SLOVENSKI STANDARD
SIST EN 10226-2:2005

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Cevni navoji za zveze, ki tesnijo z navoji ï 2. del: Koniļ ni zunanji navoji in koniļ ni notranji navoji ï Mere, tolerance in oznaļ evanje

Pipe threads where pressure tight joints are made on the threads - Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation

Rohrgewinde für im Gewinde dichtende Verbindungen - Teil 2: Kegelige Außengewinde und kegelige Innengewinde - Maße, Toleranzen und Bezeichnung

Filetages de tuyauteries pour raccordement avec étanchéité par le filetage - Partie 2: Extérieurs coniques et filetages intérieurs coniques - Dimensions, tolérances et désignation

Ta slovenski standard je istoveten z: **EN 10226-2:2005**

ICS:

21.040.30	Posebni navoji	Special screw threads

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EUROPEAN STANDARD

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English Version

Pipe threads where pressure tight joints are made on the threads - Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation

Filetages de tuyauterie pour raccordement avec étanchéité dans le filet - Partie 2: Filetages extérieurs coniques et filetages intérieurs coniques - Dimensions, tolérances et désignation

Rohrgewinde für im Gewinde dichtende Verbindungen - Teil 2: Kegelige Außengewinde und kegelige Innengewinde - Maße, Toleranzen und Bezeichnung

This European Standard was approved by CEN on 27 June 2005.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Foreword

This document (EN 10226-2:2005) has been prepared by Technical Committee ECISS/TC 29 “Steel tubes and fittings for steel tubes”, the secretariat of which is held by UNI/UNSIDER.

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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document is based, with editorial modifications on ISO 7-1 "Pipe threads where pressure-tight joints are made on the threads - Part 1: Dimensions, tolerances and designation". Pipe threads to this document are dimensionally identical to and fully interchangeable with pipe threads to ISO 7-1.

This document has been prepared in three parts. Parts 1 and 2 reflect the two thread jointing systems in regular use in Europe and Worldwide - Part 1 details taper external and parallel internal pipe threads, and Part 2 details taper external and taper internal pipe threads. Part 3 will provide requirements for the gauging of pipe threads conforming to Parts 1 and 2.

The common requirements for the taper external pipe thread are given in Part 1 and in Part 2, so as to present the complete thread jointing system in each part.

Components having pipe threads produced to the dimensions and tolerances given in this European Standard can be assembled to give safe and effective pressure tight joints providing proper assembly techniques are used. The techniques used to assemble threaded joints are dependent on a number of factors including the internal thread (parallel or taper), the quality of the mating threads, the materials of the components being connected, the thread sealant or jointing compound used and the assembly torque.

Because of the different assembly techniques used for the taper / parallel and taper / taper systems, it is recommended that mixing of components having parallel internal threads and taper internal threads is avoided in the same piping system.

Relevant EN product or application standards will normally specify whether parallel and /or taper internal threads are permitted for these products or applications. Users should select the internal thread type to suit their product or application requirements.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom

1 Scope

This European Standard specifies the requirements for thread form, dimensions, tolerances and designation for jointing pipe threads, sizes 1/16 to 6 inclusive, for joints made pressure-tight by the mating of the threads. These threads are taper external and taper internal and are intended for use with pipes suitable for threading and for valves, fittings or other pipeline equipment interconnected by threaded joints.

An appropriate thread sealant or jointing compound should be used on the thread to ensure pressure-tight joints.

NOTE 1 Threaded joints using taper external threads and parallel internal threads are detailed in EN 10226-1.

NOTE 2 The requirements for taper external threads are identical in EN 10226-1 and EN 10226-2.

NOTE 3 For pipe threads where pressure-tight joints are not made on the threads see EN ISO 228-1.

NOTE 4 EN 10226-3 gives details of recommended gauging systems for the verification of thread dimensions and thread form.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10226-3, *Pipe threads where pressure-tight joints are made on the threads — Part 3: Verification by means of limit gauges*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply (see also Figures 2 and 3).

NOTE For consistency and clarity, common terms and definitions have been adopted for EN 10226-1 and EN 10226-2. Consequently some definitions may include terms that seem inappropriate to this document.

3.1
gauge diameter
major diameter of the thread, whether external or internal, at the gauge plane

3.2
major cone
imaginary cone, which just touches the crests of a taper external thread or the roots of a taper internal thread

3.3
gauge plane
plane, perpendicular to the axis of the taper thread, at which the major cone has the gauge diameter

NOTE 1 For external threads the gauge plane is located at a distance equal to the gauge length from the small end of the thread.

NOTE 2 For taper internal threads; the gauge plane is located at a distance of half pitch behind the face of the threaded work piece. This distance has been agreed so that the position of the gauge plane on taper internal threads is consistent with parallel internal threads in EN 10226-1.

3.4
gauge length
on an external thread, the distance from the gauge plane to the small end of the thread, measured parallel to the axis

3.5
reference plane
visible surface of the internally and externally threaded parts, which facilitates the reading of the gauge when the thread is inspected. For internal threads it is the face of the internally threaded part, for external threads it is the small end of the externally threaded part

3.6
complete thread
part of the thread that is fully formed at both crest and root

NOTE When there is a chamfer at the start of the thread not exceeding one pitch in length, this is included in the length of the complete thread.

3.7
incomplete thread
part of the thread that is fully formed at the root, but truncated at the crest by its intersection with the cylindrical surface of the product

3.8
washout thread
part of the thread that is not fully formed at the root

NOTE The washout thread is produced by the bevel at the start of the threading tool.

3.9
useful thread

complete thread plus incomplete thread, excluding the washout thread

NOTE In practice, the total length of useful external thread may be longer than is necessary depending on the production techniques used for producing the threads and the external diameter of the work piece. The provision of excessive lengths of useful external thread should be avoided.

3.10
assembly length
useful thread length beyond the gauge plane of an external thread required to provide for assembly with an internal thread at the upper limit of the tolerance. It is inclusive of the wrenching length

NOTE 1 See also 7.2.2.

NOTE 2 This term is also known as "fitting allowance".

3.11
wrenching length
useful thread length that is provided to accommodate the relative movement between the externally threaded part and the internally threaded part during the wrenching operation, following hand-tight engagement

NOTE This term is also known as "wrenching allowance".

3.12
accommodation length
distance on internally threaded work pieces, from the face of the work piece to the first obstruction, which the externally threaded work piece will encounter on assembly

4 Symbols and explanations

Symbol	Meaning
R	Designation of taper external thread
Rc	Designation of taper internal thread
p	Pitch
H	Height of the triangle of the thread profile perpendicular to the thread axis
h	= 0,640 327*P*; height of the thread profile between rounded crests and roots perpendicular to the thread axis
r	Radius of rounded crests and roots
D	Major diameter of the internal thread at the gauge plane (gauge diameter - see 3.1)
D_1	= *D* - 1,280 654 *P*; minor diameter of the internal thread at the gauge plane
D_2	= *D* - 0,640 327 *P*; pitch diameter of the internal thread at the gauge plane
d	Major diameter of the external thread at the gauge plane (gauge diameter - see 3.1)
d_1	=*d* - 1,280 654 *P*; minor diameter of the external thread at the gauge plane
d_2	=*d* - 0,640 327*P*; pitch diameter of the external thread at the gauge plane
T_1	Tolerance on the gauge length of an external thread
T_2	Tolerance for the position of the gauge plane on an internal thread
L_a	Accommodation length (see 7.2.2)
L_i	Useful thread length for internally threaded workpieces (see 7.2.2)
L_e	Useful thread length for externally threaded workpieces (see 7.2.2)

5 Dimensions

Pipe thread dimensions are given in Table 1.

6 Designation

6.1 The designation of threads according to this document shall consist of the following elements in the sequence given:

6.2 The description block shall be:

Pipe thread

6.3 The European Standard number block shall be:

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Table 1 — Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Thread size	Number of threads in 25,4 mm	Pitch	Height of thread	Diameters at gauge plane			Gauge length (external thread)					Assembly length		L_e Length of useful external thread not less than			Tolerance on position of gauge plane on internal thread	
		P	h	Major (gauge diameter)	Pitch	Minor	Nominal	Tolerance $T_1/2$		max.	min.		Turns of thread	For nominal gauge length	For maximum gauge length	For minimum gauge length	Tolerance $T_2/2$	
				$d=D$	$d_2=D_2$	$d_1=D_1$		a	Turns of thread									Turns of thread
		mm	mm	mm	mm	mm	mm	mm		mm	mm	mm[a]		mm	mm	mm	mm[a]	
1/16	28	0,907	0,581	7,723	7,142	6,561	4	± 0,9	± 1	4,9	3,1	2,5	2.3/4	6,5	7,4	5,6	± 1,1	± 1.1/4
1/8	28	0,907	0,581	9,728	9,147	8,566	4	± 0,9	± 1	4,9	3,1	2,5	2.3/4	6,5	7,4	5,6	± 1,1	± 1.1/4
1/4	19	1,337	0,856	13,157	12,301	11,445	6	± 1,3	± 1	7,3	4,7	3,7	2.3/4	9,7	11	8,4	± 1,7	± 1.1/4
3/8	19	1,337	0,856	16,662	15,806	14,950	6,4	± 1,3	± 1	7,7	5,1	3,7	2.3/4	10,1	11,4	8,8	± 1,7	± 1.1/4
1/2	14	1,814	1,162	20,955	19,793	18,631	8,2	± 1,8	± 1	10,0	6,4	5,0	2.3/4	13,2	15	11,4	± 2,3	± 1.1/4
3/4	14	1,814	1,162	26,441	25,279	24,117	9,5	± 1,8	± 1	11,3	7,7	5,0	2.3/4	14,5	16,3	12,7	± 2,3	± 1.1/4
1	11	2,309	1,479	33,249	31,770	30,291	10,4	± 2,3	± 1	12,7	8,1	6,4	2.3/4	16,8	19,1	14,5	± 2,9	± 1.1/4
1.1/4	11	2,309	1,479	41,910	40,431	38,952	12,7	± 2,3	± 1	15,0	10,4	6,4	2.3/4	19,1	21,4	16,8	± 2,9	± 1.1/4
1.1/2	11	2,309	1,479	47,803	46,324	44,845	12,7	± 2,3	± 1	15,0	10,4	6,4	2.3/4	19,1	21,4	16,8	± 2,9	± 1.1/4
2	11	2,309	1,479	59,614	58,135	56,656	15,9	± 2,3	± 1	18,2	13,6	7,5	3.1/4	23,4	25,7	21,1	± 2,9	± 1.1/4
2.1/2	11	2,309	1,479	75,184	73,705	72,226	17,5	± 3,5	± 1.1/2	21,0	14,0	9,2	4	26,7	30,2	23,2	± 3,5	± 1.1/2
3	11	2,309	1,479	87,884	86,405	84,926	20,6	± 3,5	± 1.1/2	24,1	17,1	9,2	4	29,8	33,3	26,3	± 3,5	± 1.1/2
4	11	2,309	1,479	113,030	111,551	110,072	25,4	± 3,5	± 1.1/2	28,9	21,9	10,4	4.1/2	35,8	39,3	32,3	± 3,5	± 1.1/2
5	11	2,309	1,479	138,430	136,951	135,472	28,6	± 3,5	± 1.1/2	32,1	25,1	11,5	5	40,1	43,6	36,6	±3,5	± 1.1/2
6	11	2,309	1,479	163,830	162,351	160,872	28,6	± 3,5	± 1.1/2	32,1	25,1	11,5	5	40,1	43,6	36,6	± 3,5	± 1.1/2

NOTE The main dimensions were converted into millimetres on the basis of 1 inch = 25,4 mm, beginning with the number of threads per inch, which determines the pitch *P*, the formula *h* (the height of thread) = 0,640 327 *P* and the major diameter at the gauge plane. Pitch diameter and minor diameter were then compiled by subtracting once or twice respectively the height of thread *h* from the major diameter. The nominal gauge length, the tolerances and the assembly length were directly computed. The remaining lengths given in Table 1 were obtained by subtracting or adding the tolerances or assembly length respectively to the nominal gauge length. Tolerances and assembly lengths are expressed in millimetres and in number of turns of thread.

[a] Informative tolerances, in millimetres, are obtained from the mandatory values in turns of threads by multiplying with the corresponding pitch in column 3 and rounding to the nearest 0,1 mm.