INTERNATIONAL STANDARD ISO 8735 : 1987 (E)

Parallel pins with internal thread, hardened

1 Scope and field of application

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

2 References

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

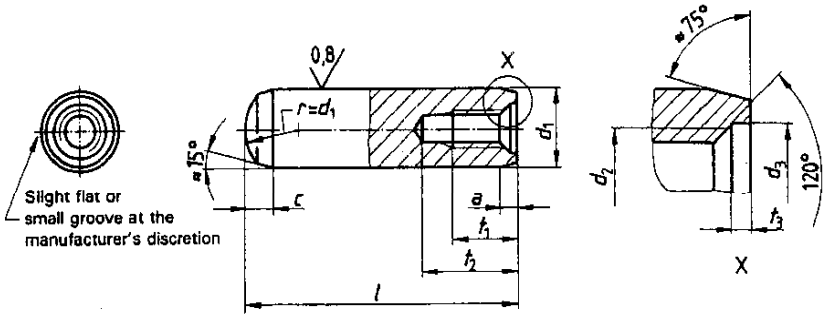
ISO 3269, *Fasteners — Acceptance inspection.*

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

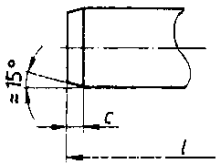
3 Dimensions

Surface roughness values in micrometres

Type A
Pin with crown, through hardened



Type B
Flat pin, case hardened



NOTE — Other dimensions, see type A.

Dimensions in millimetres

d_1		$m6^{1)}$	6	8	10	12	16	20	25	30	40	50
a		max.	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
$P^{2)}$			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
$l^{3)}$												
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										
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										

Range of commercial lengths

1) Other tolerances as agreed between customer and supplier.

2) P = pitch of the thread.

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

4 Specifications and reference International Standards

Screw thread	Metric screw thread with tolerance class 6H to ISO 965.	
Material [1]	St = steel meeting the following analyses [% (*m/m*)] :	
	Type A	**Type B** or
	C 0,95 to 1,1 Si 0,15 to 0,35 Mn 0,25 to 0,4 P 0,03 max. S 0,025 max. Cr 1,35 to 1,65	C 0,06 to 0,13 — C 0,15 max. Si 0,1 to 0,4 — Si 0,10 max. Mn 0,25 to 0,6 — Mn 0,9 to 1,3 P 0,025 max. — P 0,07 max. S 0,05 max. — S 0,15 to 0,35 Pb 0,15 to 0,35 at the supplier's option
	Hardness : 550 to 650 HV30	Surface hardness : 600 to 700 HV1 Hardness at case depth 0,25 to 0,4 mm : 550 HV1 min.
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. 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.	
	Preferred coatings are chemical black oxide or non-electrolytic zinc plating with chromate conversion coating (see 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. No burrs shall appear on any part of the pin.	
Acceptability	The acceptance procedure is covered in ISO 3269.	

1) Other materials as agreed between customer and supplier.

5 Designation

Example for the designation of a through hardened steel parallel pin, type A, with internal thread, nominal diameter d = 6 mm and nominal length l = 30 mm :

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