INTERNATIONAL STANDARD

ISO 8694

Third edition
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Tools for moulding — Shouldered ejector pins

Outillage de moulage — Éjecteurs épaulés

Reference number
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Foreword

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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 8694 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This third edition cancels and replaces the second edition (ISO 8694:1998), of which it constitutes a minor revision. In particular, the indication of surface textures has been updated in accordance with ISO 1302:2002.

Tools for moulding — Shouldered ejector pins

1 Scope

This International Standard specifies the dimensions and tolerances, in millimetres, of shouldered ejector pins with cylindrical head which are used in compression and injection moulds and in die casting dies.

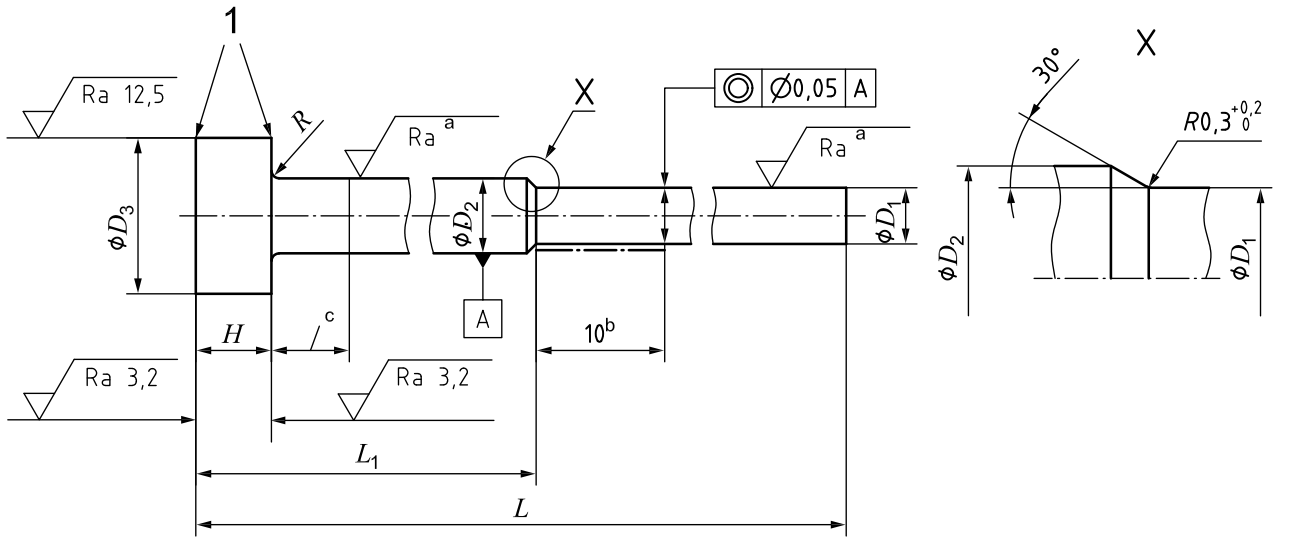
It also gives material guidelines and hardness requirements, and specifies the designation of shouldered ejector pins.

Ejector pins with cylindrical head are specified in ISO 6751; flat ejector pins are specified in ISO 8693.

2 Dimensions

The dimensions of shouldered ejector pins shall be in accordance with the indications of Figure 1 and Table 1.

Surface roughness values in micrometres



Key

1 edges without burrs

a Ra 0,8 for hot worked steel. Ra 0,4 for alloyed cold worked steel.

b The concentricity tolerance of 0,05 mm is measured over a maximum distance of 10 mm immediately after the end of the radius joining D_1 and D_2.

c Providing the ejector pin with an alternative surface roughness or a small variation on the diameter, D_2, over a certain length is permitted.

Figure 1 — Shouldered ejector pin

Table 1 — Dimensions of shouldered ejector pins

Dimensions in millimetres

D_1 g6		D_2	D_3	L $^{+2}_{0}$					H	R
				100	125	160	200	250		
				L_1 $^{-1}_{-2}$						
Standard size	**Oversize**	h11	$^{0}_{-0,2}$	50	50	63	80	100	$^{0}_{-0,05}$	$^{+0,2}_{0}$
0,8		2	4	X	X	X			2	0,2
	0,9			X	X	X				
1				X	X	X				
	1,2			X	X	X				
1,5		3	6	X	X	X	X		3	0,3
	1,6			X	X	X	X			
2				X	X	X	X	X		
	2,2			X	X	X	X	X		
2,5				X	X	X	X	X		

3 Material and hardness

Shouldered ejector pins shall be made of hot worked steel or alloyed cold worked steel. The hardness of the shaft and head shall conform to the indication of Table 2.

Table 2 — Material and hardness

Material	**Hardness**[a]	
	Shaft	Head
Hot worked steel	Min. 1 400 MPa core strength min. 950 HV 0,3	(45 ± 5) HRC hot-forged
Alloyed cold worked steel	(60 ± 2) HRC	
[a] The point at which hardness is measured is left to the manufacturer's discretion.		

4 Designation

Shouldered ejector pins according to this International Standard shall be designated by:

a) “shouldered ejector pin”;

b) reference to this International Standard, i.e. ISO 8694;

c) ejector pin diameter, D_1, in millimetres;

d) ejector pin length, L, in millimetres;

e) ejector pin material.

EXAMPLE The designation for a shouldered ejector pin of diameter D_1 = 0,8 mm, of length L = 100 mm and of hot worked steel is as follows:

Shouldered ejector pin ISO 8694 - 0,8 - 100 - Hot worked steel

Bibliography

[1] ISO 1302:2002, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

[2] ISO 6751, *Tools for moulding — Ejector pins with cylindrical head*

[3] ISO 8693, *Tools for moulding — Flat ejector pins*

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