

# Automated Gates

Guidance for enforcement bodies

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## About **dhf**

**dhf** represents the key manufacturers and installers of industrial, commercial and domestic garage doors, automated gates, manufacturers of locks, building hardware and architectural ironmongery.

It is a long established and well respected not-for-profit trade association that can trace its roots back to 1897.

**dhf** provides professionals in all sectors of the building industry with a single source for technical expertise, information, knowledge, advice and practical help. **dhf** actively helps its members comply with the latest CE marking legislation and other health & safety and compliance issues.

With the ultimate aim of maintaining and raising quality standards throughout the industry, all **dhf** members must meet the Federation's Quality Assured standards of competence and customer service.

The federation, which continues to grow in size and influence, has six specialist groups looking after the interests of key players involved in:

1. Automated gates & barriers
  2. Domestic garage doors
  3. Locks & building hardware
  4. Industrial doors & rolling shutters
  5. Timber doorsets
  6. Metal doorsets
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## Applicable legislation & standards

There are five pieces of legislation that apply most directly to the supply, installation, repair, maintenance and ownership of automated gates.

1. Supply of Machinery (Safety) Regulations 2008
2. Electricity at Work Regulations 1989
3. Building Regulations  
Building Regulations Part P England and Wales  
Building Standards sections 4.5 & 4.6 in Scotland
4. Workplace Regulations 1992
5. Health and Safety at Work Act 1974

## Supply of Machinery (Safety) Regulations 2008

**Brings the European Machinery Directive 2006/42/EC into UK law**

Applies to any automated gate when it is placed on the market or put into service. Responsibility for compliance lies with the manufacturer of the gate who could be (Clause 3):

- The manufacturer of a complete automated gate or gate kit
- The installer of an automated gate built from components supplied by multiple suppliers
- The installer who applies a drive unit to an existing manual gate

The requirement is that the gate is safe when supplied or put into service and must comply with the Essential Health and Safety Requirements of the regulations. It must be accompanied by a Declaration of Conformity and be CE marked under 2006/42/EC Machinery Directive.

The regulations also have responsibilities for component manufacturers.

Drive units and control panels are considered to be Partly Completed Machines and must be accompanied by a Declaration of Incorporation that declares that the unit is not yet a machine but could form part of a safe machine if properly incorporated. The Declaration of Incorporation should declare which of the Essential Health and Safety Requirements it has fulfilled and which other applicable directives it does conform to. Typically, this will be:

- 2014/30/EU - Electro Magnetic Compatibility Directive and if the unit uses radio transmission devices or receivers:
- 2014/53/EU - Radio Equipment Directive

The unit must be CE marked under these directives but not the Machinery Directive.

Safety devices are also covered by the regulations as a special case and must be CE marked and be accompanied by a Declaration of Conformity in their own right under the Machinery Directive.

The current regulations replaced the 1993 regulations in 2009 with very little impact on the requirements for safety.

The manufacturer is required to retain a technical file for 10 years as evidence of compliance (Clause 7).

The regulations require that the machine should be designed such that hazards are addressed in the following order:

1. Elimination of hazards by Safe design (e.g. constant gap hinges)
2. Application of control measures
3. Issuing of residual hazard warnings

## Electricity at Work Regulations 1989

This UK statutory legislation places a criminal responsibility on an installer to ensure that electrical installation and maintenance work is conducted so as to prevent danger from electric shock, fire, etc both during and on completion of the work. Installation of electrical equipment should only be executed by electrically skilled persons and be safe for users and others who may be affected on completion. This will generally mean making sure that relevant standards are followed e.g. BS 7671 Wiring Regulations for the supply and EN 60204-1 for the rest of the installation.

## Building Regulations

**The regulations apply to electrical works in and about dwellings.**

The regulations require that anyone carrying out electrical installation work in a dwelling must make sure that the work is designed and installed to protect people from fire and electric shocks. The regulations apply to any changes or additions made to an existing installation and include the provision of fixed equipment; an automated garage door is classed as fixed equipment.

Domestic electrical work carried out in England and Wales must comply with Part P of the Building Regulations whereas, in Scotland, it is the Building Standards system. At the present time, Northern Ireland has no equivalent statutory requirement.

The best way to demonstrate compliance in England and Wales is to follow the provisions of Approved Document P which requires that works are executed, tested and certified to comply with BS 7671 as amended.

This will mean that:

- The existing installation must be assessed for suitability before any modification or addition, this will include ensuring that earthing and equipotential bonding is adequate
- New supply wiring must be provided, tested and certified to BS 7671
- Existing supplies that are utilised must be tested before use
- The use of plug and socket does not negate the need for testing or certification
- Fixed wiring should be provided with mechanical protection by means of conduits, trunking or armouring

## Health and Safety at Work Act 1974

Applies to three main groups:

1. Installers, repairers and maintainers of automated gates
2. Landlords and others with responsibilities to tenants of rented property
3. Owners and others with responsibilities at workplaces

The act places general responsibilities on employers, employees and the self-employed in relation to their own safety and the safety of others. The most relevant section in terms of automated gates is section 3 which requires that work is done such that the result will be safe for anyone who is not an employee. Essentially, this means the gate must be safe, hence:

- Installers, maintainers, repairers must ensure gates are safe on completion of works
- Landlords must ensure that gates at rented property are safe
- Workplace owners must ensure that gates at workplaces are safe

## Workplace (Health, Safety and Welfare) Regulations 1992

Applies to owners and others with responsibilities for workplaces. Regulation 18 requires that gates are safe and regulation 5 requires that gates are maintained in a safe condition.

### EN 12453:2001

EN 12453 applies to automated gates intended for vehicular access that might also be within the reach of pedestrians.

It describes the most common risk areas associated with automated gates and acceptable control measures. Since publication in 2001, it has provided the state of the art for automated gate safety and hence what measures can be considered reasonable and practicable to achieve.

#### Common hazards

Crush:	where moving elements cause reducing gaps of less than 500 mm
Impact:	where moving elements cause reducing gaps greater than 500 mm
Shear:	where moving elements produce a guillotine effect
Draw-in:	where moving elements pass but do not present a guillotine effect
Structural:	where structural failure can cause, falling, overturn or derailment of a gate leaf
Electrical:	where electrical faults cause shock or fire

## Control measures

### 1. Hold to run

Hold-to-run means that the safety of the gate is provided by the user, who has to keep constant pressure on a switch. The gate must stop when the switch is released. The switch **MUST** be fixed in a position that ensures that it can only be used in full sight of the gate hazard areas and where the operator is in a place of safety themselves. The switch must also protect against use by untrained persons and hence, in many cases, a key switch will be required. The gate must stop quickly on release of the control. Crush, impact, shear and draw-in hazards can be controlled by hold-to-run.

### 2. Inherent obstacle detection

Inherent obstacle detection means that an intelligent drive unit has been used which can physically sense when the gate encounters an obstruction and cause the gate to retract. Inherent detection can be used to control crush, impact and shear hazards but not draw-in.

### 3. Provision of a "safety edge"

Provision of a safety edge means that there will be a rubber contact strip provided that will switch on contact and cause the gate to retract to prevent injury or damage. A safe edge can be used to control crush, impact, shear and draw-in hazards.

### 4. Light or radar curtaining

Light or radar curtaining technology sets up a complete multi beam curtain that will prevent all possible access to hazardous movement of the gate. This technology may be used to control crush, impact, shear and draw-in hazards.

Please note that light curtains should not be confused with a single photo beam; a single photo beam is an enhancement device required to complement option 2 or 3 when the risk level is heightened; for instance, when it opens directly onto the street or when automatic closing is used.

**Single beam photo cells alone are not an adequate safety measure because they are too easy to defeat by leaning or standing over the beam!**

#### Fencing and guards

Wherever practicable, fencing and guards are preferable to other means because preventing access is safer than limiting harm. Guards and fencing must be rigid and durable, removable only by means of tool or key, prevent reaching through to danger and discourage climbing.

#### Structural hazards

Falling over and derailment must be prevented in normal use and, in the event of foreseeable misuse, failure of any one single component should not cause a hazardous situation. In order to achieve this, either the component in question must be so strong that it will not fail (3.5 x normal load withstand) or that a secondary element will catch or prevent further hazards.

## ANNEX A

# Supply of Machinery (Safety) Regulations 2008

## Essential Health and Safety Requirements

The manufacturer of the automated gate must ensure that the gate complies with the applicable Essential Health and Safety Requirements listed in Annex 1 of the regulations by means of a detailed and documented risk assessment. The risk assessment should declare which EHSR apply and what control measures have been applied to achieve this.

## Partly Completed Machinery

SM(S)R 2008 caters for the use of Partly Completed Machinery. A drive unit for an automated gate is a PCM and should be accompanied by a Declaration of Incorporation document and detailed installation instructions from the manufacturer of the drive. The DoI should declare that the drive, when properly installed to an appropriate gate, could create a safe and SMR compliant machine.

**NOTE:** there is no requirement for a DoI where the manufacturer manufactures both the gate and the drive as a complete unit.

## Safety devices

SM(S)R 2008 also brings responsibilities for the manufacturers of safety devices. A safety device is a safety component that could be removed and the door could still function, albeit with reduced safety. A safety device must be supplied with a Declaration of Conformity with the Machinery Directive.

## Instructions

The manufacturer of a complete gate system should provide detailed and precise installation, maintenance and user instructions. The manufacturer of a drive unit for installation on an existing gate should provide detailed and precise installation instructions for the drive unit. The installer of a drive unit to an existing gate should provide user and maintenance instructions. A maintenance log should be provided to the user to record maintenance completed.

## Technical file

The manufacturer (of the final automated gate) should retain all relevant documentation applicable to the gate in a technical file that forms an evidence package for the compliance of the gate and should be retained for at least 10 years. The technical file should include at least:

- Design drawing and specification for the gate
- Design risk assessment document
- List of applicable EHSR and applied control measures
- Applicable Declaration of Incorporation document for the drive unit(s)

- Applicable Declaration of Conformity for safety devices used
- Copy of the Declaration of Conformity for the gate
- Copies of installation and user instructions
- Copy of the maintenance instructions and maintenance log

Investigating authorities can demand sight of a technical file within a 24 hour notice period.

## Manufacturer's Declaration of Incorporation

### for a Partly Completed Machine

The declaration of incorporation must contain the following particulars:

1. Manufacturer: **XWZ Drive Company, Anytown, AN3 5XP**
2. Responsible person: **Ian Somebody - Products Director**
3. Product: **Automated Gate Operator and Control Panel**
4. The company named above declares under their own authority that the product named above conforms to the following Essential Health and Safety Requirements of 2006/42/EC Machinery directive **eg 1.2, 1.4.3, 1.5.1, 1.5.4, 1.7.4 (as applicable)**
5. The company also declares that a technical file exists in conformity with Annex viii of 2006/42/EC
6. The company declares that the product also complies with:  
**2014/30/EU - Electro Magnetic Compatibility Directive**  
**2014/53/EU - Radio Equipment Directive (where applicable)**
7. The company agrees to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery by post
8. The product must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of 2006/42/EC
9. The place and date of the declaration: **Anytown 12 February 2011**
10. Signature of responsible person: **I A M Somebody**

## Declaration of Conformity for an automated gate

The Declaration of Conformity is a document that certifies conformity with the Machinery Directive and supports the CE marking and must contain the following details:

1. Manufacturer: **ABC Installations, Industrial Estate, Newtown NT1 4BX**
2. Responsible person: **A B Cotton - director**
3. Serial number: **Automatic powered gate AB NT1 4BX**
4. The company above declares under its own authority that the door above is fully in compliance with:  
**2006/42/EC - Machinery Directive**
5. The company additionally declares that the door is in compliance with the following directives:  
**2014/30/EU - Electro Magnetic Compatibility Directive**  
**2014/53/EU - Radio Equipment Directive (where applicable)**
6. Place of declaration: **ABC Installations, Industrial Estate, NT1 4BX**
7. Date: **11 December 2104**
8. Signature: **A B Cotton**

## Manufacturer's Declaration of Conformity for a safety device

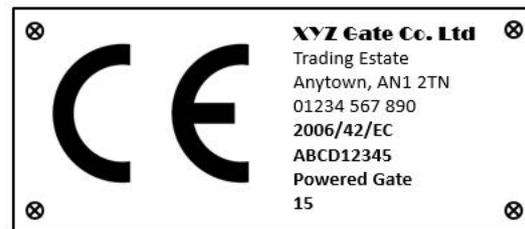
The Declaration of Conformity is a document that certifies conformity with the Machinery Directive and supports the CE marking and must contain the following details:

1. The business name, address of the device manufacture
2. A unique identification for the device
3. The name and address of the responsible person
4. A sentence declaring that the device complies with relevant parts  
**2006/42/EC Machinery Directive**
5. A sentence declaring that the device complies with other relevant directives:  
**2014/30/EU - Electro Magnetic Compatibility Directive**  
**2014/53/EU - Radio Equipment Directive (where applicable)**
6. A reference to any harmonised standards used eg:  
**EN 12978.**
7. A reference to any other standards used eg:  
**EN 61000-6-1**  
**EN 61000-6-2**
8. The place and date of declaration
9. The signature of the responsible person

## CE mark

Should also be mounted where it will be visible, be indelible and contain the following details:

- Name and address of the manufacturer
- 2006/42/EC
- Serial number or designation
- Year of manufacture



## Useful links

### Supply of Machinery (Safety) Regulations 2008

<http://www.legislation.gov.uk/ukxi/2008/1597/contents/made>

<http://www.hse.gov.uk/work-equipment-machinery/new-machinery.htm>

<http://www.hse.gov.uk/work-equipment-machinery/machinery-directive-essential-requirements.htm>

<http://www.hse.gov.uk/work-equipment-machinery/declaration-conformity.htm>

<http://www.hse.gov.uk/work-equipment-machinery/faq-powered-gates.htm>

### Building Regulations Part P

<http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partp>

## dhf

<http://www.dhfonline.org.uk>





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