

Grooved pins — Third-length centre grooved

1 Scope and field of application

This International Standard specifies the characteristics of third-length centre grooved pins which have three equally spaced grooves impressed longitudinally on their exterior surface, with metric dimensions and nominal diameter, d_1 , from 1,5 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 positive locking fit when these grooved pins are forced into a drilled hole equal to the nominal diameter d_1 (see clause 4).

2 References

ISO 2081, *Metallic coatings — Electroplated coatings of zinc on iron or steel.*

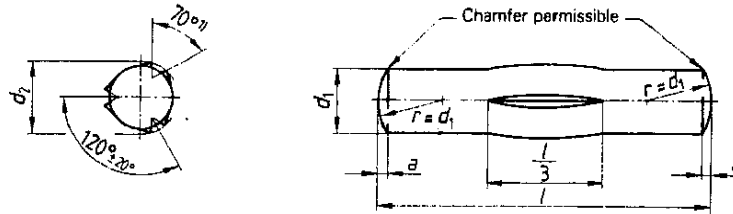
ISO 3269, *Fasteners — Acceptance inspection.*

ISO 4520, *Chromate conversion coatings on electroplated zinc and cadmium coatings.*

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

ISO 8742-1986 (E)

3 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															
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 ²⁾ kN				1,6	2,84	4,4	6,4	11,3	17,6	25,4	45,2	70,4	101,8	181	283	444							
nom.	³⁾		Expanded diameter, $d_2^{4),5)}$																				
	min.	max.	+ 0,05 0				± 0,05						± 0,10										
8	7,75	8,25	1,60																				
10	9,75	10,25																					
12	11,5	12,5																					
14	13,5	14,5	1,63	2,10	2,60	3,10																	
16	15,5	16,5																					
18	17,5	18,5																					
20	19,5	20,5	2,15	2,65	3,15	3,20	4,15	5,15															
22	21,5	22,5																					
24	23,5	24,5																					
26	25,5	26,5					4,20	5,20	6,15	8,20													
28	27,5	28,5																					
30	29,5	30,5																					
32	31,5	32,5					4,25	5,25	6,25	8,25	10,20												
35	34,5	35,5																					
40	39,5	40,5																					
45	44,5	45,5					4,30	5,30	6,30	8,30	10,20	12,25	16,25	20,25	25,25								
50	49,5	50,5																					
55	54,25	55,75																					
60	59,25	60,75					6,35	8,35	10,30	12,30	16,30	20,30	25,30										
65	64,25	65,75																					
70	69,25	70,75																					
75	74,25	75,75					8,40	10,40	12,40	16,40	20,40	25,40											
80	79,25	80,75																					
85	84,25	85,75																					
90	89,25	90,75					10,45	12,50	16,50	20,50	25,50												
95	94,25	95,75																					
100	99,25	100,75																					
120	119,25	120,75					10,40	12,50	16,50	20,50	25,50												
140	139,25	140,75																					
160	159,25	160,75																					
180	179,25	180,75																					
200	199,25	200,75																					

- 1) 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.
- 2) Applies only to grooved pins made from steel as shown in clause 5.
- 3) The range of commercial lengths is between the stepped lines.
- 4) 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.
- 5) For testing d_2 , a GO/NO GO ring gauge should be used.

ISO 8742-1986 (E)

4 Application

The bore dimension of the grooved pin hole shall be equal to the nominal diameter, d_1 , of the mating pin, and to tolerance H11.

5 Specifications and reference International Standards

Material	St = Free-cutting steel, hardness 125 to 245 HV. Other materials as agreed between customer and supplier.
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 rust-preventative lubricant, unless otherwise specified by agreement between customer and supplier. Preferred coatings are black oxide, phosphate coating or zinc plating with chromate conversion coating (see ISO 2081 and ISO 4520). Other coatings as agreed between customer and supplier. All tolerances shall apply prior to the application of a plating or coating.
Workmanship	Parts shall be uniform in quality and 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.

6 Designation

Example for the designation of a third-length centre grooved steel pin with nominal diameter, $d_1 = 6$ mm, and nominal length, $l = 50$ mm:

Grooved pin ISO 8742 - 6 × 50 - St