

# NOTES FOR THE SAFE USE OF RAPID ROLL DOORS

## Applicable Regulations

Supply of Machinery (Safety) Regulations 1992 and amendment 1994  
Construction Products Regulations 1991

## Relevant Standards

BSEN 13241-1 – Industrial, commercial and garage doors – product standard  
BSEN 12604 – Industrial, commercial and garage doors – mechanical aspects  
BSEN 12453 – Safety in use of power operated doors  
BSEN 12635 – Installation and safe use  
BSEN 12978 – Safety devices for power operated doors and gates – Requirements and test methods  
EN 60335-1: for drive units and power supplies  
EN 60335-2-103 – Safety of household and similar electrical appliances-2-103: Particular requirements for drives for gates, doors and windows  
EN 60204-1: for electrical equipment

## Interpretation of the Requirements

The standards listed above identify the requirements and relevant test methods where applicable. CE marking under the Machinery Directive is a legal requirement and is based upon a manufacturer carrying out a risk assessment and issuing a declaration of incorporation or conformity. CE marking under the CPD (Construction Products Directive) involves some Initial Type Tests (ITT) that have to be carried out by a third party test authority who have been notified by a European member state as being competent for that task.

If a product is CE marked, it must comply with a national standard applicable to the product.

## Safety aspects related to impact and crushing hazards

Injuries to persons generated by impact of the moving door leaf, for doors not operated under the hold to run control mode, shall be avoided by:

- limiting the dynamic force developed by the door leaf, or
- ensuring by electro-sensitive protective equipment or by guards that in no circumstances can a person be touched by the moving door leaf.

Doors with a closing speed in excess of 0,5 m/s up to a height of 2,5 m should be equipped with a device detecting moving persons approaching the door when they are at least 0,9 m away from it (stand-off safety devices).

NOTE: Vehicles moving at a too high speed compared with the speed and position of the door leaf can still come in contact with the moving door, thus creating damages to the door itself. Though it is foreseeable that this may occur with any automatically controlled door, such a situation cannot be avoided nor safeguarded by documented solutions. Depending on site conditions, the following may be helpful, in particular for automatic and remote controlled doors:

- a) to provide adequate lighting of the area where the door is installed in order to prevent it from moving in the dark;
- b) to install signs in order to inform the users about the automatic operation;
- c) to give advanced warning signals in order to inform when the door is moving or going to move, like flashing lights with or without pre-flashing;
- d) to install traffic lights in order to regulate vehicular traffic whenever this is needed;
- e) to incorporate in the door construction a break-away function in order to decrease the level of damage to the door which could result from an impact;
- f) to install additional devices to provide an advanced detection of vehicles thus giving time for the door leaf to reverse.

Because these warnings or functions are not increasing the safety of the door but only decreasing the risk of occurrence of some foreseeable possibly dangerous situations due to external factors, they are not required as safety measures for the door itself. Should they be required by the door user or be required by specific national regulations, they should not interfere with the other safety requirements.

It is recommended that manufacturers, suppliers and installers should advise that for rapid roll doors which could impose unsafe impact forces and which are permitted to be used by pedestrians, these ‘stand-off’ safety devices should be provided. They should also ensure that quotations to potential customers make clear that:

- 1) this type of door is not normally designed to be used by pedestrians; and
- 2) where this cannot be avoided, additional safety will be necessary as recommended above.
- 3) If doors are not permitted to be used by pedestrians, the doorway should be clearly marked “Danger – door not for pedestrian use” and measures put in place to enforce observance of the instruction

## Minimum level of safeguarding

The level of safeguarding at the main closing edge of a power operated door shall be related to the expected level of hazard.

These minimum levels may be increased by the addition of extra safety features in order to meet either specific national regulations or particular site risk analysis.

The levels are based on three different types of use but for these products it is:

- Type 1: A limited group of persons are trained to operate the door and the door is out of public area
- Type 2: A limited group of persons are trained to operate the door and the door is located in a public area;
- Type 3: Any person is free to operate the door and the door is in contact with the general public.

*Note: Persons can be considered as “trained” if the premises owner has allowed them to use the door and has advised them how to use the door.*

## General requirements

The minimum levels of safeguarding of the main edge related to the way the door is operated and to the type of users, are given below according to the following abbreviations:

- A: Hold to run control
- B: Hold to run control with key switch or similar
- C: Limitation of forces, either by force limiting devices or by safeguarding devices

Safety devices must be monitored and conform to BSEN 12978 and EN 954-1 and must still provide protection in the case of single component failure in the protective systems, eg damage to the safety edge or spiral cable, or a defect in the control system

- D: A means for detection of presence of a person or an obstacle standing on the floor at one side of the door

When combining two safeguarding systems, eg C and D, the D means periodic checks of the D device at intervals which may not exceed six months shall be specified in the maintenance instructions of the door

A D-device on both sides is needed when the thickness of the door leaf is greater than 150 mm

- E: A means for detection of presence which is designed and installed in a way that in no circumstances can a person be touched by the moving door leaf

Type of door activation	Types of use		
	Trained users (no public) Type 1	Trained users (public) Type 2	Untrained users Type 3
Hold to run control	A	B	
Impulse activation in sight of the door	C or E	C or E	C and D, or E
Impulse activation out of sight of the door	C or E	C and D, or E	C and D, or E
Automatic control	C and D, or E	C and D, or E	C and D, or E

*NOTE 1 : In cases where contact with the moving door leaf does not create any risks of injury or damage, the D type means may not be necessary*

*NOTE 2 : D type means which are intended to detect vehicles positioned in the door way are recommended to be installed in a height of 500 to 1000 mm above floor level*

## **Guidance to compliance**

By CE marking products under the CPR, it is assumed that all the risks from hazards connected with doors are covered. This is the recommended method as being the only generally accepted way for products to prove compliance.

If the route chosen for compliance is by risk assessment under the Machinery Directive and the risk assessment does not fit with the requirements in BSEN 13241-1 then the risk assessment would be considered to be inadequate. It is recommended therefore that DHF members should follow the standard BSEN 12453 when carrying out any risk assessment under the Machinery Directive.

It should be remembered that although the test for operating forces is carried out by a Notified Test Laboratory on a door, all safety devices and controls must comply with the requirements in BSEN 13241-1. Door manufacturers should ensure that Declarations of Incorporation for these controls and safety devices are included in their Technical Construction File.