SLOVENSKI STANDARD
SIST EN 13047:2001

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Embalaģa - Upogibne koniļaste kovinske tube - Mere in odstopanja

Packaging - Flexible conical metallic tubes - Dimensions and tolerances

Packmittel - Konische Metalltuben - Maße und Grenzabmaße

Emballage - Tubes souples métalliques coniques - Dimensions et tolérances

Ta slovenski standard je istoveten z: **EN 13047:2000**

ICS:

55.120 Ploļ evinke. Tube Cans. Tins. Tubes

SIST EN 13047:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 13047

July 2000

ICS 55.120

English version

Packaging - Flexible conical metallic tubes - Dimensions and tolerances

Emballage - Tubes souples métalliques coniques - Dimensions et tolérances

Packmittel - Konische Metalltuben - Maße und Grenzabmaße

This European Standard was approved by CEN on 15 June 2000.

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

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Contents

Foreword

This European Standard 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of an identical text or by endorsement, at the latest by January 2001, and conflicting national standards shall be withdrawn at the latest by January 2001.

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.

It is based on the professional recommendations of the European Tube Association (ETA).

1 Scope

This standard specifies the diameters, lengths, wall thicknesses and shoulder thicknesses and other geometry characteristics of conical collapsible metallic tubes. It also specifies the way in which these tubes should be stacked together by the manufacturer.

It is applicable to tubes used for packing pharmaceutical, cosmetic, hygiene, food and other domestic and industrial products.

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 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 (including amendments).

ISO 209-1	Wrought aluminium and aluminium alloys - Chemical composition and forms of products - Part 1: Chemical composition
EN ISO 11683	Packaging - Tactile warnings of danger – Requirements (ISO 11683:1997)
EN 12374	Packaging - Flexible tubes – Terminology

3 Terms and definitions

For the purposes of this standard the terms and definitions in EN 12374 and the following apply:

3.1
nominal diameter, *D*
diameter ***d1***, of the tube measured at the shoulder (see Figure 1).

3.2
cone angle, β
angle of the body of the tube, in degrees.

3.3
displacement, *a*
distance between two locked tubes.

3.4
nominal length, *L*
length l1, measured between the shoulder and the open end of the tube body (see Figure 1).

3.5
thickness of the sleeve, S_1
thickness of the body wall of the tube.

3.6
thickness of the shoulder wall, S_2
thickness of the wall, measured at the shoulder.

3.7
play between tubes, *e*
free space between the bodies of two interlocked tubes (see Figure 1).

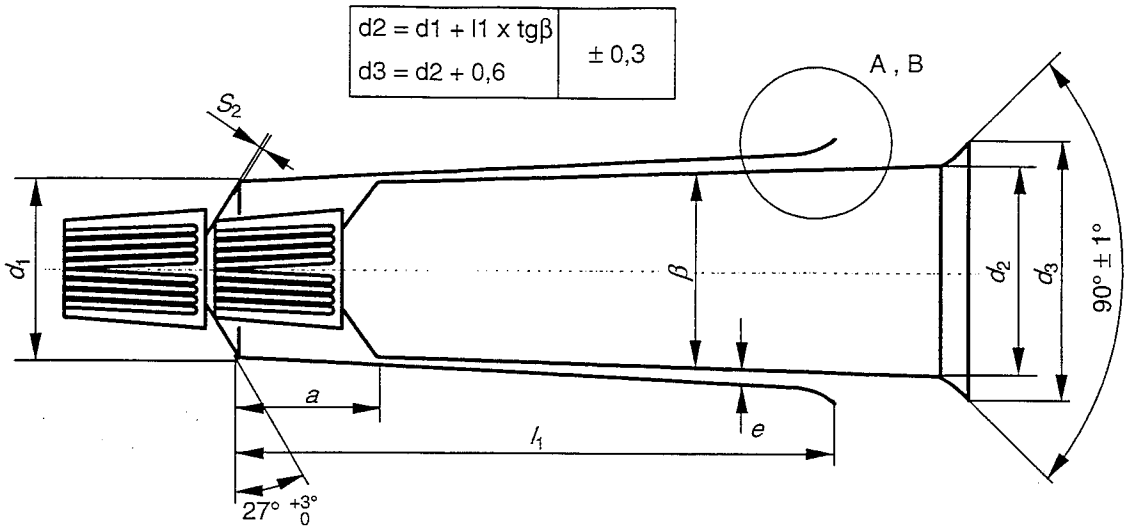

Figure 1 — Conical tubes

4 Dimensions

All tubes dimensions shall be in accordance with table 1.

NOTE The range of conifying angles shown in table 1 may be increased, following prior agreement between customer and supplier.

Table 1 — Dimensions (measurements in mm)

	Nominal diameter	Cone angle	Displace-ment	Nominal length	Thickness of sleeve		Thickness of shoulder wall		Play between tubes
Nominal Diameter ∅	d_1 $^{+0,1}_{-0,2}$	β^{0}_{-4}	a ~	$l_{1\,Max}$ (1) ± 0,8	S_1	Tolerance	S_2	Tolerance	e ~
19	19	1°24' 1°16' 1°08'	19,5 21,5 23,5	108 120 120	0,08	+ 0,03 - 0,01	0,4	+ 0,2 - 0	0,12
22	22	1°24' 1°16' 1°12'	19,5 21,5 23,5	126 135 135					0,13
25	25	1°28' 1°20' 1°12' 1°06'	19,5 21,5 23,5 26,0	136 145 145 145	0,10		0,5	+ 0,3 - 0	
28	28	1°32' 1°24' 1°16' 1°10'	19,5 21,5 23,5 26,0	147 160 165 165					0,14
30	30	1°36' 1°28' 1°20' 1°12'	19,5 21,5 23,5 26,0	150 164 175 175		+ 0,04 - 0,01			
32	32	1°40' 1°32' 1°24' 1°14'	19,5 21,5 23,5 26,0	154 168 175 175			0,6		0,15
35	35	1°44' 1°36' 1°28' 1°20'	19,5 21,5 23,5 26,0	162 175 175 175	0,12				0,16
38	38	1°40' 1°32' 1°20'	21,5 23,5 26,0	182 194 194					
40	40	1°44' 1°32' 1°24'	21,5 23,5 26,0	185 195 195			0,7		0,17
45	45	1°48' 1°40' 1°32' 1°20'	21,5 23,5 26,0 29,0	195 195 195 195					0,19

1) The length of the tube body l_1 refers to a maximum possible extension of 14%