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SIST EN 12529:2000

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12529

September 1998

ICS 97.140

Descriptors: wheels, castors, furniture, seats, office equipment, office furniture, handling equipment, tests, long distance running test, dynamic test, static test, impact performance, conformity tests

English version

Castors and wheels - Castors for furniture - Castors for swivel chairs - Requirements

Roues et roulettes - Roulettes pour meubles - Roulettes pour sièges de bureau - Prescriptions

Räder und Rollen - Möbelrollen - Rollen für Drehstühle - Anforderungen

This European Standard was approved by CEN on 30 August 1998.

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 Central Secretariat 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 Central Secretariat 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.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 324 "Castors and wheels", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999

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 European Standard specifies the technical requirements, the appropriate dimensions and the requirements for testing.

This European Standard applies to castors with or without braking devices that will normally be used on swivel chairs.

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2 Normative references

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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 only 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.

prEN 1335	Office furniture - office work chair
EN 12526 : 1998	Castors and wheels - Vocabulary, recommended symbols and multilingual dictionary
EN 12527 : 1998	Castors and wheels - Test methods and apparatus

3 Definitions

For the purpose of this European Standard, definitions and recommended symbols of EN 12526 : 1998 apply.

4 Dimensions and classification

The characteristics of a castor are:

- fixing system
- castor type
- dimensions

4.1 Fixing system

The fixing system includes stem and circlip, threaded stem and other fixing systems.

4.2 Castor type

Castors are classified into four types:

4.2.1 Type H:

Castors with plain wheels are defined as Type H, hard tread. The wheel shall be one colour over the entire surface.

NOTE: These castors are suitable for carpeted floors.

4.2.2 Type W:

Castors with resilient tyred wheels are defined as Type W, soft tread. This shall be of a clearly different colour to the wheel centre.

NOTE: These castors are suitable for hard stone, wooden or tiled floors or those featuring non-textiled covering.

4.2.3 Type C:

Castors which are electrically conductive.

NOTE: These castors shall have either type H or type W wheels. They may also conform to type U.

4.2.4 Type U:

Castors for swivel chairs with a built-in braking mechanism

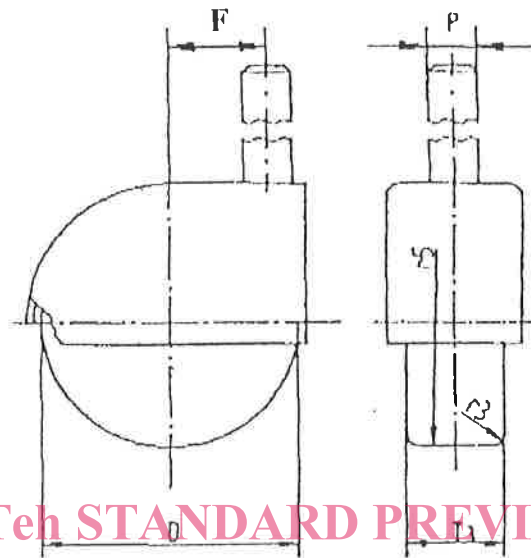
NOTE 1: For certain applications castors for swivel chairs require a built-in braking mechanism, that that is released when a person sits on the chair to which the castors are fitted, allowing ease of mobility in that position. This braking action is automatically re-applied as the person leaves the chair to prevent the chair rolling away unintentionally.

NOTE 2: The decision regarding the type of castors to be fitted to swivel chairs will be dependent on, the chair design and the type of floors and covering in use. The castors shall have either type H or type W wheels. They may also conform to type C.

NOTE 3: Castors with permanent braking systems are not acceptable.

4.3 Dimensions

The figures 1 and 2 show typical castor designs; table 1 shows the specified castor dimensions.



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Figure 1: Single-wheel swivel castor

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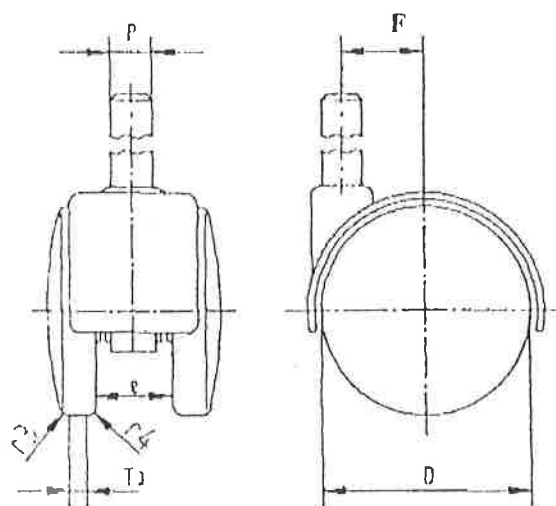


Figure 2: Twin wheel swivel castor

Table 1: Specified castor dimensions

dimensions in millimetres			
Description	Castor designs	Symbol	Dimension
Wheel diameter	All	D	min. 48
Offset	All	F	min. 18
Tread width	Single wheel	T ₃	min. 18
	Twin wheel		min. 2 x 7
External corner radius	All type H	r ₃	min. 6
	All type W		min. 1,5
Internal corner radius	All twin wheel	r ₄	min. 1,5
Tread curvature	All single wheel	r ₅	min. 110
Wheel spacing	All twin wheel	e	15 to 22
Minimum stem diameter	All	P	10 mm or M10

5 Requirements

Testing requirements for castors and wheels are listed below. Test methods and apparatus are defined in EN 12527 : 1998.

The test values detailed are the minimum required for acceptance.

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5.1 Standard Conditions

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5.1.1 Environmental conditions

Tests shall be carried out at a temperature between 17⁰ C and 23⁰ C. During the 24 h prior to the test the sample(s) shall remain at the above temperature, in an environment with a relative humidity between 40 % and 70 %.

Sample(s) shall not be artificially cooled during testing.

5.1.2 Test sequence

Electrical resistance, impact, contact pressure, stem retention and static load tests shall each be carried out with new castors.

Another new castor(s) is taken and the remaining tests carried out in the sequence shown in table 2.

Table 2: Test sequence for castor types and test procedure reference

Reference	Test sequence	Castors types	Test procedure reference
5.2	Impact performance	All	4.12
5.3	Electrical resistance	Castors Type C	4.4
5.4	Contact pressure	All	4.10
5.7	Brake performance	Castors Type U (first test)	4.11
5.8	Dynamic	All	4.13
5.9	Long distance running	All	4.14
5.10	Rolling resistance	All	4.15
5.11	Swivel resistance	All	4.16
5.7	Brake performance	Castors Type U (second test)	4.11
5.5	Stem retention	All	4.17
5.6	Static load	All	4.9

5.2 Impact performance

5.2.1 Test objectives, apparatus and procedures

Detailed in 4.12 of EN 12527 : 1998

5.2.2 Test values

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The test values are listed below. **(standards.iteh.ai)**

Symbol	Value	Description
L ₅	5 kg	free falling mass
h ₂	200 mm	drop height

5.2.3 Tolerances

The tolerances are:

Symbol	Tolerance	
	Unit	acceptable
L ₅	kg	+ 2 % / 0
h ₂	mm	+ 3 / 0

5.2.3 Acceptance criteria

No part of a castor shall become detached during the tests. On completion of the test the rolling, pivoting or braking performance shall be not impaired.

5.3 Electrical resistance test

5.3.1 Test objectives, apparatus and procedures

Detailed in 4.4 of EN 12527 : 1998