



AUTOMATIC GATES



GUIDANCE FOR **COMMERCIAL PREMISES**

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AUTOMATIC GATES

Automated gates provide crucial security and control over who can access the property but they are classed as machinery and must be legally compliant and safe for anyone to use.

Type of gate

Automated gates come in two main configurations:

Swing gates - offer the most cost-effective solution and are the easiest of all automated gates to install. However, a swing gate will be more adversely affected by windy conditions so care needs to be taken to ensure that these load factors are taken into consideration. A swing gate may also not be suitable if the driveway features a gradient.

Sliding gates – are not affected by wind and if installed correctly are very reliable, particularly those with cantilevered systems with no track. Sliding gates also represent the ideal solution for entrances with a gradient. All automated access points should feature a separate independent gate to allow for pedestrian access.

Type of gate operator

A swing gate functions using a ram operator. Ram operators will ultimately offer the most 'powerful' solution to opening and closing the gates but be aware of the crushing hazards associated with this style of gate (especially if the gate is opening against a solid object). Care must be taken to incorporate the correct safety features to avoid an accident. Ram operators are more widely accessible allowing ease of maintenance. Although common practice is to position the ram at about waist height, the most sensible place to site the ram would be at the top of the gate. This is provided the gate is of a sufficient height to prevent anyone's fingers accessing the ram, bearing in mind the need for easy activation of manual release locks.



A swing gate using an underground operator clearly has the advantage of not detracting from the aesthetic charm of the gate, however the gate owner would need to be aware of the additional cost associated with installing this type of operator. In addition, maintenance becomes complex due to the limited access. Crank arm operators are typically suited to moving smaller gates. Special attention needs to be paid to the scissor like mechanism to ensure the gate's safe operation.

A sliding gate is typically operated by a 'rack and pinion' mechanism. Attention should be paid to the support rollers as these must be made in such a way as to reduce a drawing in hazard. Both the support rollers and the motor drive must feature some kind of physical protection around the support posts and physical stock in the open/close position to stop overrun.

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Type of Entry / exit	Control over security	Safety required
Ground loop	1	Maximum
Push button	1	Maximum
Radio remote control	2	Maximum
Digital keypad	2	Maximum
Coded card reader	3	Maximum
Audio/video intercom	3	Maximum
Biometric card reader	4	Maximum
Automatic Number Plate Recognition (ANPR)	4	Maximum
Automatic Number Plate Recognition (ANPR) with secondary security check (e.g biometric)	5	Maximum
Guard house with remote control/intercom	4	Maximum
Guard house with hold to run control	4	Minimum
Guard house with hold to run and airlock	5	Minimum
Time clock	1	Maximum

KEY: 1 – None 2 – Minimal 3 – Fair 4 – Good 5 - excellent
 Minimum – Safety via hold to run
 Maximum – Full safety required

Method of entry and exit

There are a variety of methods, which might be employed to gain access to premises using automated gates. The degree of security provided by the gate will be largely dictated by the method of entry and this in turn will have an impact on the safety requirements of the gate. See the table above.

Safety recommendations

Before an automated gate is installed, a risk assessment must be undertaken which identifies all the potential risks associated with automating a gate. Once this is complete, measures will need to be put in place to eliminate or substantially reduce the likelihood of an automated gate

accident occurring. All automated gates should be installed with at least two different type of safety devices which protect the gate users from the risk of injury or becoming trapped. Gate Safe recommends the use of photocells (or light curtains/laser scanners) and pressure edges on all gates that are automated. Remember, whoever installs these devices must possess the appropriate knowledge and skills to understand WHERE they should be sited to work effectively and mitigate or eliminate the risk. The installer must also have a clear understanding of how to select the correct pressure edges to ensure that they are capable of effectively stopping, then automatically reversing the gate when an object / person is detected.

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Additional factors influencing gate safety

In addition to the general automated operation of the gate and the risks associated with this, there are some physical factors pertaining to the gate itself or the siting of the gate, which may influence its overall safety.

- If the gate is not solid (whether it is a swing or sliding gate), mesh is frequently used, as the infill for the gate. This poses a risk in that people may try and climb the gate or reach through the mesh. If someone reaches through the mesh, the risk of entrapment must be considered.
 - Any automated gates should ensure a maximum gap of 100mm, this includes gaps between the pales and distance from the support post and moving gate leaf, to minimise the risk of whole / part body entrapment.
 - Swing gate hinges must be fitted so that there are no reducing gaps as the gate opens and closes. If there are closing gaps, these should be protected by shrouds or electronically (ie using pressure edges). The failure of a swing gate hinge must not create a situation, which could potentially lead to the gate falling, ie the failure of one component should not jeopardize the safety of the whole gate.
 - Gate posts must be sufficiently strong and correctly bedded into the ground to support the overall gate structure. The foundations into which the gate is installed must be adequate and consistent with the specific ground conditions for the site. For example, a sandy type soil will require a deeper foundation than a stony soil.
- The siting of any control equipment (push button or key switch) should be such that a person cannot put their arm through the gate to start the operation. Control equipment should always be (on both sides of the gate) a minimum of 1500 mm away from the gate or shrouded to prevent activation from the wrong side of the gate.
 - Objects which might obscure the photocells' ability to detect movement will also influence the safety of the gate. Snow, a build-up of leaves or general debris can therefore represent a further potential safety hazard by sending a false message to the gate controller and inhibiting the gate's movement.
 - All automated vehicle access points should feature a separate, independent gate to allow for pedestrian access. Where the pedestrian gate is located next to the vehicle gate, there should be fencing or a guard rail to ensure that pedestrians are kept away from the main gate during its operations.
 - Automated gates should feature a lockable IP rated control cabinet with the correct ingress protection. All visual and / or audible warnings and signage must be in place. The electrical connection to the gate must be via an isolator, installed by a qualified electrician to the current 18th edition of BS7671. UKCA plate should be fixed to cabinet.

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Adapting an existing automated gate

Any existing gate that is being considered for automation must be of suitable construction, this includes the structure and support posts.

Maintenance matters

All automated gates require routine maintenance. The gate should be checked over by a competent installer every six months as a minimum, some gates may require more frequent servicing if they have high usage. Most reputable installers will supply an automated gate with a warranty of a minimum of 12 – ideally 24 – months covering parts and labour.

Automated gate handover

All automated gates are legally required to be CE / UKCA marked to demonstrate that they comply with The Supply of Machinery (Safety) Regulations 2008. In addition, all gates must be supplied with a Declaration of Conformity, issued by the Responsible Person (normally the manufacturer) declaring the product's conformity. A gate that is CE / UKCA marked is not necessarily safe.

Once the gate has been installed the installer should provide a handover pack that will include:

- Location of control cabinet keys and manual release keys
- How to operate the gate automatically and how to put the gate into manual operation
- Key contacts
- Maintenance log book
- Electrical Installation certificate
- Declaration of Conformity

In addition to this, key personnel at the site should also be given a comprehensive briefing on how to use the gate, witness a demonstration on how to place the gate in manual operation and be provided with details of the recommended weekly checks on the safety equipment and gate structure that should be carried out to ensure the gate continues to operate correctly and safely.

Legal Responsibilities

Installer:

- Health and Safety at Work Act 1974
- The Workplace (Health, Safety and Welfare) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998
- Supply of Machinery (Safety) Regulations 2008

Gate Owner:-

- Health and Safety at Work Act 1974
- The Workplace (Health, Safety and Welfare) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998
- Supply of Machinery (Safety) Regulations 2008

Important contacts

Gate Safe www.gate-safe.org / info@gate-safe.org / 01303 840 117

Trading Standards: www.tradingstandards.gov.uk

Health and Safety Executive: www.hse.gov.uk

Glossary of terms

For a full glossary of automated gate related terms, visit the Gate Safe website, www.gate-safe.org.

Gate Safe working together with IOSH

GATE SAFE IS PROUD TO BE SUPPORTED BY THE FOLLOWING ORGANISATIONS



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