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Industriële, bedrijfs- en garagedeuren en
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aangedreven deuren - Eisen

Publicatie uitsluitend voor commentaar

Industrial, commercial and garage doors and gates - Safety in use of
power operated doors - Requirements

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Als Europees normontwerp is gepubliceerd: prEN 12453:2014, IDT

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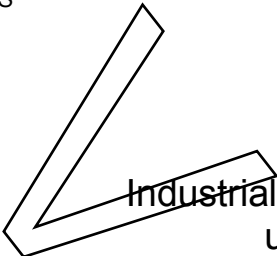
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Will supersede EN 12445:2000, EN 12453:2000

English Version



Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements

Portes et portails industriels, commerciaux et de garage - Sécurité d'utilisation des portes motorisées - Exigences

Tore - Nutzungssicherheit kraftbetätigter Tore - Anforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

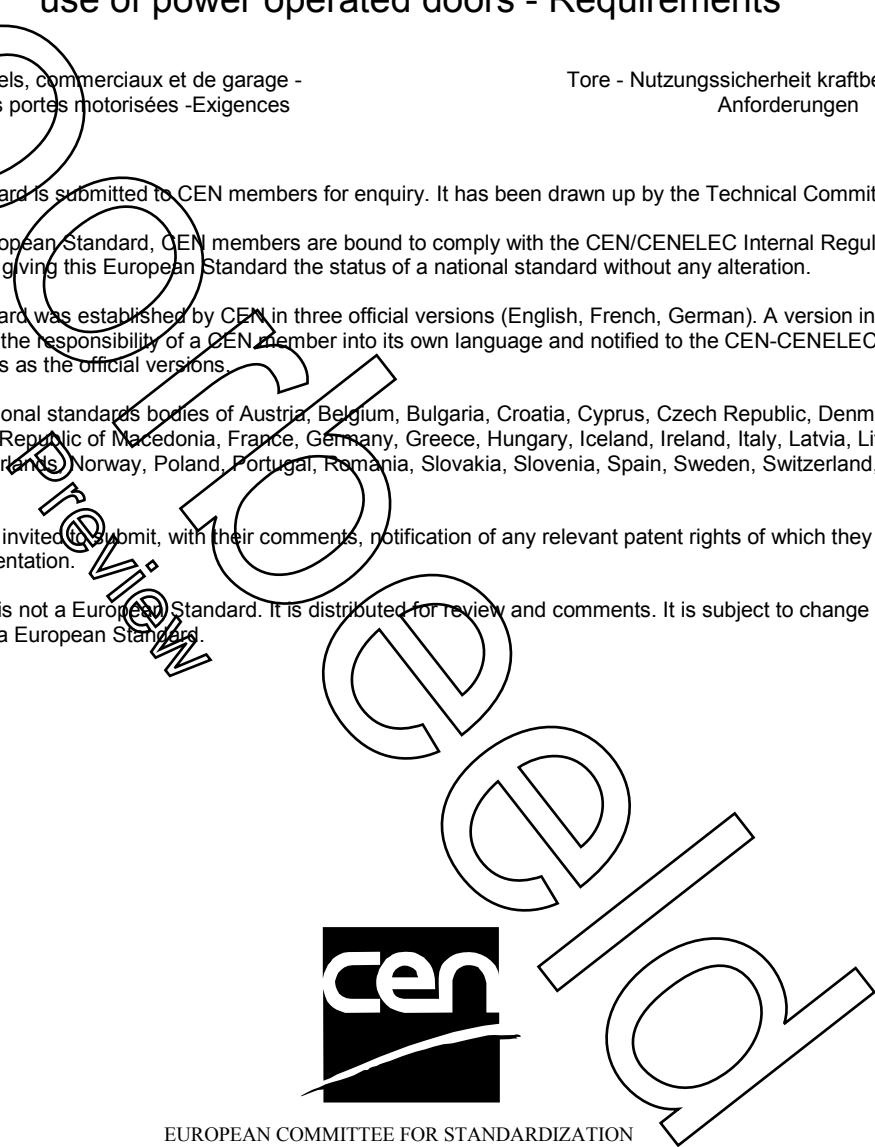
If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Prohibited
 Preview

Foreword

This document (prEN 12453:2014) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12453:2000, EN 12445:2000.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

Compared with EN 12453:2000 and EN 12445:2000, the following changes have been made:

- a) EN 12453 has been revised to be harmonised under Machinery Directive 2006/42/EC;
- b) EN 12453 has been merged with EN 12445; as EN 12445:2000 will be withdrawn;
- c) aligning structure of EN 12453 according to MD templates;
- d) revision of the list of significant hazards (Clause 4);
- e) revision of safety and/or protective measures (Clause 5);
- f) revision of the verification of the safety requirements (Clause 6);
- g) editorial revision of Annex A (Limitation of forces);
- h) introducing Annex C (Examples of mechanical protection and safety distances);
- i) introducing Annex D (Force measuring method);
- j) introducing Annex E (Testing method for presence detection);
- k) introducing Annex ZA for harmonisation of EN 12453 under MD.

Introduction

This document is a type C document as stated in EN 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C document are different from those which are stated in type A or B documents, the provisions of this type C document take precedence over the provisions of the other documents, for machines that have been designed and built according to the provisions of this type C document.

This document has been prepared to meet the needs of manufacturers, users and safety enforcement authorities, with the primary purpose of providing design and performance for safety in use of power operated industrial, commercial and garage doors and gates used by vehicular and pedestrian traffic.

With the aim of clarifying the intention of this document and avoiding doubts when reading it, it was assumed when producing it that clarification occurred between all involved parties (manufacturer, professional installer, user etc.) concerning:

- components to be kept in good repair or working order
- intended use, the users and place of use of the door
- all parts of door installations, whether fixed or moving, including the fixing and assembling means, to be in all respects of good construction, suitable material, adequate strength and free from obvious defects for their intended working life
- the design to be in accordance with European technical rules taking into account the most unfavourable forces occurring during the operation and all failure modes.

Mechanical aspects of the doors considered in this standard are covered by EN 12604.

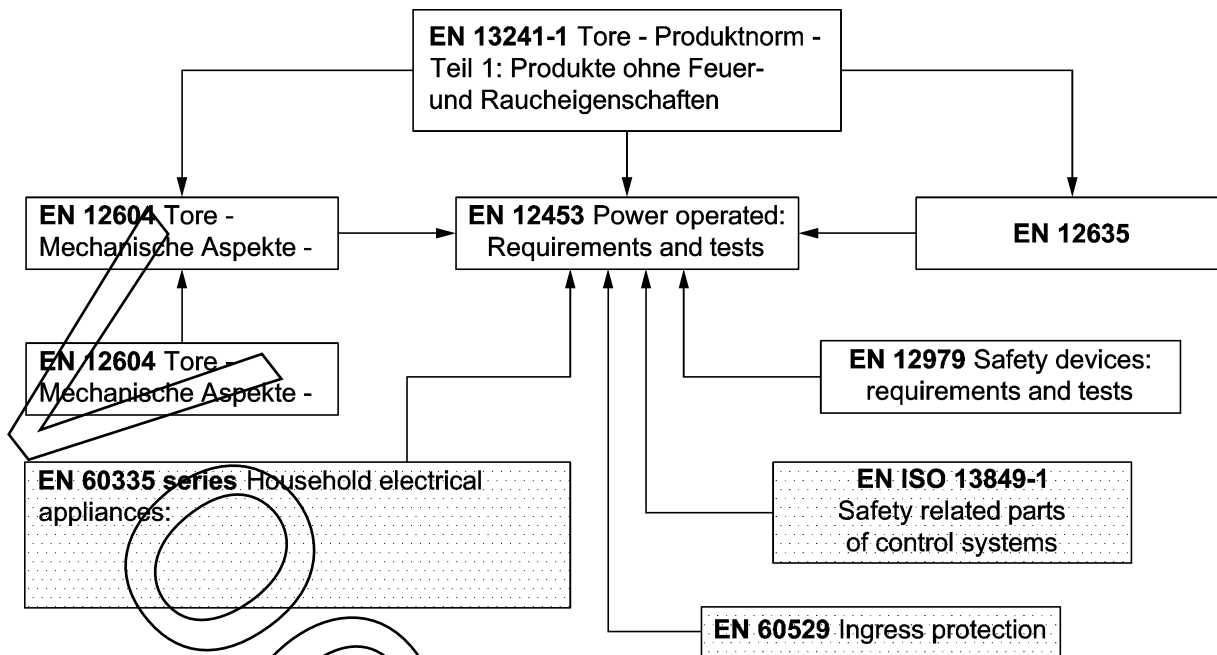


Figure 1 — Relationships between key standards for power operated doors, gates and barriers

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1 Scope

This European Standard specifies requirements and test methods for the safety in use of any type of power operated door, gate and barrier including their components, intended for installation in areas in the reach of persons, and for which the main intended uses are giving safe access for goods and vehicles accompanied or driven by persons in industrial, commercial or residential premises.

This European Standard also covers power operated vertically moving commercial doors used in retail premises which are mainly provided for the access of persons rather than vehicles or goods

This European Standard deals with all significant hazards, hazardous situations and events relevant to the power operation of doors, gates and barriers, as identified in Annex C.

European Standard does not apply to

- lock gates and dock gates;
- doors on lifts;
- doors on vehicles;
- armoured doors;
- doors mainly for the retention of animals;
- theatre textile curtains;
- horizontally moving power operated doorsets intended for pedestrian use;
- doors outside the reach of people (such as crane gantry fences);
- railway barriers;
- barriers used solely for vehicles (e.g. barriers on motorway, public car parks).

Also this European Standard does not apply to power operated doors, gates and barriers which are manufactured before the date of publication of this European Standard.

Requirements for specific characteristics (such as fire resistance, blast-resistance, acoustic, escape route function, burglar resistance or thermal insulation, etc.) which certain doors are required to comply with are not specified in this document. If the specifications of a standard on the special characteristics of such doors are in conflict with the requirements of this European Standard, that standard has preference.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 294, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 418, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 12433-1, *Industrial, commercial and garage doors and gates — Terminology — Part 1: Types of doors*

EN 12433-2, *Industrial, commercial and garage doors and gates — Terminology — Part 2: Parts of doors*

prEN 12604:2005, *Industrial, commercial and garage doors and gates — Mechanical aspects — Requirements*

EN 12978:2003 + A1:2009, *Industrial, commercial and garage doors and gates — Safety devices — Requirements and test methods*

EN 60335-1:2010, *Safety of household and similar electrical appliances — Part 1: General requirements (IEC 60335-1:2009, modified)*

EN 60335-2-95:2001, *Safety of household and similar electrical appliances — Part 2-95: Particular requirements for drives for vertically moving garage doors for residential use (IEC 60335-2-95:1998, modified)*

EN 60335-2-103:2003, *Household and similar electrical appliances — Safety — Part 2-103: Particular requirements for drives for gates, doors and windows (IEC 60335-2-103:2002)*

EN 61032, *Protection of persons and equipment by enclosures — Probes for verification (IEC 61032:1997)*

EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100)*

EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles of design (ISO 13849-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1, EN 12433-1, EN 12433-2 and EN 12978:2003 and the following apply.

Whenever the term “door” is used in this document, it shall be deemed to cover the full scope of types and variances of doors, gates and barriers defined in EN 12433-1.

3.1

domestic garage door

door used on a domestic garage which is provided for one single household only and where the door does not protrude into a public area

3.2

drive unit

power operated mechanism, including controls, for moving, positioning and retaining the door leaf.

[SOURCE: EN 12433-2:1999, definition 6.1]

Note 1 to entry: Drive units include controls to move the door leaf, except entrapment protection systems.

3.3

drive

motor and other components that control the movement of the driven part

prEN 12453:2014 (E)

Note 1 to entry: Examples of components are gears, controls, brakes, components for power transmission from the drive to the driven part (e.g. trolleys, rails, levers, etc.), entrapment protection systems.

Note 2 to entry: The driven part is the part of a gate, door or barrier that is intended to be moved by the drive.

3.4**opening gap**

distance between the main closing edge and the opposing closing edge

3.5**non-automatic operated door**

door that operates with intentional activation by the user in both directions

4 List of significant hazards**4.1 General**

This Clause contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this document, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

A hazardous point is considered to exist up to a height of 2,5 m above the floor or any other permanent access level.

As the main function of a door is to open up or close off an opening, the actual movement of the door can produce hazardous situations for persons, goods and vehicles in the vicinity which by nature cannot all be avoided by design.

When door and equipment are in working order and either used correctly (i.e. as specified by the manufacturer in the instruction manual) or misused in a foreseeable manner, the significant hazards which can be generated by a power operated door are listed in Annex A and detailed hereinafter.

An abnormal state of the door used correctly can lead to an unintended movement of the door leaf which can create a hazardous situation.

4.1.1 Level of risk

The use and the location of the door and the type of door control may influence the level of risk created by power operated doors.

The level of risk depends upon:

- the intended user is public, or infirm, or elderly, or children;
- there is no possibility to instruct, train or supervise the door users;
- access is not restricted to persons who are the only ones allowed to operate the door (authorized persons);
- a high number of persons may come in contact with the door;
- degree of automation is high;
- door opens directly onto public access areas.

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