SLOVENSKI STANDARD
SIST EN 12533:2000

01-december-2000

Castors and wheels - Castors and wheels for applications over 1,1 m/s (4 km/h) and up to 4,4 m/s (16 km/h)

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Räder und Rollen - Räder und Rollen für eine Geschwindigkeit über 1,1 m/s (4 km/h) und bis zu 4,4 m/s (16 km/h)

Roues et roulettes - Roues et roulettes pour des applications a plus de 1,1 m/s (4 km/h) et jusqu'a 4,4 m/s (16 km/h)

Ta slovenski standard je istoveten z: **EN 12533:1998**

ICS:

21.180	Ohišja, okrovi, drugi strojni deli	Housings, enclosures, other machine parts
53.060	Industrijski tovornjaki	Industrial trucks

SIST EN 12533:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12533

September 1998

ICS 21.180; 53.060

Descriptors: wheels, castors, handling equipment, characteristics, product requirements, dimensions, conformity tests, marking

English version

Castors and wheels - Castors and wheels for applications over 1,1 m/s (4 km/h) and up to 4,4 m/s (16 km/h)

Roues et roulettes - Roues et roulettes pour des applications à plus de 1,1 m/s (4 km/h) et jusqu'à 4,4 m/s (16 km/h)

Räder und Rollen - Räder und Rollen für eine Geschwindigkeit über 1,1 m/s (4 km/h) und bis zu 4,4 m/s (16 km/h)

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.

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

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

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 castors and wheels (which may include accessories) specifically for manually propelled or power towed industrial applications at speeds over 1,1 m/s (4 km/h) and up to 4,4 m/s (16 km/h).

Pneumatic wheels and drive wheels are excluded from this standard.

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, recommended symbols and multilingual dictionary

EN 12527 : 1998 Castors and wheels: Test methods and apparatus

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.

The castors and wheels are divided into three categories: A, B and C. These categories define three increasing speed ratings and listed in table 1.

Table 1: Categories

Category	A	B	C
Speed m/s (km/h)	1,7 (6)	2,8 (10)	4,4 (16)

4 Dimensions and classification

The characteristics of a castor are:

- top plate (4.1)
- offset (4.2)
- wheel (4.3)
- load capacity (4.4)

4.1 Top plate

Rectangular top plates are used with four fixing holes. The design of the outer profile is left to the manufacturer, provided that it is inscribed in a rectangle of maximum size A x B as in table 2 and figure 1.

The fixing holes are located at the corners of a rectangle inscribed in the outer profile. The holes may be oblong and form slots, provided the width of the slot is suitable for bolts of diameter (G_1) as in table 2.

Table 2 lists the standardised dimensions of the different classes of top plates.

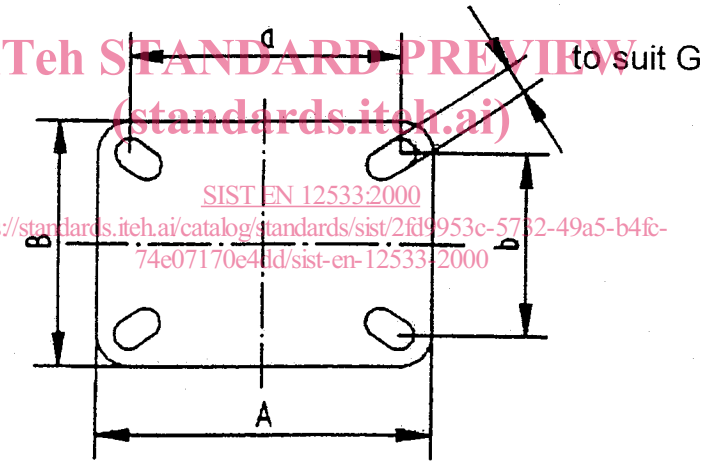

Figure 1: Rectangular top plate

Table 2: Rectangular top plate

dimensions in millimetres

Class	Maximum plate dimensions (A x B)	Bolt hole spacing (a x b)	Bolt diameter (G_1)
R51	160x120	105x80	10 12
R52	180x160	140x105	10 12 14 16
R53	230x180	160x120	12 14 16 20
R54	270x230	210x160	14 16 20

4.2 Offset

Table 3 specifies the minimum and maximum offset values (F) for the swivel castors, corresponding to the wheel diameter (D), as in figure 2.

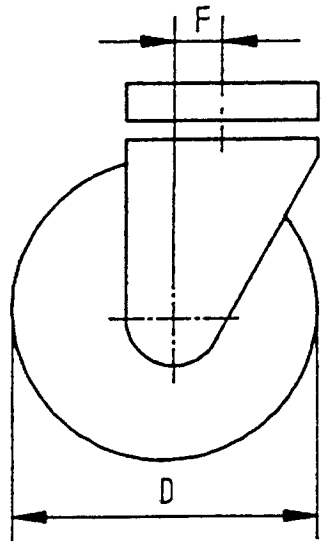

Figure 2: Offset

Table 3: Offset

dimensions in millimetres

Wheel diameter (D)	Offset (F)	
	Minimum	Maximum
125	25	75
150/160	30	95
200	40	120
250	50	150
280/300	55	180
350/360	70	215
400	80	240
450	90	270
500	100	300

NOTE: For shock absorbing castors the offset may vary from the dimensions stated.

4.3 Wheel

The characteristics of a wheel are:

- diameter (see table 4)
- hub width (see table 4)
- bore diameter (see table 4)
- load capacity (4.4)

The characteristics of the wheel are illustrated in figure 3 and the hub width (T_1) and bore diameter (d) corresponding to each wheel diameter (D) are listed in table 4. Wheels are not restricted to these hub widths and bores when used in castors.

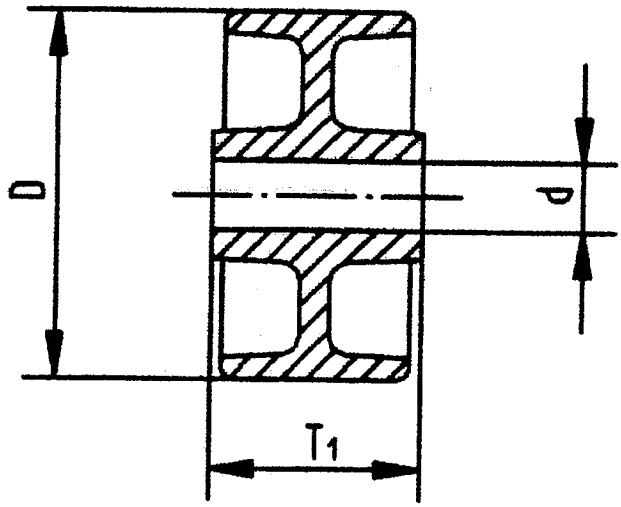

Figure 3: Wheel dimensions

Table 4: Wheel dimensions

dimensions in millimetres

Wheel diameter (D)	Hub width (T_1)	Bore diameters* (d)
125	50	20 25
	60	20 25
150/160	60	20 25
200	60	20 25
	75	25
	90	25 30
250	60	25 30
	75	25 30
	90	25 30
	140	30 40
280	60	25 30
	75	25 30
	90	25 30
300	90	25 30 35
	120	35 40
350/360	75	30 40
	90	35 40

Table 4 (continued)

Table 4 (concluded)

dimensions in millimetres

Wheel diameter (D)	Hub width (T_1)	Bore diameters* (d)
400	75	30 35 40
	90	35 40
	120	40 50
	140	40 50
450	90	40 50
	120	60
500	90	40 50
	120	60
	160	60

* The user must verify the mechanical strength of axle components (bolts, nuts, bushes, spacers etc.).
The above bores refer to the nominal diameter of the axle.

4.3.1 Wheel diameter tolerance

The tolerance on wheel diameter (D) is ± 1,5 %.

4.3.2 Hub width tolerance

The tolerance on hub width (T_1) is 0 / - 2 %.

4.4 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 apparatus and procedures 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 applicable, shall be carried out in the sequence as listed in table 5.