



**Door and Shutter
Manufacturers' Association**

Good Practice Guide

For purchasers and specifiers
of domestic garage doors
and garage door operators

This document aims to provide authorities/building control bodies and specifiers with guidance as to best practice in the design, manufacture and installation of garage doors in order to satisfy current UK regulations and other requirements

INTRODUCTION

This publication is designed to give guidance on those issues which need to be considered when selecting, specifying and using domestic garage doors and power operated domestic garage doors. It aims to give the reader a concise summary of the relevant European product standards for domestic garage doors, and the way in which these safeguard the health and safety of users of these products. These health and safety requirements are prescribed by European Directives, which have been transformed into UK national regulations to which manufacturers must conform.

After taking into account the information provided in this document, readers will then be in a position to recognise genuine conformity to these standards, and to seek further specialist advice where necessary.

DSMA members are committed to providing installers, specifiers and users of domestic garage doors, both manually and power operated, with any information required to ensure the safe use of our products.

European directives

The main European directives affecting safety of garage doors are the Construction Products Directive and the Machinery Directive (the latter affecting only powered doors). These make it an offence to supply products which do not comply with the health and safety requirements laid down in the directives.

In the case of the Machinery Directive, products complying with it must already carry the CE mark. In addition, CE marking of manual doors will shortly become possible under the Construction Products Directive.

As part of the process of complying with these directives (both of which are now law in the UK), the standards listed below enable manufacturers and suppliers to demonstrate that their products meet these directives.

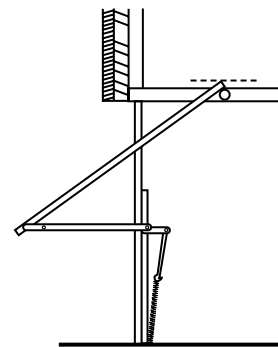
BS EN 13241 Part 1 Industrial, commercial and garage doors and gates

The principle European standard relevant to domestic garage doors identifies all the critical health and safety considerations within the design and manufacture of the product. These are expanded in more detail in a series of supporting standards. It allows manufacturers of those products which conform to those standards to identify clearly to users of that product that this is the case. This gives resellers, users and consumers the necessary reassurance that they are purchasing a safe and reliable product.

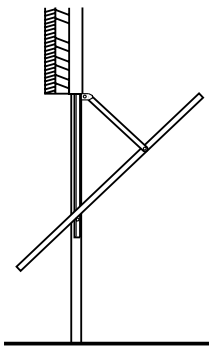
Whilst DSMA members are committed to ensure that their products conform in full to the product standard (BS EN 13241-1), only a specific number of these health and safety aspects have been identified by the European Commission as essential characteristics to allow CE marking under the Construction Products Directive. These are marked with an asterisk within this document.

In addition, for power-operated doors, there are some health and safety aspects which are mandated under the Machinery Directive, which are also marked in this document with an asterisk.

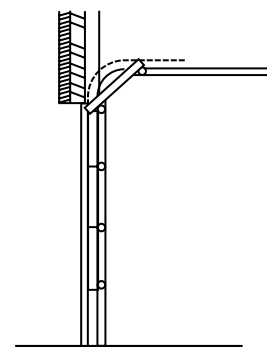
The relevant supporting standards with respect to the safety of domestic garage doors are as follows:



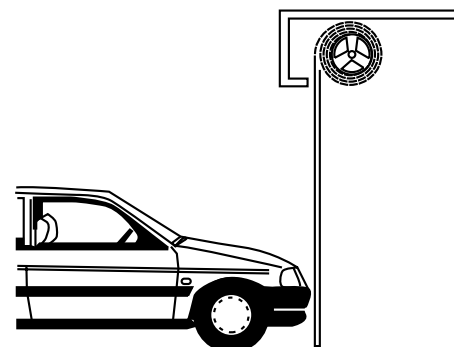
One piece retractable door



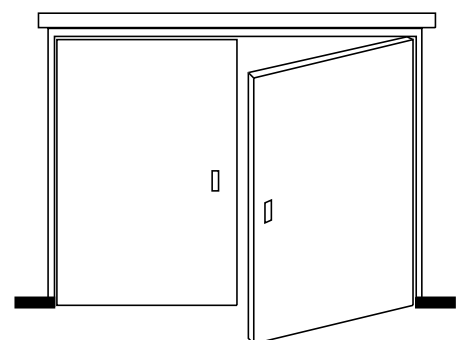
One piece canopy door



Sectional overhead door



Rolling shutter door



Double-leaf hinged swing door

BS EN 12604

Garage doors - mechanical aspects - requirements

Doors should be designed and constructed so that they are capable of being installed, maintained, repaired and used in a safe manner. In particular, a door should not cause serious injury or damage due to:

- unintentional or uncontrolled movements of the door leaf
- crushing in the normal movement of the door leaf
- excessive force being required for manual operation
- lack of proper operating instructions



Ensuring controlled movement of door leaf

Specifically, the door design must ensure that, under normal use:

- vertically-operating doors are balanced in such a way that they can be stopped in any position in their movement
- no part of the door or fixings should become permanently deformed, so risking failure of the door in use
- * • falling down, collapse or derailment of the door is prevented
- * • in addition, safeguards should be in place to prevent the door from dropping and closing in an unsafe manner should a balancing component, such as a cable or spring, fail in use
- * • if such a component fails, unless the door drops with a force of no more than 200N, the door must be brought to rest by way of an anti-drop device, after a downward drop of no more than 300mm, and held safely in that position until remedial action can be taken by a trained garage door specialist



Protecting against crushing or entanglement

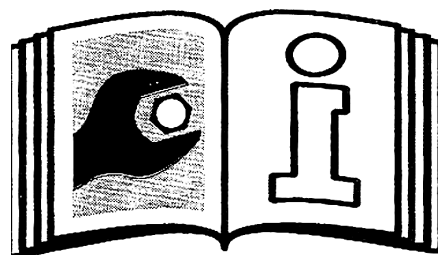
The door must be designed to prevent the risk of users from, for example, trapping fingers or entangling clothing in the door's mechanism. Any potential risks should have been:

- eliminated through design of adequate clearances, or
- protected by physical guarding, or where neither of these is possible
- identified and marked by clear warning signs.

Forces for manual operation

The door shall be designed in such a way that the user can manually open or close the door without using excessive force (no greater than 150N), although a greater force may be required for the start of the movement and for final closure.

Provision of operating instructions



The manufacturer must ensure that all technical information required to ensure that the door may be installed and used safely is available to all in the supply chain. This should include, for example:

- clear technical information on structural opening sizes and dimensions
- comprehensive installation instructions
- guidance on the position and types of fixings
- clear operating instructions for the user of the installed product
- clear maintenance instructions for the user of the installed product

BS EN 12453 Power operated doors & door operators (drive units)

Included in this supporting standard are all the relevant safety requirements for power operated domestic garage doors. This refers to both integrated power-operated units, or doors operated using a separate drive unit or garage door operator.

Essentially, this standard identifies those risks which may exist on power operated garage doors and compels the manufacturer(s) to have designed into the product the necessary safeguards against those risks.

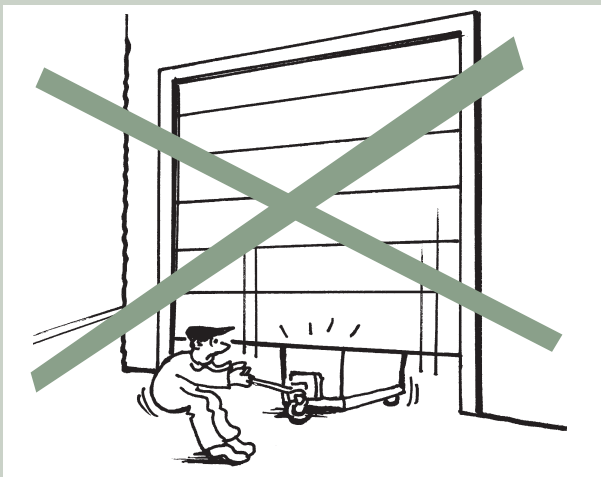
These include:

Electrical source

Any risk of hazard, such as electrical contact or fire from overheating from the electrical source powering or controlling the drive unit, must be avoided or safeguarded.

Forces exerted by the power operated door

- * The design of the garage drive unit should be such that the forces exerted by the leading edge of the door during power operation are kept to a safe level for the users.



The power-operated door must incorporate an entrapment protection system which will either prevent the door from coming in contact with an obstacle or which, when coming in contact with an obstacle, will keep the forces at the leading edge below the maximum acceptable levels, as defined in BS EN 60335-2-95.

NOTE : Compliance with BS EN 60335-2-95 is only relevant to non-automatic (e.g. not operated by timer-control) power-operated, vertically moving domestic garage doors for use on single households, which do not open onto public access areas. Power-operated doors for use with automatic controls or in multiple-use locations (such as flats or offices) must comply with the more stringent force-limitation requirements of BS EN 12453. BS EN 12453 should also be applied to all doors where the use of BS EN 60335-2-95 is not an available option.

Adjustment of drive forces should not be possible unintentionally and without the use of a tool.

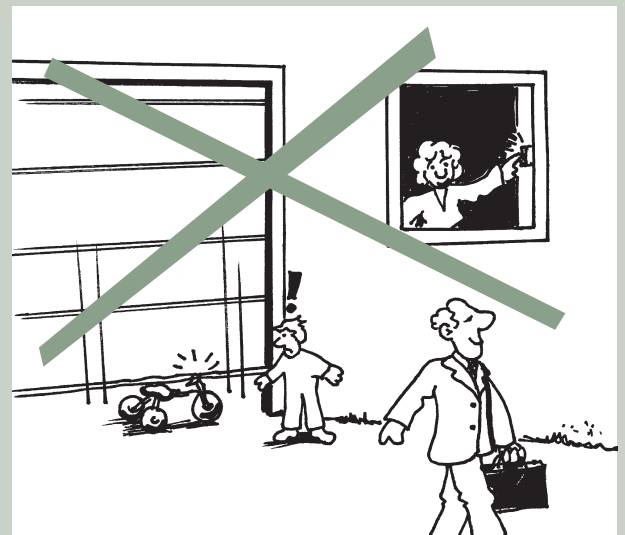
Lifting people



- * Vertically-moving power operated garage doors must not be able to lift an adult or a child in a dangerous way. The power-operated garage door should not be able to open when burdened with an additional weight of more than 20kg.

Controls to activate the power operated door

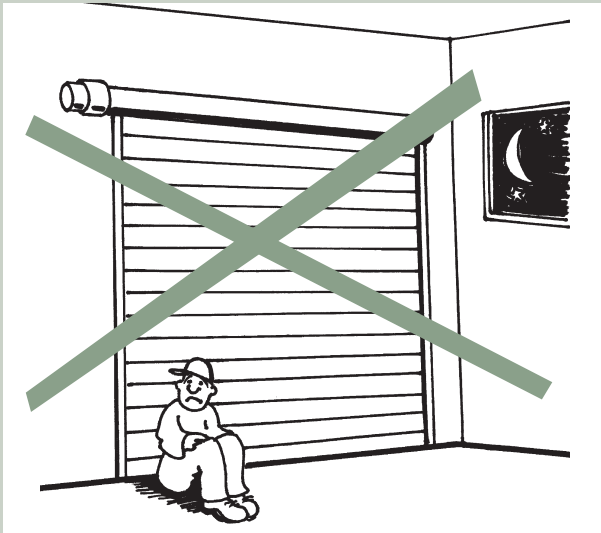
- * Garage door drive units may only be activated by use of a manual control, such as a hand transmitter, push button or entry keypad. The design of these controls should be such that they cannot be operated in dangerous situations, such as when the door is not in view of the user.



To these ends, manufacturers must state clearly in their instructions that any fixed control (which has no security feature, such as key or code) has to be installed within sight of the door and at a height of no less than 1.5m.

In either the opening or closing cycle of the door, the user must be able to stop the movement of the door by using a manual control.

Trapping

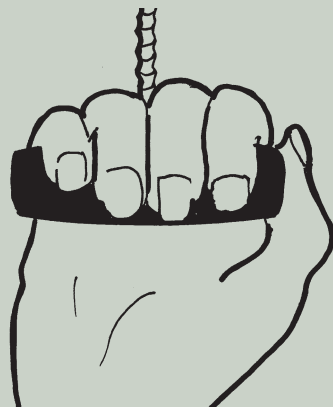


Individuals should not be able to be trapped in areas where a power operated door is the only means of exit, in the event of mechanical failure of the garage door operator, or of loss of power supply.

The garage door drive units should therefore be fitted with a release mechanism which will allow the door to be operated manually to allow exit.

Changeover to manual release

All garage door drive units must incorporate a manual release so that the door may be operated manually. The manual release should be easily activated without requiring excessive force. Clear instructions must be available on the drive unit on how to use the manual release.



Warnings should be given to the user that the activation of manual release may lead to an uncontrolled movement of the door in case any balancing components of the door have weakened or broken.

Activation of the manual release must not give rise to unexpected operation of the garage door drive unit.

Over-running

The door should stop automatically at its terminal end positions and remain in a safe state. Similarly, the door movement must stop and the drive unit switch off once the stop command has been given.

Conformance to standards

A manufacturer of either a garage door or drive unit, once they have satisfied the requirements of the relevant standards, are able to demonstrate to specifiers and users of their products by declaring that those standards have been met.

In the case of manual domestic garage doors, the manufacturer will:

- provide a Declaration of Conformity with the mandated elements of the Construction Products Directive with every door
- apply a CE mark to every door (applicable from January 2004)
- where the door is suitable for power-operation, provide a Declaration of Incorporation in accordance with the Machinery Directive

For manufacturers of garage door drive units supplied separately to the garage door, they will provide with every unit:

- a Declaration of Compliance with Low Voltage (LV) and Electro-Magnetic Compatibility Directives (EMCD)
- a CE mark applied to the product for LV and EMCD
- a Declaration of Incorporation in accordance with the Machinery Directive

Manufacturers of power-operated doors with integral drive units will provide with every door:

- a Declaration of Conformity with the standards, including the mandated elements of the Construction Products Directive
- a Declaration of Compliance with Low Voltage and Electro-Magnetic Compatibility Directives
- a Declaration of Incorporation in accordance with the Machinery Directive.

Installation of power operated doors

It is the responsibility of the installer of the power-operated garage door to ensure that the complete installed product meets the requirements of the Machinery Directive. He does this through the presentation to the user of a signed Declaration of Conformity with the Machinery Directive for the installation, and the application of a CE mark to the installed product.

In the case of a power-operated door with integral drive unit, installation must be carried out in accordance with the manufacturer's installation instructions prior to the completion of a Declaration of Conformity.

Where the power-operated door is created from the combination of a manual garage door and a separate garage door operator, prior to installation the installer must ensure that the Declarations of Incorporation for both elements are compatible. The installation has then to be carried out in accordance with the installation instructions for both products before a Declaration of Conformity can be issued by the installer, and a CE mark applied to the installed power-operated door.

Once installation is complete in accordance with the manufacturers' instructions, the applied CE mark signifies the installation's compliance with the Machinery Directive, the Construction Products Directive, the Low Voltage Directive and the Electro-Magnetic Compatibility Directive.

Any installation of a power-operated door which is not CE-marked has not complied with the legally binding requirement of the UK regulations specifying these health and safety directives.

The DSMA would recommend that garage doors and garage door operators are always installed by trained professionals who can demonstrate knowledge and understanding of their responsibilities under the Machinery Directive.



Door & Shutter Manufacturers' Association

CHECKLIST FOR CONFORMANCE

- Does the garage door conform to the product standard ?
- Is it designed not to fall down or collapse in the event of cable or spring failure ?
- Can it be operated without using excessive force ?
- Do I have proper operating instructions ?
- Is the door CE-marked? (only mandatory from January 2005)
- Does the power operated door conform to the product standard ?
- Is my door operator CE-marked in conformance to EN 60335-2-95 ?
- Are the forces exerted by the power-operated door safe for users, and is there a safety mechanism for when the door comes in contact with an obstacle ?
- Has the power-operated door been safeguarded against lifting people ?
- Does the operator have an accessible release mechanism, and clear instructions on how to use it ?
- Does the installation of my power-operated door conform to the Machinery Directive ?
- Has my installer provided me with a Declaration of Conformity for the installed product, and CE-marked the power-operated door ?

The Door and Shutter Manufacturers' Association (DSMA) is the only trade association for the door and shutter industry. It looks after the interests of more than 120 of Britain's leading industrial, commercial and garage door and shutter suppliers and manufacturers.

It upholds members' standards of technical competence, professional integrity, quality and service. This gives specifiers and end users the confidence to choose products and services from DSMA members rather than from non-members.

The DSMA is taking a lead in Europe to harmonise standards covering safety, security and fire protection and is represented on several standard-setting bodies.



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