

Parallel pins with internal thread, of hardened steel or martensitic stainless steel

The European Standard EN ISO 8735:1997 has the status of a
British Standard

ICS 21.060.50

National foreword

This British Standard is the English language version of EN ISO 8735:1997. It is identical with ISO 8735:1997. It supersedes BS EN 28735:1992 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee FME/9, Bolts, nuts and accessories, to Subcommittee FME/9/6, General purpose fasteners and accessories, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

Attention is drawn to the fact that CEN and CENELEC standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN ISO title page, page 2, the ISO title page, page ii, pages 1 to 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 May 1998

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Descriptors: See ISO document

English version

Parallel pins with internal thread, of hardened steel or martensitic stainless steel

(ISO 8735:1997)

Goupilles cylindriques à trou taraudé en acier trempé et en acier inoxydable martensitique (ISO 8735:1997)

Zylinderstifte mit Innengewinde aus gehärtetem Stahl und martensitischem nichtrostendem Stahl (ISO 8735:1997)

This European Standard was approved by CEN on 18 October 1997.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

The text of the International Standard ISO 8735:1997 has been prepared by Technical Committee ISO/TC 2 “Fasteners” in collaboration with Technical Committee CEN/TC 185 “Threaded and non-threaded mechanical fasteners and accessories”, the secretariat of which is held by DIN. This European Standard supersedes EN 28735:1992.

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 May 1998, and conflicting national standards shall be withdrawn at the latest by May 1998.

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.

Endorsement notice

The text of the International Standard ISO 8735:1997 has been approved by CEN as a European Standard without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

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INTERNATIONAL
STANDARD

ISO
8735

Second edition
1997-11-15

**Parallel pins with internal thread,
of hardened steel and martensitic
stainless steel**

*Goupilles cylindriques à trou taraudé en acier trempé et
en acier inoxydable martensitique*



Reference number
ISO 8735:1997(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8735 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This second edition cancels and replaces the first edition (ISO 8735:1987), which has been technically revised.

Descriptors: Fasteners, steel products, pins (mechanics), straight pins, threaded parts, specifications, characteristics, dimensions, designation.

1 Scope

This International Standard specifies the characteristics of parallel pins with internal thread of steel, through hardened or case hardened and martensitic stainless steel, with nominal diameters d_1 from 6 mm to 50 mm inclusive.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 965-2:—¹⁾, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose bolt and nut threads — Medium quality.*

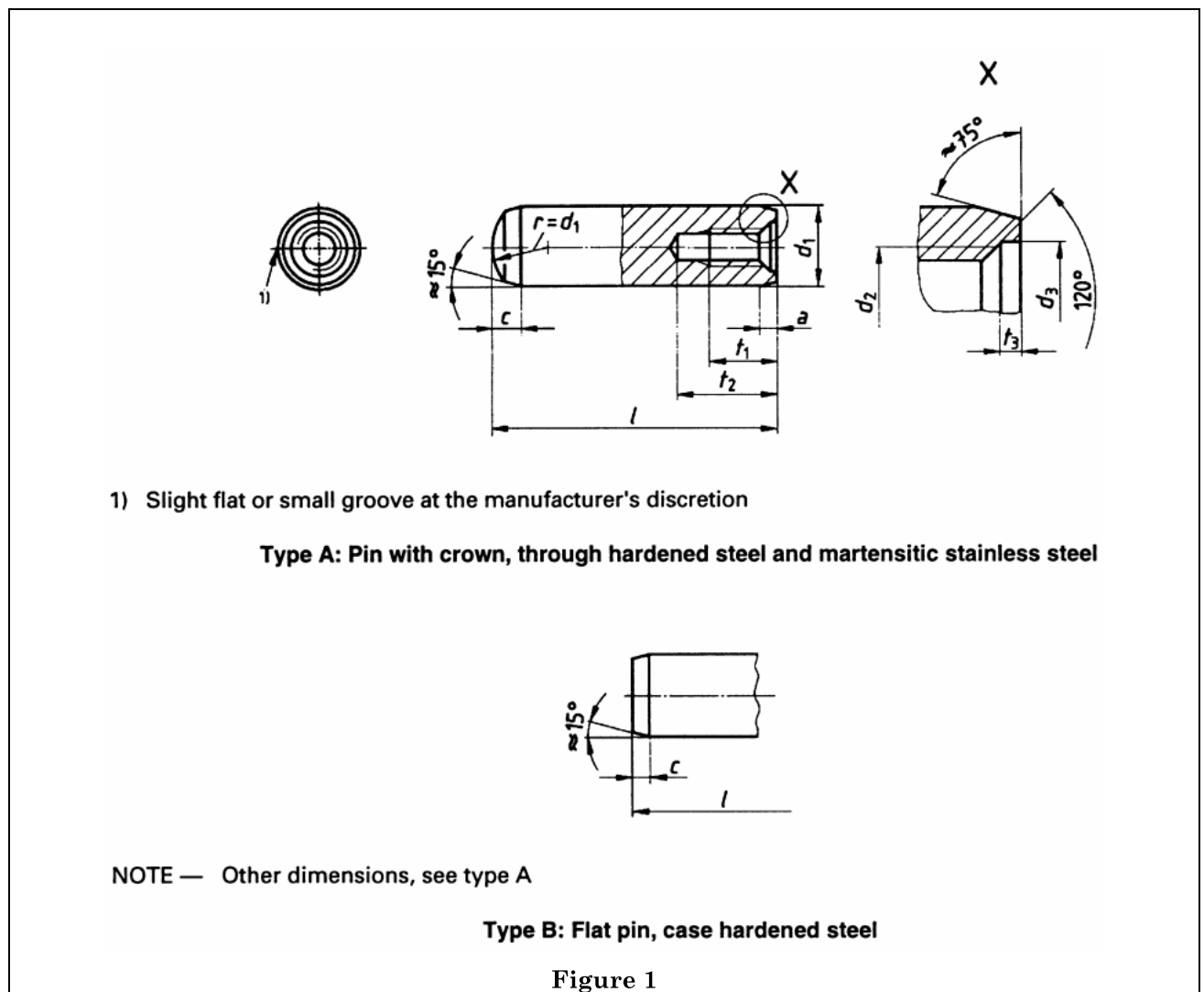
ISO 3269:1988, *Fasteners — Acceptance inspection.*

ISO 3506-1:1997, *Corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs.*

ISO 4042:—²⁾, *Fasteners — Electroplated coatings.*

3 Dimensions

See Figure 1 and Table 1.



¹⁾ To be published. (Revision of ISO 965-2:1980)

²⁾ To be published. (Revision of ISO 4042:1989)

Table 1 — Dimensions

Dimensions in millimetres

d_1	m6 ^a	6	8	10	12	16	20	25	30	40	50
a	≈	0,8	1	1,2	1,6	2	2,5	3	4	5	6,3
c		2,1	2,6	3	3,8	4,6	6	6	7	8	10
d_2		M4	M5	M6	M6	M8	M10	M16	M20	M20	M24
P^b		0,7	0,8	1	1	1,25	1,5	2	2,5	2,5	3
d_3		4,3	5,3	6,4	6,4	8,4	10,5	17	21	21	25
t_1		6	8	10	12	16	18	24	30	30	36
t_2	min.	10	12	16	20	25	28	35	40	40	50
t_3		1	1,2	1,2	1,2	1,5	1,5	2	2	2,5	2,5
l^c											
nom.	min.	max.									
16	15,5	16,5									
18	17,5	18,5									
20	19,5	20,5									
22	21,5	22,5									
24	23,5	24,5									
26	25,5	26,5									
28	27,5	28,5									
30	29,5	30,5	Range								
32	31,5	32,5									
35	34,5	35,5									
40	39,5	40,5				of					
45	44,5	45,5									
50	49,5	50,5									
55	54,25	55,75									
60	59,25	60,75									
65	64,25	65,75									
70	69,25	70,75					commercial				
75	74,25	75,75									
80	79,25	80,75									
85	84,25	85,75									
90	89,25	90,75									
95	94,25	95,75									
100	99,25	100,75							lengths		
120	119,25	120,75									
140	139,25	140,75									
160	159,25	160,75									
180	179,25	180,75									
200	199,25	200,75									

^a Other tolerances as agreed between customer and supplier.
^b P is the pitch of the thread.
^c For nominal lengths above 200 mm, steps of 20 mm.

4 Requirements and reference International Standards

See Table 2.

Table 2 — Requirements and reference International Standards

Screw thread	Metric screw thread with tolerance 6H in accordance with ISO 965-2.			
Material^a	Steel		Martensitic stainless steel	
	St		C1 in accordance with ISO 3506-1	
	Type A pin through hardened	Type B pin case hardened		
	Chemical composition limits (check analysis) %			
		either	or	Hardened and tempered to a hardness of 460 HV30 to 560 HV30
	C 0,95 to 1,1	C 0,06 to 0,13	C 0,15 max.	
Si 0,15 to 0,35	Si 0,1 to 0,4	Si 0,10 max.		
Mn 0,25 to 0,4	Mn 0,25 to 0,6	Mn 0,9 to 1,3		
P 0,03 max.	P 0,025 max.	P 0,07 max.		
S 0,025 max.	S 0,05 max.	S 0,15 to 0,35		
Cr 1,35 to 1,65		Pb 0,15 to 0,35		
	at the supplier's discretion			
Hardness: 550 HV30 to 650 HV30	Surface hardness: 600 HV1 to 700 HV1			
	Hardness at case depth 0,25 to 0,4 mm: 550 HV1 min.			
Surface	Plain, i.e. pins to be supplied in natural finish, treated with a protective lubricant, unless otherwise specified by agreement between customer and supplier.			
	If pins are surface coated appropriate plating or coating processes should be employed to avoid hydrogen embrittlement. When pins are electroplated or phosphate-coated, they shall be suitably treated immediately after plating or coating to obviate detrimental hydrogen embrittlement, although freedom from hydrogen embrittlement is not absolutely guaranteed (see ISO 4042). All tolerances shall apply prior to the application of a plating or coating.			
	Plain, i.e. pins to be supplied in natural finish.			
Surface roughness	$R_a \leq 0,8 \mu\text{m}$			
Workmanship	Pins shall be free of irregularities or detrimental defects.			
	No burrs shall appear on any part of the pin.			
Acceptability	The acceptance procedure is covered in ISO 3269.			
^a Other materials as agreed between customer and supplier.				

5 Designation

EXAMPLE 1

A through hardened steel parallel pin type A, with internal thread, with nominal diameter $d_1 = 6$ mm and nominal length $l = 30$ mm is designated as follows:

Parallel pin ISO 8735 – 6 × 30 – A – St

EXAMPLE 2

A martensitic stainless steel pin of grade C1, with internal thread, with nominal diameter $d_1 = 6$ mm and nominal length $l = 30$ mm is designated as follows:

Parallel pin ISO 8735 – 6 × 30 – C1

Annex ZA (normative)**Normative references to international publications with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 3506-1	1997	Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs	EN ISO 3506-1	1997

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