

Windows — Classification of mechanical properties — Racking, torsion and operating forces

The European Standard EN 13115:2001 has the status of a
British Standard

ICS 91.060.50

National foreword

This British Standard is the official English language version of EN 13115:2001.

The UK participation in its preparation was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, to Subcommittee B/538/1, Windows, 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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This British Standard, having been prepared under the direction of the Sector Policy and Strategy Committee for Building and Civil Engineering, was published under the authority of the Standards Policy and Strategy Committee on 31 August 2001

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.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 31 August 2001

ISBN 0 580 38260 5

EUROPEAN STANDARD

EN 13115

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2001

ICS 91.060.50

English version

Windows - Classification of mechanical properties - Racking, torsion and operating forces

Fenêtres - Classification des propriétés mécaniques -
Charge verticale, torsion et efforts de manoeuvre

Fenster - Klassifizierung mechanischer Eigenschaften -
Vertikallasten, Verwindung und Bedienkräfte

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EN 13115:2001 (E)

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of an identical text or by endorsement, at the latest by January 2002, and conflicting national standards shall be withdrawn at the latest by January 2002.

This standard is part of a series of standards dedicated to windows.

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

This standard provides a means of classifying the performance of opening windows according to their strength in resisting, where appropriate, racking load, static torsion and their operating forces. Special aspects such as those of burglar resistance are not covered.¹

2 Normative references

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

prEN 947-1	<i>Resistance to vertical load (racking) – Part 1: Windows.</i>
prEN 948-1	<i>Resistance to static torsion – Part 1: Windows.</i>
EN 12046-1	<i>Operating forces – Test method – Part 1: Windows.</i>

3 Classification criteria

After testing, according to the type of window construction as indicated below, the test specimen shall remain functional in relation to its operating forces (see 3.1). The specimen shall not suffer such damage or deformation, including loosening of hardware, joints or weather sealing systems, as would render it unfit for its purpose.

3.1 Operating forces

Hinged, pivoted or sliding windows shall be tested in accordance with EN 12046-1. Table 1 lists the forces and / or torques to be sustained for the various classes.

Table 1 - Classification of operating forces

Test	Resistance to operating forces	Class 0	Class 1	Class 2
3	a) Casement or sash	–	100 N	30 N
	b) Hardware			
	1) Lever handles (hand operated)	–	100 N or 10 Nm	30 N or 5 Nm
	2) Finger operated	–	50 N or 5 Nm	20 N or 2 Nm

3.2 Resistance to racking load

Hinged, pivoted or sliding windows shall be tested in accordance with prEN 947-1.

The load to be applied shall be selected from the performance levels in Table 2.

¹ Effects on other criteria such as air permeability, are not addressed by this document.

3.3 Resistance to static torsion

Hinged or pivoted windows shall be tested in accordance with prEN 948–1.

The load to be applied shall be selected from the performance levels in Table 2.

4 Classification

The classification is shown in Table 1 and 2.

Hinged or pivoted windows shall be subjected, separately, to tests 1, 2 and 3.

Sliding windows shall be subjected, separately, to tests 1 and 3 only.

Secondary sashes/casements, opened only for cleaning purposes, shall be tested to 100 N only for test 1 in the case of sliding sashes and for tests 1 and 2 in the case of hinged casements.

Table 2 - Classification for racking and static torsion² (mechanical strength)

Test	Resistance to:	Class 0	Class 1	Class 2	Class 3	Class 4
Test 1	racking	–	200 N	400 N	600 N	800 N
Test 2	static torsion	–	200 N	250 N	300 N	350 N

² To qualify for a particular class, the requirements of both tests, where relevant, are satisfied

Bibliography

prEN 12519 *Windows and doors – Terminology.*

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