INTERNATIONAL STANDARD

ISO 8740

Second edition
1997-11-01

Grooved pins — Full-length parallel grooved, with chamfer

Goupilles cannelées à cannelures constantes sur toute la longueur débouchantes, à chanfrein

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 8740 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This second edition cancels and replaces the first edition (ISO 8740:1986), which has been technically revised.

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Grooved pins — Full-length parallel grooved, with chamfer

1 Scope

This International Standard specifies the characteristics of full-length parallel grooved pins made of steel or austenitic stainless steel with chamfer which have three equally spaced grooves impressed longitudinally on their exterior surface and a pilot to facilitate insertion, with nominal diameter, d_1, from 1,5 mm to 25 mm inclusive.

The displaced material to each side of the grooves forming an expanded diameter d_2 which is larger than the nominal diameter d_1 will cause a non-positive locking fit when these grooved pins are forced into a drilled hole equal to the nominal diameter d_1 (see clause 4).

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 3269:1988, *Fasteners – Acceptance inspection.*

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

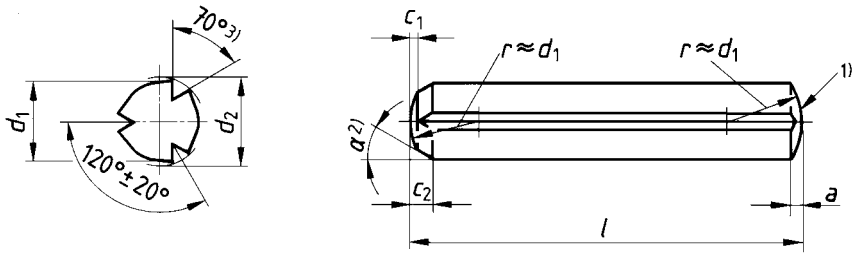
ISO 4042:–[1], *Fasteners – Electroplated coatings.*

ISO 8749:1986, *Pins and grooved pins – Shear test.*

ISO 9717:1990, *Phosphate conversion coatings for metals – Method of specifying requirements.*

3 Dimensions

See figure 1 and table 1.



1) Chamfer permissible
2) α = 15° to 30°
3) The grooving angle 70° applies only to grooved pins made from steel as shown in clause 5. The grooving angle may be modified depending on resilience of material.

Figure 1

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

Table 1 — Dimensions

Dimensions in millimetres

d_1 nom.			1,5	2	2,5	3	4	5	6	8	10	12	16	20	25
tol.			h9				h11								
c_1	≈		0,12	0,18	0,25	0,3	0,4	0,5	0,6	0,8	1	1,2	1,6	2	2,5
c_2			0,6	0,8	1	1,2	1,4	1,7	2,1	2,6	3	3,8	4,6	6	7,5
a	≈		0,2	0,25	0,3	0,4	0,5	0,63	0,8	1	1,2	1,6	2	2,5	3
Minimum shear strength, double[1] kN			1,6	2,84	4,4	6,4	11,3	17,6	25,4	45,2	70,4	101,8	181	283	444
l[2]			**Expanded diameter, d_2**[3), 4)]												
nom.	min.	max.	+0,05 0		±0,05							±0,1			
8	7,75	8,25													
10	9,75	10,25													
12	11,5	12,5													
14	13,5	14,5	1,6												
16	15,5	16,5													
18	17,5	18,5		2,15											
20	19,5	20,5			2,65										
22	21,5	22,5				3,2									
24	23,5	24,5													
26	25,5	26,5					4,25								
28	27,5	28,5						5,25							
30	29,5	30,5													
32	31,5	32,5							6,3						
35	34,5	35,5													
40	39,5	40,5								8,3	10,35				
45	44,5	45,5										12,35			
50	49,5	50,5											16,4		
55	54,25	55,75												20,5	25,5
60	59,25	60,75													
65	64,25	65,75													
70	69,25	70,75													
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													

1) Applies only to grooved pins made from steel as shown in clause 5.

2) The range of commercial lengths is between the stepped lines.

3) The expanded diameter, d_2, applies only to pins made from steel as shown in clause 5. For other materials, for example stainless steel, a reduction amount shall be subtracted from the given values and should be agreed between customer and supplier.

4) For testing d_2, a GO/NO GO ring gauge should be used.

4 Application

The diameter of the hole into which the groove pin is to be inserted shall be equal to the nominal diameter d_1 of the mating pin and to tolerance class H11.

5 Requirements and reference International Standards

See table 2.

Table 2 — Requirements and reference International Standards

Material[1)]	Steel (St)	Austenitic stainless steel
	Hardness 125 HV30 to 245 HV30	A1 in accordance with ISO 3506-1, hardness 210 HV30 to 280 HV30
Grooves	Form of groove at the discretion of the supplier	
Surface finish	Plain, i.e. pins to be supplied in natural finish treated with a protective lubricant, unless otherwise specified by agreement between customer and supplier.	Plain, i.e. pins to be supplied in natural finish.
	Preferred coatings are black oxide, phosphate coating or zinc plating with chromate conversion coating (see ISO 9717 and ISO 4042). Other coatings as agreed between customer and supplier. All tolerances shall apply prior to the application of a plating or coating.	
Workmanship	Pins shall be free of irregularities or detrimental defects.	
Shear strength test	The test shall be in accordance with ISO 8749.	
Acceptability	The acceptance procedure is covered in ISO 3269.	
1) Other materials as agreed between customer and supplier.		

6 Designation

EXAMPLE 1
A full-length parallel grooved steel pin with chamfer with nominal diameter d_1 = 6 mm and nominal length l = 50 mm is designated as follows:

Grooved pin ISO 8740 – 6 × 50 – St

EXAMPLE 2
A full-length parallel grooved austenitic stainless steel pin of grade A1 with chamfer, with nominal diameter d_1 = 6 mm and nominal length l = 50 mm is designated as follows:

Grooved pin ISO 8740 – 6 × 50 – A1

ICS 21.060.50

Descriptors: fasteners, steel products, pins (mechanics), grooved pins, specifications, characteristics, dimensions, designation.

Price based on 3 pages