SLOVENSKI STANDARD
SIST EN 12674-4:2015

01-julij-2015

Nadomešča:
SIST EN 12674-4:2007

Kontejnerji s kolesi - 4. del: Zahtevane lastnosti

Roll containers - Part 4: Performance requirements

Rollbehälter - Teil 4: Leistungsanforderungen

Conteneurs à roulettes - Partie 4: Exigences de performances

Ta slovenski standard je istoveten z: EN 12674-4:2015

ICS:

55.180.10 Večnamenski kontejnerji General purpose containers

SIST EN 12674-4:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12674-4

April 2015

ICS 55.180.10

Supersedes EN 12674-4:2006

English Version

Roll containers - Part 4: Performance requirements

Conteneurs à roulettes - Partie 4: Exigences de performances

Rollbehälter - Teil 4: Leistungsanforderungen

This European Standard was approved by CEN on 5 March 2015.

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

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Foreword

This document (EN 12674-4:2015) 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of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12674-4:2006.

The only technical change since the latest edition concerns the following point:

— modifications in the wording of the second paragraph in 5.2.

This European Standard is part of a series of four standards for roll containers and dollies. 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, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the 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 Part 4, 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 need 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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1 to entry: Shown as axis XX in EN 12674-3:2004, Figure 2.

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 to entry: Shown in EN 12674-3:2004, Figure 2.

Note 2 to entry: Length and width are defined in EN 12674-2:2001, 4.1.

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 1 to entry: Shown in EN 12674-3:2004, Figure 1a and Figure 1b.

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 EN 12674-3:2004, 4.3 are optional.

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