BRITISH STANDARD

BS EN
1335-2:2009

Office furniture — Office work chair

Part 2: Safety requirements

ICS 13.180; 97.140

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 1335-2:2009. It supersedes BS EN 1335-2:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FW/0/3, Office.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN 1335-2:2009) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by October 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1335-2:2000.

This series consist of following parts:

EN 1335-1, *Office furniture — Office work chair — Part 1: Dimensions — Determination of dimensions*;

EN 1335-2, *Office furniture — Office work chair — Part 2: Safety requirements*;

EN 1335-3, *Office furniture — Office work chair — Part 3: Test methods*.

The main changes with respect to the previous edition are listed below:

a) castor durability (former 6.2) has been defined as functional test;

b) foot rest stability and foot rest static load have been defined as safety test.

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

1 Scope

This part of EN 1335 specifies the mechanical safety requirements for office work chairs.

The requirements are based upon use for 8 h a day by persons weighing up to 110 kg. For more severe conditions of use, increased requirements will be necessary.

Annex A (normative) includes loads, masses and cycles for safety tests.

Additional loads, masses and cycles for functional tests can be found in EN 1335-3:2009, Annex C.

2 Normative references

The following referenced documents are indispensable for the application 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 1335-1:2000, *Office furniture — Office work chair — Part 1: Dimensions — Determination of dimensions*

EN 1335-3:2009, *Office furniture — Office work chair — Part 3: Test methods*

EN 12529:1998, *Castors and wheels — Castors for furniture — Castors for swivel chairs — Requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
castor
assembly comprising a housing, one or more wheels, an axle and, if required, accessories

[EN 12529:1998]

4 Safety requirements

4.1 General design requirements

4.1.1 Corners and edges, trapping, pinching and shearing

The chair shall be so designed as to minimise the risk of injury to the user.

All parts of the chair with which the user comes into contact during intended use, shall be so designed that physical injury and damage to property are avoided.

These requirements are met when:

a) the safety distance of accessible movable parts is either ≤ 8 mm or ≥ 25 mm in any position during movement;

b) accessible corners are rounded with minimum 2 mm radius;

c) the edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair are rounded with minimum 2 mm radius;

d) the edges of handles are rounded with minimum 2 mm radius in the direction of the force applied;

e) all other edges are free from burrs and rounded or chamfered;

f) the ends of accessible hollow components are closed or capped.

4.1.2 Adjusting devices

Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.

It shall be possible to operate the adjusting devices from sitting position in the chair.

4.1.3 Connections

It shall not be possible for any load bearing part of the chair to come loose unintentionally.

4.1.4 Avoidance of soiling

All parts which are lubricated to assist sliding (greasing, lubricating, etc.) shall be designed to protect users from lubricant stains when in normal use.

4.2 Test sequence

The same chair shall be tested in the following sequence:

a) stability tests (optional);

b) rolling resistance test (optional);

c) seat and back rest tests;

d) foot rest static load test;

e) arm rests durability test;

f) arm rest downward static load test - central (see Table A.2, Footnote a);

g) stability tests;

h) arm rest downward static load test - central (see Table A.2, Footnote b);

i) rolling resistance test.

4.3 Stability during use

The chair shall not overbalance under the following conditions:

a) by pressing down on the front edge of the seat surface in the most adverse position;

b) by leaning out over the arm rests;

c) by leaning against the back rest;

d) by sitting on the front edge.

Requirement a) is fulfilled if the chair does not overbalance when tested according to 7.1.1 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.1 of this standard.

Requirements b) and d) are fulfilled if the chair does not overbalance when tested according to 7.1.2, 7.1.3, 7.1.4 and 7.1.5 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.1 of this standard.

Requirement c) is fulfilled if the chair does not overbalance when tested according to 7.1.6 or 7.1.7 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.1 of this standard.

4.4 Rolling resistance of the unloaded chair

The unloaded chair shall not roll unintentionally.

This requirement is met when:

a) the castors are of identical construction;

b) the rolling resistance is ≥ 12 N when tested according to EN 1335-3:2009, 7.4.

4.5 Strength and durability

The chair shall be constructed to ensure that it does not create a risk of injury to the user of the chair under the following conditions:

a) sitting on the seat, both centrally and off-centre;

b) moving forward, backwards, and sideways while sitting in the chair;

c) leaning over the arm rests;

d) pressing down on the arm rests while getting up from the chair.

These requirements are fulfilled when after the tests specified in 7.2.1, 7.2.2, 7.2.6, 7.3.1 and 7.3.2 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.2 of this standard:

e) there are no fractures of any member, joint or component, and

f) there is no loosening of joints intended to be rigid, and

g) no major structural element is significantly deformed and the chair fulfils its functions after removal of the test loads

and when:

h) after the test in 7.2.3 of EN 1335-3:2009 with the forces and numbers of cycles according to Table A.2 of this standard, the arm rests show no fracture.

5 Information for use

Each chair shall be accompanied by information for use in the language of the country in which it will be delivered to the end user. It shall contain at least the following details:

a) information regarding the intended use;

b) information regarding possible adjustments and chair type (see EN 1335-1:2000);

c) instruction for operating the adjusting mechanisms;

d) instruction for the care and maintenance of the chair;

e) information regarding all adjustments;

f) information for chairs with seat height adjustments with energy accumulators that only trained personnel may replace or repair seat height adjustment components with energy accumulators;

g) information on the choice of castors in relation to the floor surface.

Annex A
(normative)

Loads, masses and cycles for safety tests

Table A.1 — Loads, masses and cycles for stability tests

Clauses given in EN 1335-3:2009	Test		Loads	Cycle
7.1.1	Front edge overturning	M_1	27 kg	1
7.1.2	Forward overturning	F_1	600 N	1
		F_2	20 N	
7.1.3	Forward overturning for chairs with foot rests	F_1	1 100 N	1
		F_2	20 N	
7.1.4	Sideways overturning for chairs without arm rests	F_1	600 N	1
		F_2	20 N	
7.1.5	Sideways overturning for chairs with arm rests	F_1	250 N	1
		F_2	350 N	
		F_3	20 N	
7.1.6	Rearwards overturning of chairs without back rest inclination	F_1	600 N	1
		F_2	192 N	
7.1.7	Rearwards overturning of chairs with back rest inclination	Number of discs:	13	1

Table A.2 — Loads and cycles for strength and durability tests

Clauses given in EN 1335-3:2009	Test		Loads	Cycles
7.2.1	Seat front edge static load test	F_1	1 600 N	10
7.2.2	Combined seat and back static load test	F_1	1 600 N	10
		F_2	560 N	
7.2.6	Foot rest static load test	F	1 300 N	10
7.3.1	Seat and back durability			
	Step 1 – Loading Point A	F	1 500 N	120 000
	Step 2 – Loading Point C	F	1 200 N	80 000
	Loading Point B	F	320 N	
	Step 3 – Loading Point J	F	1 200 N	20 000
	Loading Point E	F	320 N	
	Step 4 – Loading Point F	F	1 200 N	20 000
	Loading Point H	F	320 N	
	Step 5 – Loading Point D and G (alternating)	F	1 100 N	20 000
7.3.2	Arm rest durability	F	400 N	60 000
7.2.3	Arm rest downward static load test – central	F	750 N [a]	5
		F	900 N [b]	5

[a] This test shall be carried out before the stability tests

[b] This test shall be carried out after the stability tests

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