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Kontejnerji s kolesi - 4. del: Zahtevane lastnosti

Roll containers - Part 4: Performance requirements

Rollbehälter - Teil 4: Leistungsanforderungen

Conteneurs a roulettes - Partie 4: Exigences de performances

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Roll containers - Part 4: Performance requirements

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Rollbehälter - Teil 4: Leistungsanforderungen

This European Standard was approved by CEN on 4 November 2006.

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, 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 United Kingdom.

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Foreword

This document (EN 12674-4:2006) has been prepared by Technical Committee CEN/TC 261 “Packaging”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by June 2007 and conflicting national standards shall be withdrawn at the latest by June 2007.

This European Standard is part of a series of four standards for roll containers and dollies; no existing document is being replaced. The other parts are entitled as follows:

Roll containers – Part 1: Terminology

Roll containers – Part 2: General design and safety principles

Roll containers – Part 3: Test methods

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 United Kingdom.

Introduction

Roll containers and dollies are equipment intended for moving goods. They comprise apparatus fitted with fixed and/or swivel castors. For roll containers the superstructure comprises two or more frames which provide retention for items requiring transport and/or distribution.

Dollies and roll containers can be supplied in a variety of materials and additionally roll containers are supplied in four main styles. One of these styles, the nesting style, is further sub-divided into five derived forms and the demountable style is sub-divided into two derived forms. EN 12674-1 gives details of how these styles differ. EN 12674-2 gives methods of measuring working dimensions and aspects of design that manufacturers need to be aware of. Test methods are given in EN 12674-3 which are supported by performance levels in this European Standard, which take account of the normal static and dynamic loads applied in use.

This European Standard specifies minimum levels of performance for critical tests, in particular with reference to safety. Certain tests which are related only to longevity, quality control or need development are optional and if carried out may be subject to agreement between manufacturer and user. Tests are applied to fully assembled roll container and dolly specimens as indicated in Table 1. Dismantled or nested roll containers are not subjected to testing; however, empty dollies stacked ready for use, storage or transit are to be subjected to normative testing in order to determine a safe number of stacked units.

In order to calculate applied test loads a nominal safe working load (SWL) of 250 kg is assumed in this European Standard for every specimen. The value of 250 kg is not a normative level and may be reduced or increased by the testing body in collaboration with the specimen supplier/manufacturer. However, if different, the level used should be clearly stated in the test report.

1 Scope

This European Standard specifies appropriate tests and levels of performance for roll containers and dollies manufactured in all materials, assembled for use and stacked for storage when tested in accordance with EN 12674-3.

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 12674-1:1999, *Roll containers — Part 1: Terminology*

EN 12674-2:2001, *Roll containers — Part 2: General design and safety principles*

EN 12674-3:2004, *Roll containers — Part 3: Test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12674-1:1999 and the following apply.

3.1
line of tilt XX
axis in the horizontal plane about which an unstable roll container or dolly will eventually topple

NOTE Shown as axis XX in Figure 2 of EN 12674-3:2004.

3.2
angle of tilt (alpha) α
angle measured against the major horizontal axis of the length or width of the roll container and the line of tilt

NOTE 1 Shown in Figure 2 of EN 12674-3:2004.

NOTE 2 Length and width are defined in 4.1 of EN 12674-2:2001.

3.3
angle of inclination – (beta) ß
angle in a vertical plane, normal to the line of tilt, at which the roll container becomes unstable and topples sideways

NOTE Shown in Figures 1a and 1b of EN 12674-3:2004.

3.4
geometric centre
centre point in plan elevation generated by the intersection of two imaginary lines from the opposite internal corners of the base

3.5
vertical axis
central axis of a roll container or dolly passing through the geometric centre

3.6
ultimate load
highest load sustained during a test by a specimen before collapse or failure

3.7
safe working load (SWL)
maximum permissible load in kg to be carried by a particular design of roll container or dolly during its service life

4 Sampling of roll containers to be tested

4.1 Sequence of tests

All tests are independent of each other and may be carried out in any order. Results shall be listed in identical order to tests listed in this European Standard. A new untested or undamaged specimen or component shall be used in each test. All tests other than those referred to in 5.1.2 and 5.10.2 are prototype tests and may therefore result in destruction or damage to the specimen.

Unless otherwise stated by the roll container or dolly supplier/manufacturer and in order to calculate applied test loads a nominal safe working load (SWL) of 250 kg is assumed for every specimen. The value of 250 kg SWL is not a normative level and may be reduced or increased by the testing body in collaboration with the specimen supplier/manufacturer. However, if modified, the SWL level used shall be clearly stated in the test report.

4.2 Applicability of normative tests

The following tests shall be applied to fully assembled roll container and dolly specimens where indicated in Table 1. Some tests are conducted on empty specimens and some with load as specified. Where specific performance requirements relating to individual tests apply, they are given in Clause 5.

Stacked dollies and dismantled stacked roll container bases intended for stacking shall be subjected to normative stability testing as detailed in 5.1.3.

Dismantled or nested roll containers are not subjected to normative testing.

Table 1 — Applicability of tests

Test in EN 12674-3		Dolly		Fully assembled roll container all types	
		Dummy load	Unloaded	Dummy load	Unloaded
4.2.1	Stability	✓✓✓✓	✓ [a]	✓✓✓✓	✓✓✓✓
4.2.2	Diagonal	-	✓✓ [b]	-	✓✓ [b]
4.2.3	Side	-	-	-	✓
4.2.4	Side to base	-	-	-	-
4.2.5	Castor	-	✓✓ [c]	-	✓✓ [c]
4.2.6	Floor UDL	-	-	-	-
4.2.7	Impact	-	-	-	-
4.2.8	Hazard	-	✓✓ [d]	-	✓✓ [d e]
4.2.9	Free fall	-	-	✓	-
4.2.10	Rolling	✓✓✓✓	-	✓✓✓✓	-
4.2.11	Stacking	-	-	-	-
4.2.12	Fork lift	-	-	-	-
4.3.1	Side infill	-	-	-	-
4.3.2	Infill/infill	-	-	-	-
4.3.3	Frame infill	-	-	-	-
4.3.4	Strap	-	-	-	-

✓ = this represents one test

Only where tests are marked ✓ shall specimens be subjected to this test, where marked ✓✓ subjected to two tests e.g. one side, one end, etc.

[a] Test when dollies are stacked empty.
[b] Each diagonal to be tested separately using the same specimen.
[c] One test at each end, 2 tests in total.
[d] Two tests, one side and one end test.
[e] Neither A-frame nor V-frame shall be subjected to this test.

Optional tests

Tests in 4.3 of EN 12674-3:2004 are optional.

Tests in Annex A of EN 12674-3:2004 are optional.

5 Performance requirements – normative tests

5.1 Stability tests (4.2.1 of EN 12674-3:2004)

5.1.1 General

NOTE 1 Where this European Standard test protocol differs from EN 12674-3:2004 then this European Standard should take precedence.