

Castors and wheels — Test methods and apparatus

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Räder und Rollen — Prüfverfahren und -geräte

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of an identical text or by endorsement, at the latest by March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999.

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Introduction

Castors and wheels are used in many applications and environments.

For many of these specific requirements are needed. Thus the need for a standard on testing of castors and wheels suitable for users, original equipment manufacturers and testing houses.

1 Scope

This European Standard specifies the test methods and apparatus to be used to check the performance of the castors and wheels.

The test to be used and the acceptance criteria, values and applicability relevant to each type of castor and wheel are covered by the specific standards.

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*.
ISO 2878, *Rubber vulcanized — Antistatic and conductive products — Determination of electrical resistance limits*.

3 Definitions and symbols

For the purposes of this European Standard, definitions given in EN 12526:1998 apply and the meaning of the symbols is listed in Table 1 and in the individual tests.

Table 1 — Symbols and meaning of the symbols

Symbol	Unit	Meaning of the symbols
A	mm	dimensions of top plate
a	mm	bolt hole spacing
B	mm	dimensions of top plate
b	mm	bolt hole spacing
c	m	distance between obstacles
D	mm	wheel diameter
d	mm	bore diameters
E_1	—	number of locking actions
E_2	cycles per minute	frequency of locking actions
e	mm	wheel spacing
F	mm	offset
f	mm	fork width
G	mm	fixing bolt diameter
g	mm	minimum distance of slotted hole centres
H	mm	overall height
h_1	mm	height of obstacles
h_2	mm	drop height
K_1	N	horizontal tractive force
K_2	N	horizontal tractive force
L_1	N	load capacity
L_2	N	test load
L_3	N	test load

Table 1 — Symbols and meaning of the symbols (*continued*)

Symbol	Unit	Meaning of the symbols
L_4	N	test load
L_5	kg	free falling mass
L_6	N	test load
L_7	N	test load
L_8	N	test load
L_9	N	test load
L_{10}	N	pull-out force
L_{17}	N	test load
M	mm	hub diameter
m	mm	swept radius
n	—	number of obstacles
P	mm	stem diameter
Q	mm	stem length
R	Ω	electrical resistance
r_1	—	number of wheel revolutions
r_2	—	number of cycles
r_3	mm	external corner radius
r_4	mm	internal corner radius
r_5	mm	tread curvature
S_1	mm	maximum initial swivel play
S_2	mm	maximum swivel wear play
s	mm	bearing seat dimensions
T	mm	wheel width
T_1	mm	hub width
T_2	mm	tyre width
T_3	mm	tread width
t	mm	bearing seat dimensions
v_1	m/s	average speed of running period
v_2	m/s	speed at impact with obstacles
v_3	mm/s	travel speed
W_1	mm	maximum initial wheel play
W_2	mm	maximum wheel wear play
w_1	N	minimum rolling resistance (type H)
w_2	N	minimum rolling resistance (type W)
w_3	N	horizontal tractive force
w_4	N	swivel resistance
y_1	value	load factor
y_2	h	time of application of the load
y_3	h	elapsed time prior to inspection (for furniture and swivel chair castors only)
z_1	min	running period
z_2	min	pause
z_3	—	speed (cycles per min)
β	degrees	angle of inclination