SLOVENSKI STANDARD
SIST EN 12531:2000

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Castors and wheels - Hospital Bed Castors

Castors and wheels - Hospital Bed Castors

Räder und Rollen - Krankenbettenrollen

Roues et roulettes - Roulettes pour lits d'hôpitaux

Ta slovenski standard je istoveten z: **EN 12531:1998**

ICS:

11.140	Oprema bolnišnic	Hospital equipment

SIST EN 12531:2000 **en**

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Descriptors: general product, bed, hospital, castors, characteristics, product requirements, dimensions, classification, tests, conformity tests, marking

English version

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

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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.

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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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Content

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of an identical text or by endorsement, at the latest by March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999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 swivel castors for hospital beds with a wheel diameter of 100 mm or more, which have a central locking device. Swivel castors may be used with the main principal dimensions.

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 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.

EN 12526 : 1998	Castors and wheels - Vocabulary, symbols and multilingual dictionary
EN 12527 : 1998	Castors and wheels - Test methods and apparatus
EN 12530 : 1998	Castors and wheels - Castors and wheels for manually propelled institutional applications
ISO 7619	Rubber - Determination of indentation hardness by means of pocket hardness meters

3 Definitions

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

4 Dimensions

The characteristics of a castor are:

- wheel diameter (see table 1)
- overall height (see table 1)
- offset (see table 1)
- fixing system (4.1)
- load capacity (4.2)

Dimensions listed in table 1 and figure 1 shall be used.

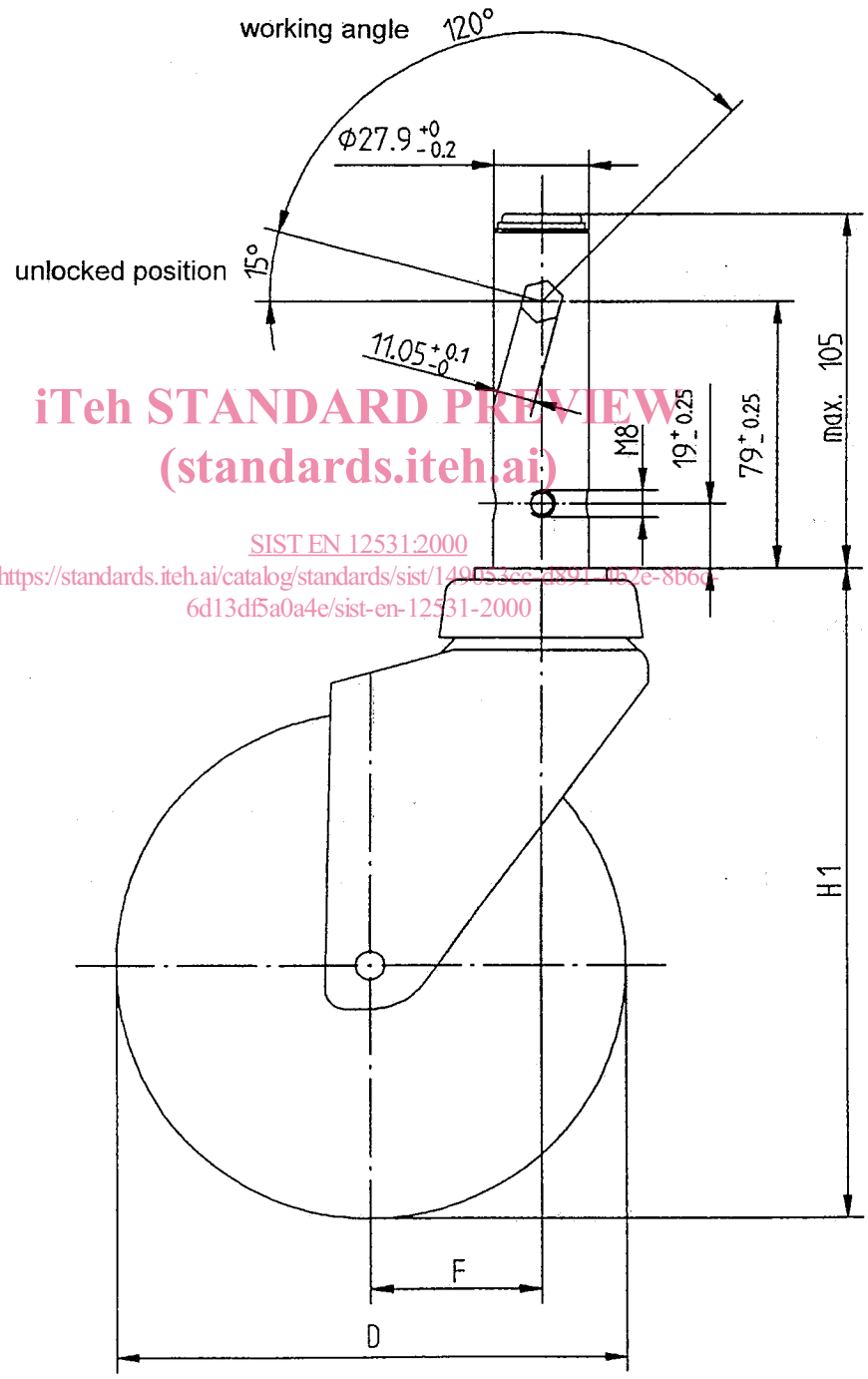

Figure 1: Principal dimensions of the central locking fixing

Table 1: Principal dimensions of swivel castors for hospital beds

dimensions in millimetres

Wheel diameter (D)	Overall height (H)	Offset (F)
Tolerance.: +/- 1 %	max	max
100	150	46
125	175	56
150	200	65
200	250	70
250	300	80

For dimensions of non central locking castors used in hospital beds, refer to relevant tables in EN 12530 : 1998.

4.1 Fixing system

The principal dimension of the fixing system with the central locking are:

- stem length
- stem diameter
- distance of the threaded hole centre from the stem collar
- thread size
- distance of the hexagon hole centre from the stem collar
- dimension of the hexagon hole
- working angle of the hexagon hole

4.2 Load capacity

Maximum load, in N, which can be carried by a wheel or a castor so as to fully comply to the required acceptance criteria.

5 Requirements

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

5.1 Standard Conditions

5.1.1 Environmental conditions

Tests have to be carried out at a temperature between 15° C and 28° 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

Tests, where relevant, shall be carried out in the sequence as listed in table 2.

Table 2: Test sequence for castor types

Reference	Test sequence	Castor types	Test procedures reference
5.2	Initial wheel play	All	4.2
5.3	Initial swivel play	Swivel castors with or without accessories	4.3
5.4	Electrical resistance	Castors electrically conductive	4.4
5.5	Fatigue test for locking/braking devices	Castors with a central locking/braking device.	4.5
5.6	Efficiency check of wheel braking and/or locking device	Castors with a central locking/braking device.	4.6
5.7	Efficiency check of swivel braking and/or locking device	Castors with a central locking/braking device.	4.7
5.8	Static test	All	4.9
5.9	Dynamic test	All	4.8
5.10	Efficiency check of wheel braking and/or locking device	Castors with a central locking/braking device.	4.6
5.11	Efficiency check of swivel braking and/or locking device	Castors with a central locking/braking device.	4.7
5.12	Final wheel play	All	4.2
5.13	Final swivel play	Swivel castors with or without accessories	4.3

5.2 Initial wheel play

5.2.1 Test objectives, apparatus and procedures

Detailed in 4.2 of EN 12527 : 1998

5.2.2 Acceptance criteria

The measured initial wheel play shall not exceed the value (W_1) in table 3

Table 3: Initial wheel play

dimensions in millimetres

Wheel diameter (D)	Maximum initial wheel play (W_1)
100	0,50
125	0,62
150	0,75
200	1,00
250	1,25

5.3 Initial swivel play

5.3.1 Test objectives, apparatus and procedures

Detailed in 4.3 of EN 12527 : 1998

5.3.2 Tolerances

The tolerances are:

- of the swivel play: lever of 200 mm use to measure the play: + / - 2 mm
- angle of rotation of swivelling by 90^0: + / - 5^0

5.3.3 Acceptance criteria

The measured initial swivel play shall not exceed the value (S_1).2

Symbol	Value	Description
S_1	4 mm	maximum initial swivel play

5.4 Electrical resistance test

5.4.1 Test objectives, apparatus and procedures

Detailed in 4.4 of EN 12527 : 1998

5.4.2 Test values

The test values are listed below.

Symbol	Value	Description
L_1	variable	load capacity
L_{17}	10 % of L_1	test load
R	variable	measured electrical resistance

5.4.3 Tolerances

The tolerances are:

Symbol	Tolerance	
	Unit	acceptable
L_1	N	+ 2 % / 0
L_{17}	N	+ 2 % / 0

5.4.4 Acceptance criteria

The resistance R of the sample tested shall be:

- conductive castor(s) or wheel(s): $R \leq 10^4\ \Omega$
- antistatic castor(s) or wheel(s): $10^5 \leq R \leq 10^7\ \Omega$

5.5. Fatigue test for locking/braking device

5.5.1 Test objectives, apparatus and procedures

Detailed in 4.5 of EN 12527 : 1998