

# INTERNATIONAL STANDARD

**ISO**  
**8750**

Third edition  
2007-04-15

---

---

## Spring-type straight pins — Coiled, standard duty

*Goupilles élastiques spiralées — Série moyenne*

STANDARDSISO.COM : Click to view the full PDF of ISO 8750:2007



Reference number  
ISO 8750:2007(E)

© ISO 2007

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 8750:2007



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8750 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 10, *Product standards for fasteners*.

This third edition cancels and replaces the second edition (ISO 8750:1997), which has been technically revised.

STANDARDSISO.COM : Click to view the full PDF of ISO 8750:2007

[STANDARDSISO.COM](http://STANDARDSISO.COM) : Click to view the full PDF of ISO 8750:2007

## Spring-type straight pins — Coiled, standard duty

### 1 Scope

This International Standard specifies the characteristics of coiled, standard duty spring-type straight pins made of steel or of austenitic or martensitic stainless steel, with a 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 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.

ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

ISO 3269, *Fasteners — Acceptance inspection*

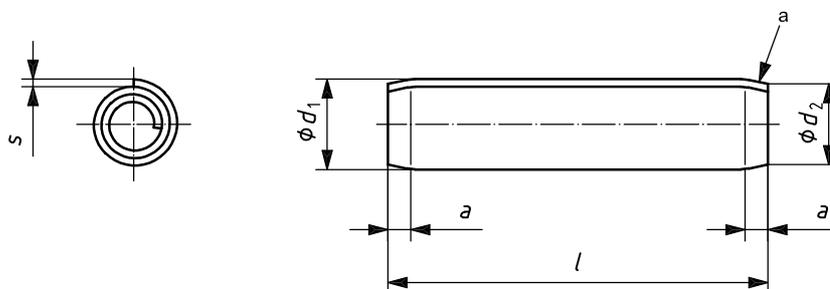
ISO 4042, *Fasteners — Electroplated coatings*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 8749, *Pins and grooved pins — Shear test*

### 3 Dimensions

See Figure 1 and Table 1.



<sup>a</sup> Swaged chamfer at both ends.

Figure 1

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	
<b>Minimum shear strength, double, kN</b>	a		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	
	b		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	—	—	—	
		<i>l<sup>c</sup></i>																		
	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																	
	26	25,5	26,5																	
	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																	
	90	89,25	90,75																	
	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																	
a	Applies to steel and martensitic corrosion-resistant steel products.																			
b	Applies to austenitic stainless steel products.																			
c	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 in accordance with ISO 286-2. For pins with a nominal diameter of 1,2 mm and below, the tolerance class of the hole diameter shall be H10 in accordance with ISO 286-2.

## 5 Requirements and reference International Standards

See Table 2.

**Table 2 — Requirements and reference International Standards**

	Steel		Austenitic stainless steel	Martensitic stainless steel
	St		A	C
	All pin diameters	Alternative for pin diameters $d_1 > 12$ mm	Chemical composition limits (chemical analysis) %	
<b>Material<sup>a</sup></b>	Chemical composition limits (chemical analysis) %		Chemical composition limits (chemical analysis) %	
	C $\geq$ 0,64 Mn $\geq$ 0,60 Si $\geq$ 0,15 Cr <sup>b</sup> P $\leq$ 0,04 S $\leq$ 0,05	C $\geq$ 0,38 Mn $\geq$ 0,70 Si $\geq$ 0,20 Cr $\geq$ 0,80 V $\geq$ 0,15 P $\leq$ 0,035 S $\leq$ 0,04	C $\leq$ 0,15 Mn $\leq$ 2,00 Si $\leq$ 1,50 Cr 16 to 20 Ni 6 to 12 P $\leq$ 0,045 S $\leq$ 0,03 Mo $\leq$ 0,8	C $\geq$ 0,15 Mn $\leq$ 1,00 Si $\leq$ 1,00 Cr 11,5 to 14 Ni $\leq$ 1,00 P $\leq$ 0,04 S $\leq$ 0,03
	Hardened and tempered to a Vickers hardness of 420 HV to 545 HV		Cold worked	Hardened and tempered to a Vickers hardness of 460 HV to 560 HV
	Hardness testing according to ISO 6507-1.			Hardness testing according to ISO 6507-1.
<b>Surface finish</b>	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 supplied in natural finish.	
	If pins are surface coated, appropriate plating or coating processes should be employed to avoid hydrogen embrittlement. Due to the risk of hydrogen embrittlement, pins should not be electroplated or phosphate-coated. If electroplating or phosphate coating is required for corrosion prevention, by agreement between customer and supplier, it is mandatory that the pins be baked immediately after plating to minimize the risk of hydrogen embrittlement, see also hydrogen embrittlement relief according to ISO 4042. Nevertheless, freedom from hydrogen embrittlement is not absolutely guaranteed.  All tolerances shall apply prior to the application of a plating or coating.			
<b>Workmanship</b>	Pins shall be free of irregularities or detrimental defects. No burrs shall appear on any part of the pin.			

Table 2 (continued)

<b>Shear strength test</b>	The test shall be in accordance with ISO 8749.
<b>Acceptability</b>	The acceptance procedure shall be in accordance with ISO 3269.
a	Other materials as agreed between customer and supplier.
b	Use of Cr is optional.

## 6 Designation

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

**Spring pin ISO 8750 - 6 × 30 - St**

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

**Spring pin ISO 8750 - 6 × 30 - A**

STANDARDSISO.COM : Click to view the full PDF of ISO 8750:2007