

## **External blinds and shutters - Resistance to wind loads - Methods of testing**

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loads - Methods of testing

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1932:2001 sisaldab Euroopa standardi EN 1932:2001 ingliskeelset teksti.	This Estonian standard EVS-EN 1932:2001 consists of the English text of the European standard EN 1932:2001.
Käesolev dokument on jõustatud 16.11.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 16.11.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

<b>Käsitlusala:</b> The current standard defines the test methods to be applied to evaluate the wind resistance of blinds and shutters designed to be used in front window/doors or facades and delivered as a complete unit.	<b>Scope:</b> The current standard defines the test methods to be applied to evaluate the wind resistance of blinds and shutters designed to be used in front window/doors or facades and delivered as a complete unit.
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**Võtmesõnad:** hardware, ironmongery (building, methods, protection devices, protective devices, roller shutters, shear strength, specification (approval), specifications, strap hinges, strength of materials, testing, trials, wear, venetian blinds, wind resistance, windows, winds

ICS 91.060.50

English version

## External blinds and shutters - Resistance to wind loads - Method of testing

Fermetures pour baies équipées de fenêtres et stores extérieurs - Résistance aux charges de vent - Méthodes d'essai

Abschlüsse und Markisen - Widerstand gegen Windlast - Prüfverfahren

This European Standard was approved by CEN on 1 March 2000.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

## CONTENTS

## Page

Foreword.....	3
1 Scope .....	3
2 Normative references.....	3
3 Terms and definitions.....	4
3.1 test pressure $p$ .....	4
3.2 nominal test load $F_N$ .....	4
3.3 safety load $F_S$ .....	4
3.4 dimensions.....	4
4 Test conditions.....	5
4.1 Dimensions of test samples.....	5
4.2 Laboratory conditions.....	5
5 Folding arm and treillis arm awnings.....	5
5.1 Test preparation.....	5
5.2 Test methods.....	6
6 Pivot arm awning and marquiselette .....	8
6.1 Test preparation.....	8
6.2 Test methods.....	9
7 Awning with lateral guiderail without tension system .....	11
7.1 Test preparation.....	11
7.2 Test methods.....	12
8 Awning with lateral guiderail with tension system .....	13
8.1 Test preparation.....	14
8.2 Test methods.....	14
9 Roller shutter, wing shutter, venetian shutter, flat closing concertina shutter, concertina shutter, sliding panel shutter .....	16
9.1 Test preparation.....	16
9.2 Test methods.....	17
10 External venetian blind.....	18
10.1 Test preparation.....	18
10.2 Test methods.....	19
11 Resistance of projection systems.....	20
11.1 Test preparation.....	21
11.2 Test methods.....	21
12 Test report .....	22
Annex A (Informative) Description of a test apparatus for the measurement of the wind resistance of shutters.....	24

## 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 September 2001, and conflicting national standards shall be withdrawn at the latest by September 2001.

It is part of a package of standards dealing with blinds and shutters for buildings as defined in prEN 12216:1995.

The effect of wind on external blinds and shutters takes the form of pressure pushing and pulling which are reproduced conventionally by the following tests.

These tests enable verification, under these conditions, that the blind or shutter as a whole satisfies the specifications in prEN 13561:1999 and prEN 13659:1999 namely :

- presents no unacceptable visual defects;
- retains its characteristics of suitability for use;
- does not endanger the safety of users.

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.

## 1 Scope

The current standard specifies the test methods to be applied to evaluate the wind resistance of blinds and shutters designed to be used in front windows/doors or façades and delivered as a complete unit.

This standard applies to:

- **Shutters** : roller shutter, external venetians blind, wing shutter, venetian shutter, concertina shutter, flat closing concertina shutter and sliding panel shutters (Including those with projection systems).
- **Blinds** : folding arm awning and trellis arm awning, pivot arm awning, marquisolette, vertical awning, façade awning, conservatory awning and roof light awning.
- whatever of the nature of the constituent materials;
- under normal operating conditions;
- and installed in compliance with the manufacturer's installations instructions.

Dutch awnings (adjustable or fixed) and solar screen are not included.

## 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 the present European standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 13527 *Blinds and shutters – Measurement of operating force – Test methods.*

prEN 12216:1995, *Shutters, external blinds, internal blinds – Terminology, glossary and definitions.*

prEN 13561:1999, *External blinds – Performance requirements including safety.*

prEN 13659:1999, *Shutters – Performance requirements including safety.*

### 3 Terms and definitions

For the purposes of this standard the terms and definitions given in prEN 12216:1995, prEN 13561:1999 and prEN 13659:1999 apply together with the following :

#### 3.1

##### **test pressure $p$**

Pressure exerted on the external or internal face of the test sample which represents the differential pressure (difference in pressure between the two faces) exerted by the wind on the exterior blind or shutter

$p$  is chosen within the wind resistance classes specified in prEN 13561:1999 and prEN 13659:1999

#### 3.2

##### **nominal test load $F_N$**

Sum of selective forces applied to the blind or shutter allowing the reproduction of effects caused by uniform pressure exerted on the test sample

It is a function of :

- the test pressure  $p$ ;
- a coefficient  $\beta$  which expresses the relationship between the static wind load and the test load;
- the surface submitted to loading.

##### 3.2.1

##### **direct nominal test load $F_N$**

Nominal load corresponding to a pressure exerted on the external face (positive differential pressure)

##### 3.2.2

##### **inverse nominal test load $-F_N$**

Nominal load corresponding to pressure exerted on the internal face (negative differential pressure)

#### 3.3

##### **safety load $F_S$**

Direct or inverse load under which there shall be no rupture of the product

The safety load  $F_S$  is linked to the nominal load  $F_N$  by a coefficient  $\gamma$  which value depends on the product involved :  $F_S = \gamma \times F_N$

#### 3.4

##### **dimensions**

##### 3.4.1

##### **height $H$**

In the case of awnings,  $H$  is the distance between the axis of the roller tube and the extremity of the front or bottom profile

In the case of roller shutters,  $H$  is the measurement of the visible part of the curtain including the bottom lath

In the case of external venetian blinds,  $H$  is distance between the top edge of the headbox and the extremity of the bottom lath

In the case of others shutters,  $H$  is the height of the curtain

##### 3.4.2

##### **width $L$**

In the case of awnings,  $L$  is the width of the fabric

In the case of shutters,  $L$  is the visible width of the curtain