INTERNATIONAL STANDARD

ISO 8750

Second edition
1997-12-01

Spring-type straight pins — Coiled, standard duty

Goupilles élastiques spiralées — Série moyenne

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 8750 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This second editon cancels and replaces the first edition (ISO 8750:1987), which has been technically revised.

Annex A of this International Standard is for information only.

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Spring-type straight pins – Coiled, standard duty

1 Scope

This International Standard specifies the characteristics of standard duty coiled spring-type straight pins made of steel or of austenitic or martensitic stainless steel, with nominal diameter, d_1, from 0,8 mm to 20 mm inclusive.

NOTE — Spring-type straight pins, coiled, heavy duty and spring type straight pins, coiled, light duty, are the subjects of ISO 8748 and ISO 8751 respectively.

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.

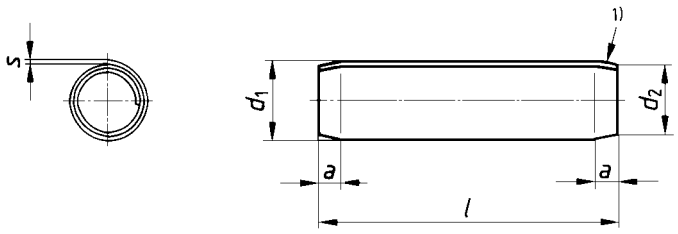
ISO 3269:1988, *Fasteners – Acceptance inspection*.

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

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

3 Dimensions

See figure 1 and table 1.



1) Swaged chamfer at both ends

Figure 1

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

Table 1 — Dimensions

Dimensions in millimetres

		nom.	**0,8**	**1**	**1,2**	**1,5**	**2**	**2,5**	**3**	**3,5**	**4**	**5**	**6**	**8**	**10**	**12**	**14**	**16**	**20**
d_1	before mounting	max.	0,91	1,15	1,35	1,73	2,25	2,78	3,30	3,84	4,4	5,50	6,50	8,63	10,80	12,85	14,95	17,00	21,1
		min.	0,85	1,05	1,25	1,62	2,13	2,65	3,15	3,67	4,2	5,25	6,25	8,30	10,35	12,40	14,45	16,45	20,4
d_2	before mounting	max.	0,75	0,95	1,15	1,4	1,9	2,4	2,9	3,4	3,9	4,85	5,85	7,8	9,75	11,7	13,6	15,6	19,6
a		≈	0,3	0,3	0,4	0,5	0,7	0,7	0,9	1	1,1	1,3	1,5	2	2,5	3	3,5	4	4,5
s			0,07	0,08	0,1	0,13	0,17	0,21	0,25	0,29	0,33	0,42	0,5	0,67	0,84	1	1,2	1,3	1,7
Minimum shear strength, double kN		[1]	0,4	0,6	0,9	1,45	2,5	3,9	5,5	7,5	9,6	15	22	39	62	89	120	155	250
		[2]	0,3	0,45	0,65	1,05	1,9	2,9	4,2	5,7	7,6	11,5	16,8	30	48	67	–	–	–
l [3]																			
nom.	min.	max.																	
4	3,75	4,25																	
5	4,75	5,25																	
6	5,75	6,25																	
8	7,75	8,25																	
10	9,75	10,25																	
12	11,5	12,5																	
14	13,5	14,5																	
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																	
28	27,5	28,5																	
30	29,5	30,5																	
32	31,5	32,5																	
35	34,5	35,5																	
40	39,5	40,5																	
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																	
75	74,25	75,75																	
80	79,25	80,75																	
85	84,25	85,75																	
95	94,25	95,75																	
100	99,25	100,75																	
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																	

1) Applies to steel and martensitic corrosion resistant steel products.

2) Applies to austenitic stainless steel products.

3) For nominal lengths above 200 mm, steps of 20 mm.

4 Application

The diameter of the hole into which the spring pin is to be inserted shall be equal to the nominal diameter d_1 of the mating pin and to tolerance class H12. For pins with nominal diameter 1,2 mm and below, the tolerance class of the hole diameter shall be H10.

5 Requirements and reference International Standards

See table 2.

Table 2 — Requirements and reference International Standards

<table>
<tr><td rowspan="5">Material[1]</td><td colspan="2">Steel</td><td>Austenitic stainless steel</td><td>Martensitic stainless steel</td></tr>
<tr><td colspan="2">St</td><td>A</td><td>C</td></tr>
<tr><td>All pin diameters</td><td>Alternative for pin diameters d_1 > 12 mm</td><td colspan="2" rowspan="2">Chemical composition limits (check analysis) %</td></tr>
<tr><td colspan="2">Chemical composition limits (check analysis) %</td></tr>
<tr><td>C ⩾ 0,64
Mn⩾ 0,60
Si ⩾0,15
Cr [2]

P ⩽ 0,04
S ⩽ 0,05

Hardened and tempered to a Vickers hardness of 420 HV30 to 545 HV30</td><td>C ⩾ 0,38
Mn ⩾ 0,70
Si ⩾ 0,20
Cr ⩾ 0,80
V ⩾ 0,15
P ⩽ 0,035
S ⩽ 0,04</td><td>C ⩽ 0,15
Mn ⩽ 2,00
Si ⩽ 1,50
Cr 16 to 20
Ni 6 to 12
P ⩽ 0,045
S ⩽ 0,03
Mo ⩽ 0,8

Cold worked</td><td>C ⩾ 0,15
Mn ⩽ 1,00
Si ⩽ 1,00
Cr 11,5 to 14
Ni ⩽ 1,00
P ⩽ 0,04
S ⩽ 0,03

Hardened and tempered to a Vickers hardness of 460 HV30 to 560 HV30</td></tr>
<tr><td>Surface finish</td><td colspan="2">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.</td><td colspan="2">Plain, i.e. pins to be supplied in natural finish</td></tr>
<tr><td>Workmanship</td><td colspan="4">Pins shall be free of irregularities or detrimental defects.

No burrs shall appear on any part of the pin.</td></tr>
<tr><td>Shear strength test</td><td colspan="4">The test shall be in accordance with ISO 8749.</td></tr>
<tr><td>Acceptability</td><td colspan="4">The acceptance procedure is covered in ISO 3269.</td></tr>
<tr><td colspan="5">1) Other materials as agreed between customer and supplier.
2) Use of Cr is optional.</td></tr>
</table>

6 Designation

EXAMPLE 1
A steel spring-type straight pin (St), coiled, standard duty, with nominal diameter d_1 = 6 mm and nominal length l = 30 mm is designated as follows:

Spring pin ISO 8750 – 6 × 30 – St

EXAMPLE 2
An austenitic stainless steel spring-type straight pin (A), coiled, standard duty, with nominal diameter d_1 = 6 mm and nominal length l = 30 mm is designated as follows:

Spring pin ISO 8750 – 6 × 30 – A

Annex A
(informative)

Bibliography

[1] ISO 8748:1997, *Spring-type straight pins – Coiled, heavy duty*.

[2] ISO 8751:1997, *Spring-type straight pins – Coiled, light duty*.

ICS 21.060.50

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

Price based on 5 pages