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Date: 05 April 2022

Origin: European

Latest date for receipt of comments: 10 May 2022

Project No. 2020/02350

Responsible committee: B/538/5 Industrial and commercial garage doors and gates

Interested committees:

Title: Draft BS EN 13241 Industrial, commercial, garage doors and gates - Product standard, performance characteristics.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Industrial, commercial, garage doors and gates - Product standard, performance characteristics

Portes et portails industriels, commerciaux et de
garage - Norme de produit, caractéristiques de
performance

Tore - Produktnorm, Leistungseigenschaften

This draft European Standard is submitted to CEN members for second 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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 13241:2022) 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 second CEN Enquiry.

This document will supersede EN 13241:2003+A2:2016, EN 12424:2000, EN 12425:2000, EN 12426:2000.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association.

For relationship with Regulation (EU) 305/2011, see informative Annex ZA, which is an integral part of this document.

Compared with EN 13241:2003+A2:2016, the following changes have been made:

- titles of clauses and subclauses as well as formulations of the texts have been revised to comply with the model standard;
- new abbreviations for expressions of characteristics has been introduced;
- classification of the characteristic water tightness (4.3, 5.3), formerly EN 12425:2000, has been integrated;
- classification of the characteristic resistance to wind load (4.4, 5.4), formerly EN 12424:2000, has been integrated;
- classification of the characteristic air permeability (4.6, 5.6), formerly EN 12426:2000, has been integrated;
- method for calculating the thermal transmittance (4.5, 5.5) has been integrated;
- relevant requirements and definitions from EN 16034 relevant to fire and smoke characteristics have been incorporated on request by the European Commission in this standard (4.10, 4.11, 4.12, 4.14, 4.15.2, 4.15.3) and numbers of subclauses has been consequently updated;
- Annex ZA has been updated to CPR requirements;
- editorial changes in the text.

Introduction

Mechanical requirements and test methods for industrial, commercial, garage doors and gates and barriers are covered by EN 12604:2017+A1:2020.

Requirements and test methods related to Machinery Directive 2006/42/EU for power operated industrial, commercial, garage doors and gates and barriers are covered by EN 12453:2017+A1:2021.

1 Scope

This document specifies the safety and performance characteristics for industrial, commercial, garage doors and gates and barriers, 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 document also covers commercial doors such as rolling shutters and rolling grilles used in retail premises which are mainly provided for the access of persons rather than vehicles or goods.

These doors can include manual pedestrian pass doors incorporated in the door leaf which are also covered by this document.

These devices can be manually or power operated.

This document also provides indications on the product modifications not affecting the performances of the concerned products.

NOTE The requirements and rules for variations (regarding the direct and extended field of applications) of fire resistance and/or smoke control door are given in the EN 15269 series, EN 17020 series, EN 1634-1 and EN 1634-3.

This document does not apply to:

- lock gates and dock gates;
- doors on lifts;
- doors on vehicles;
- armoured doors;
- doors mainly for the retention of animals, unless they are at the site perimeter;
- theatre textile curtains;
- power operated doors mainly intended for pedestrian use according to EN 16361:2013+A1:2016;
- doors outside the reach of people (such as crane gantry fences);
- railway barriers;
- barriers intended solely for use by pedestrians;
- barriers used solely for vehicles on motorways.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1155:1997+A1:2002, *Building hardware — Electrically powered hold-open devices for swing doors — Requirements and test methods*

EN 1191:2012, *Windows and doors — Resistance to repeated opening and closing — Test method*

EN 1634-1:2014+A1:2018, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 1634-3:2004, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 3: Smoke control test for door and shutter assemblies*

prEN 12427:2020, *Industrial, commercial and garage doors and gates — Air permeability — Test method*

EN 12428:2013, *Industrial, commercial and garage doors — Thermal transmittance — Requirements for the calculation*

EN 12433-1:1999, *Industrial, commercial and garage doors and gates — Terminology — Part 1: Types of doors*

EN 12433-2:1999, *Industrial, commercial and garage doors and gates — Terminology — Part 2: Parts of doors*

prEN 12444:2020, *Industrial, commercial and garage doors and gates — Resistance to wind load — Testing and calculation*

EN 12453:2017+A1:2021, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Requirements and test methods*

prEN 12489:2020, *Industrial, commercial and garage doors and gates — Resistance to water penetration — Test method*

EN 12600:2002, *Glass in building — Pendulum tests — Impact test method and classification for flat glass*

EN 12604:2017+A1:2020, *Industrial, commercial and garage doors and gates — Mechanical aspects — Requirements and test methods*

EN 13238:2010, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13501-2:2016, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*

EN 14637:2007, *Building hardware — Electrically controlled hold-open systems for fire/smoke door assemblies — Requirements, test methods, application and maintenance*

EN 16361:2013+A1:2016, *Power operated pedestrian doors — Product standard, performance characteristics — Pedestrian doorsets, other than swing type, initially designed for installation with power operation*

EN 16516:2017+A1:2020, *Construction products: Assessment of release of dangerous substances — Determination of emissions into indoor air*

EN ISO 1716:2018, *Reaction to fire tests for products — Determination of the gross heat of combustion (calorific value) (ISO 1716:2018)*

EN ISO 11925-2:2020, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2020)*

EN ISO 12567-1:2010, *Thermal performance of windows and doors — Determination of thermal transmittance by the hot-box method — Part 1: Complete windows and doors (ISO 12567-1:2010)*

3 Terms and definitions, symbols, units and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12433-1:1999, EN 12433-2:1999 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

NOTE Whenever the term “door” is used in this document, it is considered to cover the full range of types of doors, gates and barriers addressed by the scope of this document.

3.1 door

assembly of parts and components to close and open an aperture 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

- without fire resistance and/or smoke control characteristics, or
- with fire resistance and smoke control characteristics,

Note 1 to entry: “gate” refers to such products used outside buildings, e.g. in boundaries, fences, etc.

Note 2 to entry: Parts and components of the assembly can be side panel(s), vision panel(s), flush over panel(s), transom panel(s) and/or glazing, building hardware and seals.

Note 3 to entry: This document does not provide any indications to the door leaf material (e.g. polymers, fabrics or composites)

3.2 self-closing (for doors with fire resistance and smoke control only)

ability of an open door to close fully into its frame and engage any latching devices necessary for fire resisting and smoke control purposes that are fitted, without human intervention, by stored energy, or by mains power backed up by stored energy in case of power failure

3.3 ability to release (for doors with fire resistance and smoke control only)

release of the hold-open device of a door to ensure reliable closing of the door from a defined position

3.4 friable material (for doors with fire resistance and smoke control only)

any material which could crumble, slump, drop or shake down during the normal life of a door as, e.g. loose infill mineral fibre, loose materials filled in or blown in the door leaf and gypsum boards

Note 1 to entry: Gypsum plasterboards, mineral fibre boards with adhesive binder and silicate fibre boards are not considered to be friable.

3.2 Symbols and abbreviated terms

For the purposes of this document, the following symbols, units and abbreviated terms apply:

A, B, C, D, W	heat losses (see Annex C)	W/m^2K
AVCP	assessment and verification of constancy of performance (previously named attestation of conformity)	
C	self-closing	
D_{AR}	durability of the ability to release	
DoP	declaration of performance	
D_{SCA}	durability of self-closing against ageing (corrosion)	
D_{UV}	durability against UV action, weathering, ageing and degradation	
E	integrity	
EI_1, EI_2	integrity and insulation	
EW	integrity and radiation	
FPC	factory production control	
MR	mechanical resistant	
REL	released	
S_{200}	smoke leakage at medium temperature	
S_a	smoke leakage at ambient temperature	
S_D	safeguarded by protective devices	
S_F	safeguarded by forces limitations	
S_O	safe opening	
VOC	volatile organic compounds (dangerous substances)	
X, Y	areas of door leaf (see Annex C)	m^2

4 Characteristics

4.1 Operating forces (safety in use, only for automatic devices)

The capability of the door to operate safely shall be determined according to 5.1 and expressed by “Safeguarded by forces limitations” (S_F) or “Safeguarded by protective devices” (S_D).

EXAMPLE S_D

NOTE Automatic devices to be understood as power operated doors.

4.2 Safe opening (for vertically moving doors)

The capability of a door to operate safely shall be determined according to 5.2 and be expressed by “Safe opening” (S_0).

EXAMPLE S_0

Doors shall be in line with 4.8.

4.3 Water tightness

Water tightness is the capability of the door to resist water penetration when in closed position.

Water tightness shall be determined according to 5.3 and expressed as a class as stated in Table 1.

EXAMPLE 1 1

EXAMPLE 2 3 (60 Pa/90 s)

Table 1 — Classes of resistance to water penetration [Pa/t]

Class	Test pressure Pa (N/m ²)	Water spray t
1	30	Water spray for 15 min
2	50	Water spray for 20 min
3 ^a	> 50	to be declared ^b
^a [Pa/t] is the actual test pressure in Pa and time in seconds (e.g. 60 Pa/90 s, etc.). ^b to be declared as e.g. “3 (60 Pa/90 s)”.		

4.4 Resistance to wind load

Wind load is the differential pressure between the two sides of the fully closed door.

Following pre-test conditioning according to A.2, resistance to wind load shall be determined according to 5.4 and expressed as a class as stated in Table 2.

EXAMPLE 1 1

EXAMPLE 2 5 (1 450 Pa)

Table 2 — Wind load classes

Class ^a	Pressure wind load Pa	Wind load
1	300	
2	450	
3	700	
4	1 000	

Class ^a	Pressure wind load Pa	Wind load
5	> 1 000	to be declared ^b
^a The classes shown in Table 2 indicate positive pressure. Suction or reverse direction loads shall be specified as a negative class. The same door can have a positive and a negative classification. Classes to be declared as e.g. "1/-1" (indicating a test results of class 1 with positive and negative pressure) or e.g. "1/-" (indicating a test result of class 1 for only a positive pressure and no result/failure with negative pressure). ^b to be declared as e.g. "5 (1 450 Pa)".		

Assessment shall also show that the door leaf will remain in position under a peak load 1,25 times greater than the reference wind load. Permanent deformations of door components are allowed in this case.

Doors to be installed in a façade shall at least comply with class 2.

4.5 Thermal resistance (only for uses where thermal performance is required)

The thermal resistance indicates the thermal transmittance from one face to the other of the door.

Thermal resistance shall be determined according to 5.5 and expressed as U-value [W/m²K].

EXAMPLE 4,5 W/m²K

4.6 Air permeability (only for uses where thermal performance is required)

Air permeability indicates the passage of air through the closed door. Air permeability shall be determined according to 5.6 and expressed as class in Table 3.

EXAMPLE 1 1

EXAMPLE 2 6 (1,1 Δp)

Table 3 — Air permeability classes

Class	Air permeability Δp at a pressure of 50 Pa m ³ /m ² h	Specification
1	24	
2	12	
3	6	
4	3	
5	1,5	
6	< 1,5	to be declared ^a
^a to be declared as e.g. "6 (1,1 Δp)".		

4.7 Definition of geometry of glass components

In order that transparent or translucent infills (e.g. glass, plastic materials) used in doors shall not become dangerous, the geometry of glass components shall be determined according to 5.7 and expressed as class according to EN 12600:2002.

EXAMPLE 3

4.8 Mechanical resistance and stability

The door and its components, including its fixing and assembling means as specified by the manufacturer for attachment to a building or structure, shall be designed so that elastic or permanent deformations under operational forces or torques which occur during normal use do not affect the operation and the safety of the door, determined according to 5.8 and expressed by “MR”.

EXAMPLE MR

Vertically moving doors shall be safeguarded in the event of failure of a single component in their suspension (including gear drives) or balancing system against dropping or uncontrolled out-of-balance movement.

Horizontally moving doors shall be safeguarded against dropping and/or derailment.

4.9 Release of dangerous substances

The release of VOCs into indoor air shall be determined according to 5.9 and expressed as values in accordance with EN 16516:2017+A1:2020.

4.10 Resistance to fire (for doors with fire resistance and smoke control only, for fire compartmentation uses)

The capability of the door to provide “integrity” (E), “integrity and insulation” (EI₁, EI₂) or “integrity and radiation” (EW) for a certain period of time in the event of fire shall be determined according to 5.10 and classified according to EN 13501-2:2016.

EXAMPLE EI₂ 60

4.11 Smoke control (for doors with fire resistance and smoke control only, only for applications where limitation of smoke spread is required)

The capability of the door to prevent smoke leakage at medium temperature (S₂₀₀) or smoke leakage at ambient temperature (S_a) in the event of smoke shall be determined according to 5.11 and results are classified according to EN 13501-2:2016.

EXAMPLE S_a

4.12 Ability to release (for doors with fire resistance and smoke control only)

In order to release and enable the reliable closing of a door in the event of fire and/or smoke and/or failure of the power supply the hold-open device shall be determined according to 5.12 and expressed as “released” (REL).

EXAMPLE REL