

Industrial, commercial and garage doors and gates — Resistance to wind load — Classification

The European Standard EN 12424:2000 has the status of a
British Standard

ICS 91.060.50

National foreword

This British Standard is the official English language version of EN 12424:2000.

The UK participation in its preparation was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, to Subcommittee B/538/5, Industrial, commercial and garage doors and gates, which has the responsibility to:

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- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 5 and a back cover.

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EUROPEAN STANDARD

EN 12424

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Industrial, commercial and garage doors and gates - Resistance to wind load - Classification

Portes équipant les locaux industriels, commerciaux et les garages - Résistance à la charge de vent - Classification

Tore - Widerstand gegen Windlast - Klassifizierung

This European Standard was approved by CEN on 19 July 2000.

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Contents

| | Page |
|-------------------------|-------------|
| Foreword | 2 |
| 1 Scope | 2 |
| 2 Normative References | 3 |
| 3 Terms and definitions | 3 |
| 4 Classification | 3 |
| 5 Marking | 4 |
| Bibliography | 5 |

Foreword

This European Standard 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 European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2001, and conflicting national standards shall be withdrawn at the latest by January 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

No existing EN standard is superseded.

This standard is one of a series of performance standards identified within the product standard prEN 13421:1998.

European Standards as well as relevant national regulations and standards will enable the actual exposure levels to be determined for the individual locations of the products.

1 Scope

1.1 General

This European Standard specifies the classification for wind load for doors in a closed position.

The doors are intended for installation in areas in the reach of people, for which the main intended uses are giving safe access for goods, vehicles and persons in industrial, commercial or residential premises.

The doors may be manually or power operated.

NOTE In case of wind load it is not necessary that the door can be opened or closed.

This document applies to all doors provided in accordance with prEN 13241:1998.

1.2 Exclusions

It 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 doors less than 2,5 m wide and 6,25 m² area, designed principally for pedestrian use;
- revolving doors of any size;
- doors outside the reach of people (such as crane gantry fences);
- railway barriers;
- barriers used solely for vehicles.

2 Normative References

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

| | |
|-----------------|---|
| 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 12444:1996 | Industrial, commercial and garage doors and gates - Resistance to wind load - Testing and calculation |
| prEN 13241:1998 | Industrial, commercial and garage doors and gates - Product standard |

3 Terms and definitions

For the purpose of this standard the terms and definitions in EN 12433-1 and EN 12433-2 apply.

4 Classification

The wind load performance shall be expressed in relation to classes as specified in table 1.

Wind load is understood as differential pressure of one side of the fully closed door leaf to the other.

A test specimen belongs to a specified class, if the results of a full scale test, model test, component part test and/or calculations in accordance with prEN 12444:1996 show that the test specimen is able to withstand the reference wind load specified for that class.

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

Table 1 - Wind load classes

| Class | Reference wind load [Pa] | Specification |
|--------------|-------------------------------------|---|
| 0 | | No performance determined |
| 1 | 300 | |
| 2 | 450 | |
| 3 | 700 | |
| 4 | 1000 | |
| 5 | >1000 | Exceptional; Agreement between manufacturer and purchaser |

A complete door requirement may be in different classes for one or more areas of the leaves as determined by national regulations in the case when these specify different pressures at different heights.

The classes shown in table 1 indicate positive pressure. Suction or reverse direction loads have to be specified as a negative class i.e. a wind load of 300 Pa applied to the inside face of the door is shown as class -1.

NOTE 1 Class 0: Is provided for identifying where there is no wind load performance, i.e. grilles or doors fitted to interior openings or fully protected openings.

NOTE 2 Class 5: Is considered as "Exceptional" above 1000 Pa where a purchaser has a particular requirement and doors are designed specifically for that purpose by agreement between the manufacturer and the purchaser.

NOTE 3 The same door can have a positive and a negative classification.

5 Marking

The performance classes shall be clearly marked in accordance with prEN 13241:1998 either on the door label or in the relevant documentation.

Bibliography

ENV 1991-2-4 Eurocode 1: Basis of design and actions on structures -
Part 2-4: Actions on structures - Wind actions

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