Evolve Paddle Gates

MANUAL OF GOOD PRATICE
Rev 01

Contents

1. Safety, Prohibit and Legal Notices

The guidance in this manual is without prejudice to the requirements, for means of escape in the case of fire. The specifier must consult other relevant authorities such as fire, building control and the owner/occupier, as each have a related responsibility in the installation and operation of an access-controlled gate system.

Resellers, integrators, installers, specifiers, and owner/occupiers of premises intending to use an access-controlled gate system are strongly advised to establish predicted user characteristics and precise operational requirements such as: -

- The volume of pedestrian traffic at different times of the day.
- The type of pedestrian traffic, such as the elderly, the infirm, disabled persons, and young children.
- The level of security required.
- Type of clothing users are wearing such as high visibility clothing with reflective strips.

1.0 Safety notes.

Resellers, integrators, installers, service providers, specifies and owner/occupiers of premises, MUST adhere to these safety notes.

	If regular use by children (users shorter than 1m) is anticipated, ESP recommends: - ○ That children are kept under the supervision of an adult whilst near the gates. ○ That when using the gates children MUST be accompanied by an adult. ○ That the child MUST proceed ahead of the adult and that valid open commands are given for both the child and the adult. ○ That all optional safety devices are installed to achieve the highest level of safety. ○ That the gates parameters are set to full safety mode. ○ That the gates are set as controlled entry and exit. ○ That appropriate safety signage and notices are affixed/placed near the gates. ○ That where possible audio voice announcements are made to warn users of the dangers of playing near the gates and incorrect use.
	Anyone using the gates MUST be trained in their correct use. Failure to provide such training may result in serious accidents or injuries.
	Animals MUST be kept on their leads and under control by their owners.
	Access-controlled gate systems should be installed, maintained and inspected by a competent person in accordance with BS EN 16005:2012, 4.2, BS7036 and manufacturer's specifications.
	The gates are supplied configured in "minimum risk" mode for users. Any modification of parameters must be done knowingly by manufacturer trained personnel.

	The gates are designed for indoor use only and must be protected from the outside elements.
	The installer MUST comply with local regulations when installing an access-controlled gate system.
	More detailed safety requirements are given in BS EN 16005:2012, 4.2, BS7036 and our manual of good practice (MOGP).
	The gates MUST not be used for any other purpose other than which they have been designed.
	Access to the mechanism must be reserved for manufacturer trained personnel that are fully aware of the electrical and mechanical risks involved whilst working on the equipment.
	For any operation that does not require the equipment to be powered, isolate at the distribution panel or local isolation switch.
	Internal item likely to be energised or move MUST be handled with care.
	The gates MUST be fastened to the floor before putting into use.
	For safety reasons it should NOT be assumed the gates are working safely. The owner/occupier MUST carry out weekly checks on all safety devices.
	There should be no notice boards. Literature racks, merchandise displays or other distractions or obstructions in the vicinity of the gates which may congest or inhibit traffic flow.
	ESP cannot be held responsible for any damage or injury resulting from the improper use of the gates.
	Do not install this equipment in an explosive area.
	To avoid the risk of voiding the warranty use antistatic gloves or bracelets when handling electronic components.
	Do not add unapproved accessories.

1.1 Prohibit notices.

Resellers, integrators, installers, service providers, specifies and owner/occupiers of premises, MUST adhere to these prohibit notes.

	Do not tailgate.
	Do not travel in the wrong direction.
	Do not rush the gates.
	Do not loiter in the gates.

	Do not play in the gates.
	Do not allow children to use the gates unaccompanied.

1.2 Legal notes.

Resellers, integrators, installers, service providers, specifies and owner/occupiers of premises, MUST adhere to these legal notes.

	In the event of resale of the equipment, it is the responsibility of the seller to ensure: - ○ That a copy of the safety notices are provided to the purchaser. ○ That a copy of the handover manual is provided to the purchaser. ○ That the equipment's foreseeable environment, user and technical characteristics of the site are meet by the equipment.
	The re-seller shall defend and indemnify ESP from any claims which may be raised against ESP due to the seller's failure to comply with the legal and safety notices.

2. Purpose

The purpose of this document is to provide Evolve importers, distributors, reseller, specifiers, integrators, installer's, property owners, occupiers and duty holder's guidance on act(s), regulation(s) and law(s) relating to the supply, installation, and operational requirements applicable to powered pedestrian paddle leafed gates.

It is intended to be used by importers, distributors, reseller, specifiers, integrators, installer's, property owners, occupiers, and duty holders. It is also intended to be used by designers of the application into which powered gates are to be installed.

3. Regulations that may apply.

The following act(s), regulation(s) and law(s) are not intended to be a comprehensive guide, but a guide to some important legal requirements regarding installations such as these. These act(s), regulation(s) and law(s) are provided on a without ‘‘prejudice” basis to aid Evolve in fulfilling our obligations under the legislation affecting installations such as these.

British Standards should be used as a form of guidance and recommendations only and as such they are only quoted in this document for reference purposes only.

3.0 The Supply of Machinery (Safety) Regulations 2008

The Machinery Directive 2006/42/EC regulates the placing on the market, and the putting into service, of machinery in the European Economic Area (EEA), as currently undertaken by Directive 98/37/EC.

Attention is drawn to: -

PART 3 section 7, The general prohibitions, and obligations.

1. No responsible person shall place machinery on the market or put it into service unless it is

safe.

2. Before machinery is placed on the market or put into service, the responsible person must: -
   (a) ensure that the essential health and safety requirements are satisfied in respect of it.
   (b) ensure that the technical file is compiled and made available.
   (c) provide, in particular, the information necessary to operate it safely, such as instructions.
   (d) follow, as appropriate: -
      (i) the conformity assessment procedure.
      (ii) one of the conformity assessment procedures prescribed by regulation 11; or
      (iii) one of the conformity assessment procedures prescribed by regulation 12.
   (e) draw up the EC declaration of conformity, and ensure that: -
      (i) a copy of it accompanies the machinery; and
      (ii) the original is retained; and
         a. affix the CE marking to the machinery: -
         b. visibly, legibly, and indelibly.
3. A responsible person must carry out, or procure the carrying out of, all the necessary research and tests on components, fittings, or the completed machinery to determine whether, by its design and construction, it is capable of being assembled and put into service safely.

3.1 Health and Safety at Works Act 1974 Chapter 37.

Attention is drawn to: -

Section 6 describes the general duties of manufacturers etc. with regards to articles use at work.

1. It is the responsibility of any person who designs, manufactures, imports, or supplies any article for use at work: -
   (a) To ensure, so far as is reasonably practicable, that the article is designed and constructed to be safe and without risks to health at all times when it is being set, used, cleaned or maintained by a person at work.
   (b) to carry out or arrange for the carrying out of any necessary research with a view to the discovery and, so far as is reasonably practicable, the elimination or minimisation of any risks to health or safety to which the design or article may give rise.
2. It is the responsibility of any person who erects or installs any article for use at work in any premises where that article is to be used by persons at work: -
   (a) To ensure (so far as is reasonably practicable), that nothing about the way in which it is erected or installed makes it unsafe or a risk to health when properly used.
3. Where a person designs, manufactures, imports, or supplies an article for or to another the responsibility that the article will be safe and without risks to health when properly used, shall have the effect of relieving the first-mentioned person from this duty.
4. For the purposes of this section an article or substance is not to be regarded as properly used where it is used without regard to any relevant information or advice relating to its use which has been made available by a person by whom it was designed, manufactured, imported, or supplied.

3.2 Regulatory Reform (Fire safety) Order 2005.

The Regulatory Reform (Fire Safety) Order, made in June 2005, was the biggest overhaul of fire safety legislation in decades. The main effect of the changes was to move towards greater emphasis on fire prevention in all non-domestic premises, including the voluntary sector and self-employed people with premises separate from their homes.

Attention is drawn to: -

1. Responsibility for complying with the fire safety order rests with the 'responsible person'. In a workplace, this is the employer and any other person who may have control of any part of the premises, e.g. the occupier or owner. In all other premises the person or people in control of the premises will be responsible.
2. If there is more than one responsible person in any type of premises, all must take all reasonable steps to work with each other.
3. Responsible person(s) will have to carry out a fire risk assessment which must focus on safety in case of fire of all 'relevant persons'. It should pay particular attention to those at special risk, such as the disabled and those with special needs.
4. The fire risk assessment will help identify the risks that can be removed or reduced and to decide the nature and extent of the general fire precautions needed to take to protect people against the fire risks that remain.
5. Integrated risk management has shifted the focus in planning to put people first, looking at the risks arising from all fires and other emergency incidents, and at the options for reducing and managing them.

3.3 Approved document B, Fire Safety.

The Approved Documents are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the requirements. Thus, there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant requirement in some other way.

For offices and shops more detailed information is given in ISBN-13: 978 1 85112 815 0

Attention is drawn to: -

Widths of escape routes and exits and how they are calculated are detailed in Section 2. Table 2.3 states: -

Maximum number of people	Minimum width (1)(2)(3)
60	750(4)
110	850
220	1050
More than 220	5mm per/person (5)

Notes:

1. See appendix D for methods of measurement.
2. Width may need to increase to meet guidance in Approved Document M.
3. Width less than 1050mm should not be interpolated.
4. Widths less than 1050mm should not be interpolated.
5. May be reduced to 530mm for gangways between fixed storage racking, other than in public

areas of shops and commercial Purpose Group 4 buildings.

6. 5mm/person does not apply to an opening serving fewer than 220 persons.

IMPORTANT NOTE(S)

1. ESP recommend having an additional a break glass fitted in the vicinity of the powered gates as an additional backup should the fire alarm not open the gates or if the evacuation was not fire related.
2. ESP does NOT recommend: -
    - The use of a fire alarm relay in the power supply, or
    - The use of the passage authorisation signals via the access control system.

3.4 Approved document M, Access to and the use of buildings.

Although Approved Document M is not intended to include powered gates, the guidance given may be helpful for such installations.

Table 2 of Document M states that for new buildings (worst case, existing building are less) the clear door width must be: -

- Straight on approach = 800mm.
- At right angles to an access route of 1500 = 800mm.
- At right angles to an access route of 1200 = 825mm.
- External doors = 1000mm.

3.5 Approved document K4, Protection against impact with glazing.

Approved Document K4 gives guidance on impact with glazing. It states that people with impaired vision should be in no doubt as to the location of glass entrance doors, especially when they are within a glazed screen.

Notes

a. Manifestation on the glass should be fitted at two levels, 850 to 1000mm and 1400 to 1600mm above the floor, contrasting visually with the background seen through the glass (both from the inside and outside) in all lighting conditions.
b. If the manifestation takes the form of a logo or sigh at least 150mm high (repeated if on glass screen), or a decorative feature such as broken lines or continuous banks, at least 50mm high.
c. Where adjacent to, or forming part of a glazed screen, are clearly differentiated from it by the provision of a high-contrast strip at the top and on both sides.
d. Where powered gates are held open, there must be guarding to prevent the leading edge constituting a hazard.

3.6 BS7036-0-2014 Power operated pedestrian door-sets – Safety in use.

Although BS7036-0:2014 is not intended to include these types of powered gates, the guidance given may be helpful for such installations.

3.7 BS EN16005:2012 Code of practice for safety at powered doors.

Although BS EN16005:2012 is not intended to include these types of powered gates, the guidance given may be helpful for such installations.

Attention is drawn to: -

4.2.1 General

The manufacturer shall provide with the machine an instruction handbook in accordance with EN ISO 12100:2010, 6.4. In particular the following shall be included: -

The manufacturer shall provide information on operation, maintenance, and inspection. Documents with instructions on how to correctly install and dismantle the powered gate shall be provided where appropriate.

Particular importance should be devoted to the description of danger points, the appropriate protective devices and residual risk.

All documentation and instructions relevant to the gate's installation and maintenance requirements and any incorporated drawings, shall be legible and written in a language acceptable in the country in which the product is to be installed.

Installation instructions to be solely used by the professional installer and which are not intended to be handed over to the owner, may be written in any official language used in Europe and agreed upon between the manufacturer and purchaser.

The documentation shall include all the necessary warning, advisory or cautionary notices.

Proper operating instructions including routine maintenance instructions shall be provided to the final user after installation. The instruction must at least include: -

a) Correct method of operating the gates.
b) Operating conditions: e.g., operating hours per day, automatic/manual operation, indication of the operating mode(s).
c) Explanation of the warning signs of the gate.
d) Information about the safe use of the manual emergency and/or manual release.
e) Range of intended environmental conditions (e.g., temperature, relative humidity, electromagnetic fields and when applicable warning against use in windy conditions).
f) Restrictions on use.
g) Details of safety functions, list, and location of protective devices.
h) Information on prohibited use such as dashing though an open gate.

Routine maintenance instructions must: -

a) Highlight that to ensure safe operation, long term reliability and working efficiency, a powered gate must be regularly maintained according to the manufacturer's specification.
b) Detail frequency of maintenance to be carried out.
c) Give simple instruction that can be undertaken by the owner without specific competence.
d) Highlight all maintenance that must be carried out by a professional.
e) Inform the owner about the importance of recording and keeping maintenance records.

4.6.1 Avoidance of danger points and protection

Powered gates must be designed so that hazards due to crushing, shearing, impact and drawing-in during the opening and closing cycles are avoided or so the safeguards against such hazards are provided.

3.8 BS EN 1991-1-7:2006+A1:2014 Actions on structures.

BS EN 1991-1-7:2006+A1:2014 covers accidental actions. It provides dead and minimum recommended imposed floor loads for use in designing buildings. It applies to:
a) New buildings and new structures.
b) Alterations and additions to existing buildings and existing structures.
c) Existing construction on change of use.

This standard also provides recommendations for vertical loading on parapets, barriers, and balustrades.

3.9 BS 6180:2011 Code of practice for barriers in and about buildings.

BS 6180:2011 gives the recommendations and guidance for the construction of barriers in and around buildings. The standard applies to temporary and permanent barriers designed to protect people from hazards or restrict access. It outlines requirements for protective, crash and crush barriers as well.

3.10 BS 8300-2:2018 Design of an accessible and inclusive built environment.

BS 8300 gives the recommendations for the design of new buildings and their approaches to meet the needs of disabled people. It applies to access routes to and around all buildings, and entrances to and interiors of new buildings.

The recommendations given in this standard also apply for assessing the accessibility and usability of existing buildings and, where practicable, as a basis for their improvement. The extent to which the recommendations apply to listed and historic buildings is determined on a case-by-case basis.

It states turnstiles and security pass gates should be used only where their use can be supervised. Where turnstiles and security barriers are necessary, bi-parting or folding type installations should be provided.

Where turnstiles and security barriers or other similar forms of access control, e.g., those with rotating arms, are used, a wide aisle gate or complementary side-hung gate, with a minimum 1000 mm clear opening width, should be installed.

Some important sections: -

- 8.2.3 details on power-operated doors.
- 8.2.4 details on revolving doors.
- 8.3.1 details the effective clear width though a doorway.
- 8.3.4 details the visual contrast on doors and walls.
- 8.3.6 details glazed doors manifestation.
- 8.5.1 details the activation points for door entry systems.
- 20 details requirements for various types of buildings.

- Annex A (informative) management and maintenance
- Annex C (informative) Slip potential characteristics of treads, ramps surfaces and floor finishes.

Compliance with a British Standard cannot confer immunity from legal obligations. Particular attention is drawn to the following legislation:

- Equality Act 2010 [2].
- Building Regulations 2010 and subsequent amendments [3].
- Building (Amendment) (Wales) Regulations 2014 [4]
- Building (Scotland) Regulations 2004 and subsequent amendments [5];
- Building Regulations (Northern Ireland) 2012 and subsequent amendments [6];
- Regulatory Reform (Fire Safety) Order 2005 [7];
- Fire Safety (Scotland) Regulations 2006 [8];
- Fire Safety Regulations (Northern Ireland) 2010 [9].
- Attention is also drawn to Article 9 in the UN Convention on the Rights of Persons with Disabilities, which states that appropriate measures should be taken to ensure that disabled people have access on an equal basis with others to the physical environment, transportation, information, and communications, and to enable them to live independently and participate fully in all aspects of life.

NOTE(s)

1. Access to buildings. This standard refers to egress in the event of fire or other emergency, but the main recommendations for means of escape are given in BS 9999.
2. Detailed guidance on designing schools for disabled children and children with special educational needs is available in Building Bulletin 102

3.11 Other regulations

The following is a list of other act(s), regulation(s), and law(s) that should be considered by Evolve, importers, distributors, reseller, specifiers, integrators, installer's, property owners, occupiers, and duty holders as part of the supply and installation into the European zone:

Supply regulations.

- Machinery Directive 2008/42/CE.
- The Producer Responsibility Obligations (Packaging Waste) Regulations 2020
- WEEE Directive 2002/96/EC.
- RoHS Directive 2002/95/EC.
- Low voltage Directive 2006/95/CE.
- Electromangnetic compatability Directive 2006/108/EC.
- EN12100-1:2010 Machinery – Basic terminology and methodology.
- EN12100-2:2003+A1:2009 Machinery – Technical principles and specifications
- EN60204-1:2006+A1:2009 Safety of machinery. Electrical equipment of machines. General reqirements
- EN61000-6-3: 2007+A1:2011 Electromagnetic compatability (EMC). Generic standards, Emisions standards for residential, commercial and light-industrial enviroments.
- EN61000-6-2:2005 Electromagnetic compatability (EMC). Generic standards for industrial enviroments.

Installation regulations.

- BS 9999:2017 Code of practice for fire safety in the design, management and use of buildings.
- BS 7671:2018+A1:2020. Requirements for Electrical Installations. IET Wiring Regulations.
- BS 6206:1981. Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings. Partly replaced by BS EN12600:2002.
- Control of Noise at Work Regulations 2005.
- Construction (Design and Management) Regulations 2015.
- Electricity at Work Regulations 1989.
- Provision and use of Work Equipment Regulations 1998.
- The Management of Health and Safety at Work (Amendment) Regulations 2006.
- The Workplace (Health, Safety and Welfare) Regulations 1992.

4. The Equipment Specifier.

This section is not intended to be a comprehensive guide, but a guide to some important advice and recommendations that should be considered by the equipment specifier.

4.0 The Initial Design Stage.

At the design specification stage, the specifier should seek specialist advice from, and work in close liaison with, the equipment manufacturer or their approved distributors. The specifier should also consult other relevant authorities (e.g. fire and building control authorities, and end user organizations) since each has particular, but related, responsibilities.

It is particularly important for the specifier to establish predicted user characteristics and precise operational requirements such as: -

- The volume of pedestrian traffic at different times of the day.
- The type of pedestrian traffic, such as the elderly, the infirm, disabled persons, parents with pushchairs and young children.
- The level of security required.
- If users are wearing high visibility clothing.

It is essential that appropriate safety devices and safety measures are chosen. The specifier should, therefore, ensure that a full hazard analysis and risk assessment is undertaken to confirm that the final installation is safe for its predicted use.

If the hazard analysis and risk assessment indicate that risks cannot be reduced to an acceptable level using safety devices and safety measures, and a residual risk remains for certain sectors of the population, then additional suitable safety measures should be provided.

4.1 Planning.

The specifier should plan the design and location of powered gate installations carefully, taking account of the following: -

- Powered gates should be sited so that they are readily visible and have sufficient space on either side to accommodate the passage of pedestrians approaching and leaving the

gates.

- The clear opening of the walkway should be adequate for the anticipated volume and type of pedestrian traffic.
- Ramped floors up and down to powered gates are a potential hazard and should be avoided.
- Most powered gates obstacles are fully glazed but, where they are not, vision panels should be provided where appropriate.

4.2 Floor Surfaces.

To minimize the risk of trapping feet, hands, bodies etc. underneath powered gate leaves, the bottom edge of the leaves should be positioned at, and maintain an appropriate clearance from, the floor. The floor surfaces over which gates leaves pass should, therefore, be even and level.

To minimize the risk of tripping or obstruction, all floor-mounted items, e.g., control mats and threshold plates, should be suitably tapered or ramped or, where practicable, recessed into a mat well to be flush with the surface of the floor. Flooring should, where practicable, incorporate anti-slip or water clearing capabilities.

NOTE(s)

1. Clearances are specified in BS EN 16005.

4.3 Congestion.

If congestion occurs near a powered gate, pedestrians might be forced into the path of the gates and could then be at risk of injury. To reduce the risk of congestion in the vicinity of a gate, the installation and its immediate area should be designed and arranged to promote safe pedestrian traffic flow. In particular:

- The layout and the area's leading to and from the installation should be suitable for the type of gate.
- The installation should be suitable for the type and volume of pedestrian traffic.
- There should be no obstructions near a gate restricting the flow of pedestrian traffic.
- Cross-flowing pedestrian traffic close to a gate should be avoided.
- There should be no distracting notices or displays close to gates.
- Any intended direction of traffic-flow should be clearly marked.

4.4 Supervision of powered gates.

Where appropriate, staff should be trained in the use of the powered gates to enable them, as applicable, to:

- Ensure users particularly elderly, the infirm, disabled persons and young children are not exposed to unnecessary risks when using the gates.
- Help and advise the elderly, infirm, disabled people and young children.
- To take appropriate action in an emergency.

4.5 Specialised operation.

Powered gates can have overriding controls that limit the function to one of the following:

- to remain open.
- to remain closed.

- to operate in one direction only.

Where the normal function of the powered gate is overridden by selection of a specialised operation that creates a potential hazard, then it is essential that warning is given to users. Such warnings should preferably be in the form of notices placed on the gate itself. Barriers, or notices on stands, should not be used where they could cause an obstruction in case of emergency.

4.6 Electrical design.

The electrical installations to the point of supply should conform to BS 7671.

4.7 Glazing.

Glazing should conform to the appropriate part of BS 6262 using safety materials conforming to BS 6206. Glazing should be appropriately marked or incorporate features to make its presence apparent.

Construction of powered gate leaves, frames, associated sidelights, and hardware should be constructed in such a manner that they do not create the potential to cause injury. They should be sufficiently robust to withstand the forces occurring during normal operation and foreseeable misuse.

4.8 Activation systems.

Powered gates can be activated automatically, manually, or remotely, and the selection of the most appropriate system depends on various factors, including the location of the gates and the circumstances of its intended use.

Specialist technical advice (e.g., manufacturer or supplier) should always be sought in the selection of activators.

4.8.0 Automatic activation.

Automatic activation, where installed, should ensure wherever possible that a person approaching the gate does not have to hesitate whilst the gate is opening. In certain situations, it might be necessary for the user to wait for the gate to open; the hazard analysis and risk assessment should take this into account.

NOTE(s)

1. Unnecessary activations could present additional hazards.
2. Examples of automatic activation devices include motion sensors, presence sensors, photo electric devices and control mats.

4.8.1 Manual activation.

Manual activation is the physical action which opens a powered gate. This could be a card reader, push button, push pad or by means of other mechanical switching devices. Manual activation could also be initiated by pushing a gate to start motion. Activators should be positioned so they do not create additional hazards, i.e., not positioned in the swept area of a swing gate.

When manual activators are used, they should be clearly marked and identifiable so that users are aware of their function. When manually activated powered gates are positioned at the side of an automatically activated powered gate for vulnerable users who need alternative access, additional operating signage should be provided where appropriate.

4.8.2 Remote activation.

Remote activation to open or close a gate should be used only when operation of the gate is not anticipated to result in a hazardous situation. The gate should be arranged to open and close at an appropriate speed and should include safety measures to minimize any risks identified in the risk assessment, especially when the remote command is initiated automatically or without the initiator being in direct vision of the gate.

NOTE(s)

1. Examples of remote activation devices include push buttons, pull-cords, elbow switches, key switches, and access control devices.

4.9 Safety devices

A wide range of safety devices are available to take account of the diverse circumstances in which powered gates are used, and to ensure that each installation is suitable and safe. Safety devices should be monitored by the control system and should select a predetermined safe mode if a fault is detected. Protection at danger points should be provided in accordance with BS EN 16005.

When any contact with the user is unacceptable (high risk) because a significant proportion of the users are elderly, infirm, disabled, or young children, additional protective devices should be provided.

There are various types of presence-sensing safety devices which may be fitted in various positions on powered gates. These devices include active infra-red, capacitive, ultrasonic, or photo-electric types.

4.10 Signage

The competent person or professional installation technician should ensure that appropriate signage is affixed to the powered gates at a height of between 1300 mm and 1600 mm on completion of installation.

No entry sign - This sign should be used to indicate to users that entry from the side of approach is prohibited.

Keep clear sign - This sign should be used to instruct and inform users to keep away from the space through which a powered gate swing.

Direction of travel sign - This sign should be used to indicate to users the direction of travel through the gate.

Emergency breakout sign - This sign should be used on doors which have an emergency breakout facility.

Automatic door sign - This sign should be used to indicate that the gate is activated automatically and thus give users advance warning of operation.

Disabled person sign - This sign should be used on gates or gate activation switches that are specifically intended for use by disabled people.

NOTE(s)

1. Responsibility for the continued display and maintenance of such signage lies with the building owner/occupier.

4.11 Additional recommendations

For powered gates on escape routes and emergency exits, if the escape route function can be overridden by a mode selection switch or other devices, these should where practicable be protected by lockable code or key to prevent unauthorized changes.

If powered gates are proposed for installation on an escape route and are intended as means of escape doors, then where practicable the gates should either be capable of manual breakout in the direction of escape or be arranged to fail safely in the open position in the event of mains power failure.

If neither of these recommendations can be achieved, or if they conflict with the advice of the relevant fire and building control authorities, then powered gates might not be appropriate for means of escape.

In such cases, suitable alternative installations should be provided, such as outward opening hinged doors, of an appropriate width and fastened in accordance with BS 9999, provided immediately adjacent to the gates.

NOTE(s)

1. Attention is drawn to the Building Regulations 2010 [2], the Building (Scotland) Regulations 2004 [3], the Building Regulations (Northern Ireland) 2012 [4] and the Building Regulations (Isle of Man) Order 2003 [5], in respect of requirements for means of escape. In particular, Scotland has additional requirements for automatic and revolving door-sets considered for use on escape routes and fire exits. Current technical guidance is given in Scottish Building Standards Technical Handbook, Section 2 (non-domestic edition) [6].

5. Hazards.

Power PADDLE gates have potential hazards in the following five areas:

- during the opening cycle – users can be struck, drawn in, trapped or walk into the door.
- during the closing cycle – users can be struck, drawn in, trapped or walk into the door.
- tripping hazards.
- congestion.
- Other hazards due, for example, to lack of supervision.

Particular attention is drawn to the potentially increased risk that can arise when paddle gates are specified for two-way traffic operation due to the gate leaf opening towards the user. When any contact with the user is unacceptable (high risk) because a significant proportion of the users are elderly, infirm, disabled, or young children, additional protective devices are needed.

5.0 Hazards during the opening cycle.

Provision should be made to deter persons from occupying the swept area of the gates. If a residual risk remains after the appropriate safety measures have been selected, appropriate signage should be fitted to draw the user's attention to the risk, e.g., "Automatic door", "Keep clear", "No entry", "Direction of travel".

NOTE

1. BS EN 16005:2012 covers the following safety provisions:
    - Safety distances.
    - Speed limitation.
    - Protective devices.
    - Guards (finger protection).
    - Barriers.
    - Low energy movement.
    - Mats conforming to BS EN 1760-1.

5.1 Hazards during the closing cycle.

Provision should be made using one of the following means to prevent doors from closing on users during the closing cycle:

a) Speed limitation.
b) Protective devices.
c) Guards (finger protection).
d) Barriers.
e) Low energy movement.
f) Mats conforming to BS EN 1760-1.

6. Installation, Operation, Inspection and Maintenance.

Evolve believes that to achieve a trouble-free installation and provide a long working life of any gate system that the following installation process should be performed.

6.1 Factory Acceptance Test.

A factory acceptance test (F.A.T) is performed by Evolve upon completion of the manufacturing process to prove the equipment has the same specification and functionality indicated in the datasheet and meets the end users operational and functional requirements.

Evolve recommends that the F.A.T is witnessed by the client and/or end user to confirm the equipment meets their requirements before it has been installed.

Evolve provides F.A.T test report upon completion of the test. It is the inspector's responsibility to review the test report and match against acceptance criteria indicated in the end users

operational and functional requirements.

6.2 Installation

The installation and bringing into use powered gates should be carried out by a competent person or professional installation technician. All safety functions and systems should be verified and recorded in the logbook in accordance with BS EN 16005.

NOTE(s)

1. It is advisable that a copy of the verification tests and settings are retained by the competent person or professional installer for future reference.
2. More detailed requirements are given in BS EN 16005:2012, 4.2.

6.3 Pre-Site Commissioning Acceptance Test.

A Pre-site commissioning and acceptance test should be carried out by the installation technician.

6.4 Site Commissioning and Acceptance Test (SCAT)

Site Commissioning and Acceptance Test (SCAT) is used to demonstrate operational readiness of a gate system and is used as part of a quality management system.

Commissioning is a systematic quality process that ensures all components of the gates function according to the documented design and end users operational needs.

As gate systems and operational requirements become increasingly sophisticated and precise, it is becoming increasingly important that the design intent for gate and its control are clearly defined, and their installation and operation verified.

6.5 Handover Documents

BS EN16005:2012 states that proper operating instructions including routine maintenance instructions shall be provided to the final user after installation. The instruction must at least include: -

a. Correct method of operating the gates.
b. Operating conditions: e.g., operating hours per day, automatic/manual operation, indication of the operating mode(s).
c. Explanation of the warning signs of the gate.
d. Information about the safe use of the manual emergency and/or manual release.
e. Range of intended environmental conditions (e.g., temperature, relative humidity, electromagnetic fields and when applicable warning against use in windy conditions).
f. Restrictions on use.
g. Details of safety functions, list, and location of protective devices.
h. Information on prohibited use such as dashing though an open gate.

Routine maintenance instructions must: -

a. Highlight that to ensure safe operation, long term reliability and working efficiency, a powered gate must be regularly maintained according to the manufacture's specification.
b. Detail frequency of maintenance to be carried out.

c. Give simple instruction that can be undertaken by the owner without specific competence.
d. Highlight all maintenance that must be carried out by a professional.
e. Inform the owner about the importance of recording and keeping maintenance records.

6.5.1 Occupier safety checks

To ensure continued safe operation of the powered gate installation, the installation and its environment should be subjected to systematic operational checks as often as is appropriate to the type of installation and its traffic flow, as detailed in the logbook. The test results should be recorded and retained by the building occupier for at least 1 year.

NOTE(s)

The occupier is deemed to be the person responsible for the day-to-day use of the powered gates.

6.6 Maintenance

Powered gate installations should be maintained and inspected by a competent person in accordance with the manufacturer's specification.

NOTE(s)

1. More detailed requirements are given in BS EN 16005:2012, 4.2.

The recommended frequency of inspection given in BS EN 16005 is at least once a year.

7. Risk Assessment Flow Chart

See BS7036-0-2014.

8. Risk reduction process

See BS7036-0-2014.

9. Risk assessment check sheet.

10. References

10.1 Evolve documents

	Maintenance manual
	Programming manual
	Commissioning sheet

10.2 Statutory documents

	Building Regulations
	BS7036

	Machinery Directive

10.3 Abbreviations

The following abbreviations are created:

a. within this document.

b. from published sources.

FFL	Finished Floor Level	a

10.4 Definitions

The following topic specific definitions are created:

a. within this document.

b. from published sources.

Evolve	Evolve Distributor or Reseller for Evolve products.	a
Obstacle	Element creating the obstruction to passage.	a
Safety	Protection of users when using the equipment.	a
manufacturer	In relation to machinery directive: - (a) a person who designs or manufactures that machinery or partly completed machinery: - (i) with a view to its being placed on the market under that person's own name or trademark; or (ii) for that person's own use in an EEA state; or (b) if there is no such person, the person who places that machinery or partly completed machinery on the market or puts it into service.	b
authorised representative	Means a person established in an EEA state who has received a written mandate from the manufacturer to perform, on the manufacturer's behalf, all or part of the obligations and formalities imposed on manufacturers (either as "manufacturers" or "responsible persons") by these Regulations or otherwise in connection with the Directive;	b
responsible person	In relation to machinery directive: - means, in relation to machinery or partly completed machinery— (a) the manufacturer of that machinery or partly completed machinery; or (b) the manufacturer's authorised representative;	b

10.5 Requirements owner

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10.6 History

00	13/09/2014	Convert from SL MOGP	AB
01	20/02/2021	Review and update all standards	AB