
**Tools for moulding — Shouldered ejector
pins**

Outillage de moulage — Éjecteurs épaulés

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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 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.

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Tools for moulding — Shouldered ejector pins

1 Scope

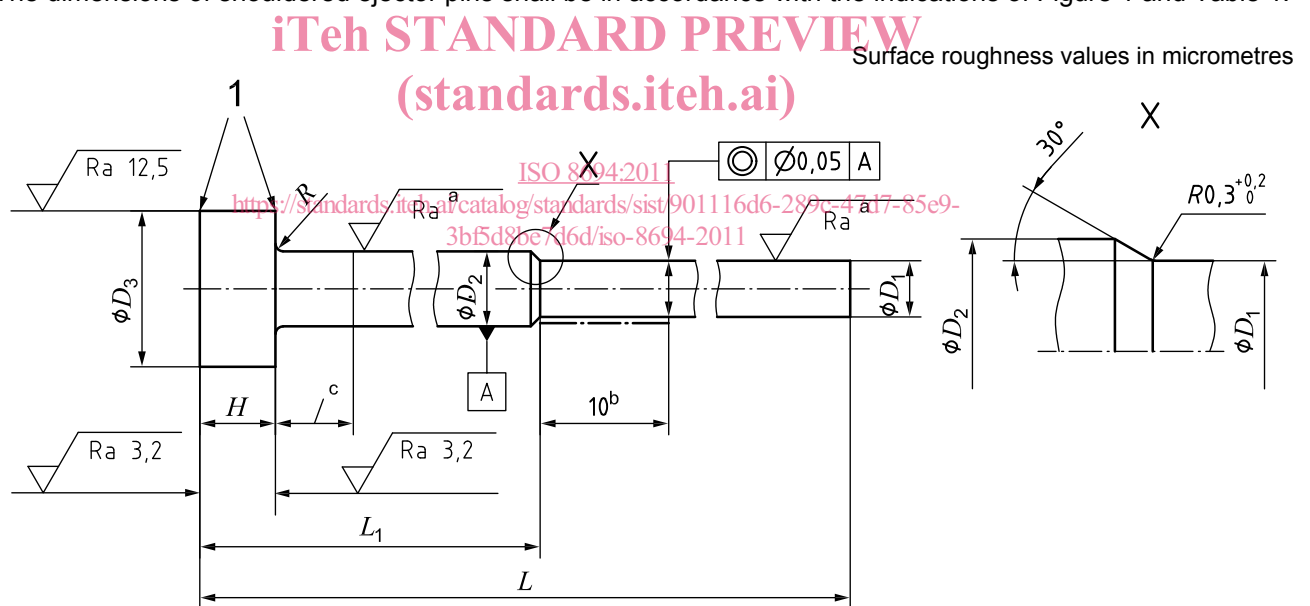
This International Standard specifies the dimensions and tolerances, in millimetres, of shouldered ejector pins with cylindrical head which are used in compression and injection moulds and in die casting dies.

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.



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
Standard size	Oversize	h11	0 $-0,2$	100	125	160	200	250	0 $-0,05$	$+0,2$ 0
				L_1 -1 -2						
				50	50	63	80	100		
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		

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3 Material and hardness

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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

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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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