SLOVENSKI STANDARD
SIST EN 1123-2:2007+A1:2007

01-december-2007

Vzdolžno varjene jeklene cevi in spojniki, vroče galvanizirani, z obojko, za sisteme za odpadno vodo - 2. del: Mere

Pipes and fittings of longitudinally welded hot-dip galvanized steel tube with spigot and socket for waste water systems - Part 2: Dimensions

Rohre und Formstücke aus längsnahtgeschweißtem, feuerverzinktem Stahlrohr mit Steckmuffe für Abwasserleitungen - Teil 2: Maße

Tubes et raccords, soudés longitudinalement en acier galvanisé a chaude, a manchon enfichable, pour réseaux d'assainissement - Partie 2: Dimensions

Ta slovenski standard je istoveten z: EN 1123-2:2006+A1:2007

ICS:

77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use
93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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English Version

Pipes and fittings of longitudinally welded hot-dip galvanized steel tube with spigot and socket for waste water systems - Part 2: Dimensions

Tubes et raccords, soudés longitudinalement en acier galvanisé à chaude, à manchon enfichable, pour réseaux d'assainissement - Partie 2: Dimensions

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This European Standard was approved by CEN on 13 October 2006 and includes Amendment 1 approved by CEN on 23 August 2007.

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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 CEN Management Centre has the same status as the official versions.

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

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Ref. No. EN 1123-2:2006+A1:2007: E

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Foreword

This document (EN 1123-2:2006+A1:2007) has been prepared by Technical Committee CEN/TC 165 “Waste water engineering”, 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of an identical text or by endorsement, at the latest by March 2008, and conflicting national standards shall be withdrawn at the latest by March 2008.

This document supersedes [A1] EN 1123-2:2006 [A1].

This document includes Amendment 1, approved by CEN on 2007-08-23.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

This document on pipes and fittings of longitudinally welded hot-dip galvanized steel pipe with spigot and socket for waste water systems consists of the following Parts:

— Part 1: Requirements, testing, quality control;

— Part 2: Dimensions

— Part 3: Dimensions and special requirements for vacuum drainage systems and for drainage systems in shipbuilding

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, 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 the United Kingdom.

Introduction

Pipes and fittings of longitudinally welded hot-dip galvanized steel pipes with spigot and socket for waste water systems as specified in this European Standard are used in gravity drainage systems in buildings. For vacuum drainage systems and for drainage systems in shipbuilding, it was necessary to specify additional requirements and further dimensional specifications for components and joints used in these systems. Components specified in this EN 1123-3 are used for vacuum drainage systems and for drainage systems in shipbuilding.

1 Scope

This European Standard applies to pipes and fittings of longitudinally welded hot-dip galvanized steel pipes with spigot and socket for waste water systems. It specifies dimensions and tolerances for pipes, fittings, pipe connectors and seals and establishes a system of designations for the different pipe and fitting types that conform to the stated requirements. This standard is only valid in connection with EN 1123-1. This standard does not apply to the marking of products. EN 1123-1 applies to the marking.

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 295 (all Parts), *Vitrified clay pipes and fittings and pipe joints for drains and sewers*

EN 877, *Cast iron pipes and fittings, their joints and accessories for the evacuation of water from buildings — Requirements, test methods and quality assurance*

EN 1123-1, *Pipes and fittings of longitudinally welded hot-dip galvanized steel pipes with spigot and socket for waste water systems — Part 1: Requirements, testing, quality control*

EN 1329-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system*

EN 1451-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polypropylene (PP) —Part 1: Specifications for pipes, fittings and the system*

EN 1453-1, *Plastics piping systems with structured-wall pipes for soil and waste discharge (low and high temperature) inside buildings — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes and the system*

EN 1455-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Acrylonitrile-butadiene-styrene (ABS) — Part 1: Requirements for pipes, fittings and the system*

EN 1519-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system*

EN 1565-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Styrene copolymer blends (SAN+PVC) — Part 1: Specifications for pipes, fittings and the system*

EN 1566-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Chlorinated poly(vinyl chloride) (PVC-C) Part 1: Specifications for pipes, fittings and the system*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1123-1:1999 apply.

4 Symbols and abbreviations

DN/ID	Nominal size with regard to the inside diameter
DN/OD	Nominal size with regard to the outside diameter
d	Diameter
t	Socket depth
s	Wall thickness
l	Effective length
r	Radius
α	Angle
t_5	Least insertion depth
e	Off-set dimensions (shift)

5 Dimensions

5.1 General and tolerances

The dimensions given shall be followed. Where no dimensions are given in this European Standard, tolerances for linear dimensions shall be followed according to Table 1, tolerances for radii shall be followed according to Table 2, tolerances for angular dimensions referring to the smaller side length shall be followed according to Table 3 and tolerances for elastomer parts shall be followed according to Table 4.

Table 1 — Tolerances for linear dimensions

Dimensions in millimetres

Dimensional range	Tolerance
0 to 300	±5
more than 300	±8

Table 2 — Tolerances for radii

Dimensions in millimetres

Dimensional range	Tolerance
> 26 to 181	±3
> 181 to 378	±4
> 378 to 457	±5

A1 Table 3 — Tolerances for angular dimensions referring to the smaller side length A1

Dimensions in millimetres

Side length mm	Tolerance °
> 10 to 120	±3
> 120 to 400	±2
> 400	±1,5

Table 4 — Tolerances for elastomer parts

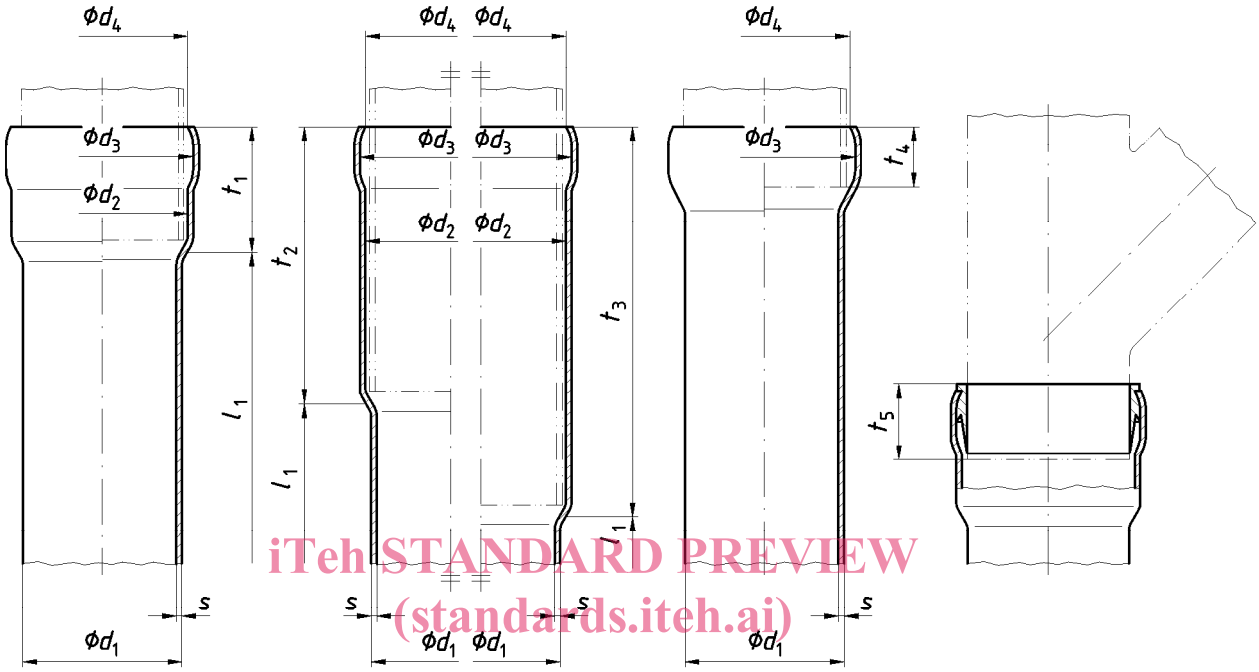
Dimensions in millimetres

Range of nominal size	Tolerance	
	Form bound (F) %	Form fitting bound (C)
> 25 to 40	±0,6	±1,0
> 40 to 63	±0,8	±1,3
> 63 to 100	±1,0	±1,6
> 100 to 160	±1,3	±2,0
> 160	±0,8	by agreement with the manufacturer of the components

5.2 Sockets

The socket dimensions according to Figure 1 shall conform to Table 5. Fittings are generally fabricated with socket type 1 A if the designation of the fitting does not specify the socket type.

Dimensions not specified shall be chosen appropriately.



Socket type 1 A	Socket type 2 A/3 A	Socket type 0,5 A	Joint with ring seal socket
Standard socket	Long socket	Short socket[1)]	

Figure 1 — Socket types

[1)] For use of the short socket, national regulations should be taken into account

Table 5 — Socket dimensions

Dimensions in millimetres

Nominal size DN/ID	Type	d_1[a]	s[b]	Socket dimensions									
				d_2	d_3	d_4	Tolerances for d_1 to d_4	t_1	t_2	t_3	t_4 min	t_5[c]	Tolerances for t_1 to t_4
40		42	1,5 ± 0,15	45	48	45	0,6	30	70	100	16	20	$^{+4}_{-2}$
50		53	1,5 ± 0,15	56	60	56	± 0,6	38	90	130	19	28	$^{+4}_{-2}$
70		73	1,6 ± 0,16	76	81	76	±0,7	55	120	175	27	35	$^{+4}_{-2}$
80	A	89	1,6 ± 0,16	92	99	92	±0,9	60	130	190	31	40	$^{+4}_{-2}$
80	B	89	1,8 ± 0,18	92	99	92	±0,9	60	130	190	31	40	$^{+4}_{-2}$
100		102	2,0 ± 0,20	106	114	107	±1,0	70	150	220	38	45	$^{+4}_{-2}$
125		133	2,5 ± 0,25	138	147	140	±1,3	75	160	235	41	50	$^{+4}_{-2}$
150		159	2,5 ± 0,25	164	176	168	±1,6	80	170	250	46	55	$^{+4}_{-2}$
200		219	3,0 ± 0,35	224	241	228	±2,2	120	250	370	76	85	$^{+4}_{-2}$
250	A	273	3,0 ± 0,36	280	298	284	±2,7	130	270	400	90	100	$^{+5}_{-3}$
250	B	273	4,0 ± 0,45	280	298	284	±2,7	130	270	400	90	100	$^{+5}_{-3}$
300	A	324	3,0 ± 0,36	331	350	336	±3,2	130	270	400	90	100	$^{+5}_{-3}$
300	B	324	4,0 ± 0,45	331	350	336	±3,2	130	270	400	90	100	$^{+5}_{-3}$

a Pipe ends slightly retracted.

b The wall thickness data refer to the ungalvanized pipe.

c Installation instructions only (necessary least insertion depth for tightness of connection) — except short socket.

5.3 Pipes

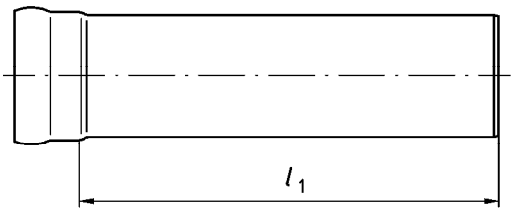
5.3.1 General

The effective length of pipes shall comply with Table 6 or Table 7.

If the pipes have an additional corrosion protection (P) according to EN 1123-1, this shall be added to the designation.

5.3.2 Pipe with one socket — Shape B 1

Type A (DN/ID 40 to DN/ID 200)



Type B (DN/ID 250 and DN/ID 300)

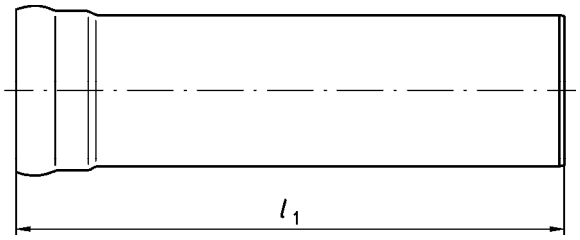


Figure 2 — Shape B 1

Designation of a drainage steel pipe (B 1) with standard socket (1 A) of nominal size DN/ID 100 with an effective length l_1 = 1 000 mm

Pipe EN 1123-2 — B 1 — 1 A — 100 —1000

Table 6 — Effective length of pipes (l_1)

Dimensions in millimetres

Nominal size DN/ID	**Effective length** $l_1 \pm 5$			**Effective length** [A1] $l_1 \pm 8$ [A1]				
40	250	500	750	1 000	1 500	2 000	3 000	4 000
50								
70								
80								
100								
125								
150								
200								
250	—	500	750	1 000	1 500	2 000	3 000	4 000
300								

5.3.3 Pipe with two sockets — Shape B 2

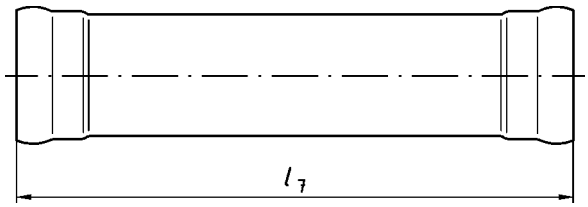


Figure 3 — Shape B 2

Designation of a drainage steel pipe (B 2) with standard socket (1 A) of nominal size DN/ID 100 and an effective length l_7 = 1 000 mm

Pipe EN 1123-2 — B 2 — 1A — 100 — 1000

Table 7 — Effective length of pipes (l_7)

Dimensions in millimetres

Nominal size DN/ID	**Effective length** [A1] l_7 ± 8 [A1]							
40	250	500	750	1 000	1 500	2 000	3 000	4 000
50								
70								
80								
100	—							
125								
150		—						
200			—					

5.4 Bends

5.4.1 General

If required, type (A) or (B) and the additional corrosion protection (P) according to EN 1123-1 shall be added to the designation (see 5.3).

5.4.2 Bend with large radius — Shape C 1

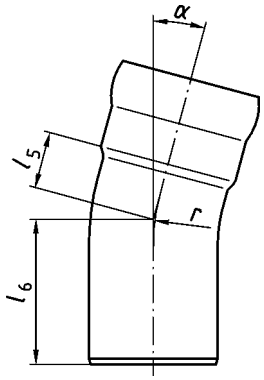


Figure 4 — Shape C 1

Designation of a bend (C 1) of nominal size DN/ID 100 and α = 45° of type (A):

Bend EN 1123-2 — C 1 — 100 — 45 A

Table 8 — Dimensions of bends with large radius

Dimensions in millimetres

Nominal size DN/ID	Type	α =15°			α = 30°			α = 45°			α= 70°			α = 87°		
		r	l_5	l_6	r	l_5	l_6	r	l_5	l_6	r	l_5	l_6	r	l_5	l_6
40	—	67,5	37	67	67,5	46	76	67,5	56	86	67,5	75	105	67,5	92	122
50	—	82,5	53	81	82,5	64	92	82,5	76	104	82,5	100	128	82,5	120	148
70	—	117,5	50	89	117,5	66	105	117,5	83	122	117,5	118	157	117,5	146	185
80	A	133,5	68	98	133,5	86	116	133,5	104	135	133,5	144	173	133,5	177	207
	B	—	25	85	114,5	56	116	114,5	72,5	132,5	114,5	105	165	114,5	134	194
100	A	70	34	104	70	44	114	70	54	124	70	74	144	70	91	161
	B	150	45	115	150	65	135	150	87	157	150	130	200	150	167	237
125	A	—	37	112	90	45	118	90	58	131	90	75	157	90	97	179
	B	200	51	126	200	79	154	200	108	183	200	165	240	200	215	290
150	A	—	40	120	105	61	148	105	77	164	105	107	194	105	133	220
	B	225	55	135	225	60	140	225	83	162	225	125	205	225	170	250
A1 200	A	—	45	165	—	45	165	305	166	270	305	254	360	305	330	435
	B	—	45	165	203	94	199	203	124	229	203	142	287	203	243	348 A1
250	A	—	100	230	—	153	283	254	155	285	254	228	358	254	304	434
	B	—	102	232	—	153	283	381	209	339	381	318	448	381	413	543
300	A	—	110	240	—	173	303	305	176	306	305	264	394	305	355	485
	B	457	112	242	457	173	303	457	239	369	457	370	500	457	484	614