetic locks

##### 7.2.1.1 - Fire doors

Where fitted to fire rated doors, it is essential that an electromagnetic lock has been included in a fire test to EN 1634-1 or assessed by a competent body.

The electromagnetic locks must be successfully tested to EN 1634-1 for the duration required either 30, 60, 90, 120 or 240 hours.

NB. if intumescent was fitted as part of the EN 1634-1 test, the same specification of intumescent must be used as per the test or assessment report.

##### 7.2.1.2 - Escape doors

Electro-magnetic locks may be utilised as part of an electrically controlled escape system. Where fitted to an escape door it is essential that the electromagnetic lock is installed in accordance with EN 13637. To release power to the electromagnetic lock an initiating and/or operating element as defined by the system manufacturer will be required.

EN 13637 is not a harmonised standard it is however, considered best practice and as such it is recommended to install electromagnetic locks in accordance with the requirements of the standard.

##### 7.2.1.3 - Fire rated escape doors

Where electromagnetic locks are fitted to fire rated escape doors, the following conditions apply:

1. The electromagnetic lock is supplied and installed in accordance with EN 13637 as part of an Emergency Escape Door solution
2. The electromagnetic lock must be tested and certified to EN 1634-1
3. The electromagnetic lock must not reduce the fire integrity performance of the door

#### 7.2.2 - Electromechanical striking plates (Electric strikes/releases)

##### 7.2.2.1 - Fire doors

For an electric strike to be used on fire doors, the electric strike and latch/lock must be fire rated and tested to EN 1634-1 or fire assessed by an approved body (UKCA) or notified body (CE).

NB. Electric strikes that are UKCA or CE marked are tested in the fail locked application for EN 1634-1.

In applications where electric strikes are fitted to a double door, the installation of the wiring providing signalling and/or power to the electric strike should in no way reduce the integrity and fire performance of the door.

When using an electric strike with a fire door it is important that if intumescent was fitted when tested that the specification is followed as per test or assessment report. When using intumescent it is usually fitted all around the body inside the frame.

When fitted to a fire door the electric strike has to be set as fail secure (fail locked).

The electric strike and lock must be installed in accordance with the relevant test data applicable to the application.

##### 7.2.2.2 - Escape doors

If an electric strike is used on an escape door, then the inside hardware must be tested with the electric strike to ensure that the panic or emergency exit hardware can release the door to the relative standards EN 179, EN 1125 or EN 13637

For escape doors an electric strike can be fail locked or fail unlocked as long as the inside panic or emergency exit hardware will always allow for a safe egress in one action. If the electric strike has to be unlocked electrically, then the electric strike must be fail unlocked.