

INTERNATIONAL STANDARD

ISO
8693

Second edition
1998-11-01

Tools for moulding — Flat ejector pins

Outillage de moulage — Éjecteurs lames

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[ISO 8693:1998](https://standards.iteh.ai/catalog/standards/sist/f25d0a95-cf53-4f40-bccd-7bc390b03006/iso-8693-1998)

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Reference number
ISO 8693:1998(E)

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.

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.

International Standard ISO 8693 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This second edition cancels and replaces the first edition (ISO 8693:1987) which has been technically revised.

Annex A of this International Standard is for information only.

[ISO 8693:1998](#)

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Printed in Switzerland

Tools for moulding — Flat ejector pins

1 Scope

This International Standard specifies the dimensions and tolerances, in millimetres, of flat ejector pins 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 flat ejector pins.

Ejector pins with cylindrical head are specified in ISO 6751; shouldered ejector pins are specified in ISO 8694.

2 Dimensions

See figure 1 and tables 1 and 2.

3 Material and hardness

Flat ejector pins shall be made of hot worked steel or alloyed cold worked steel. The hardness of the shaft and head respectively appears in table 3.

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4 Designation

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

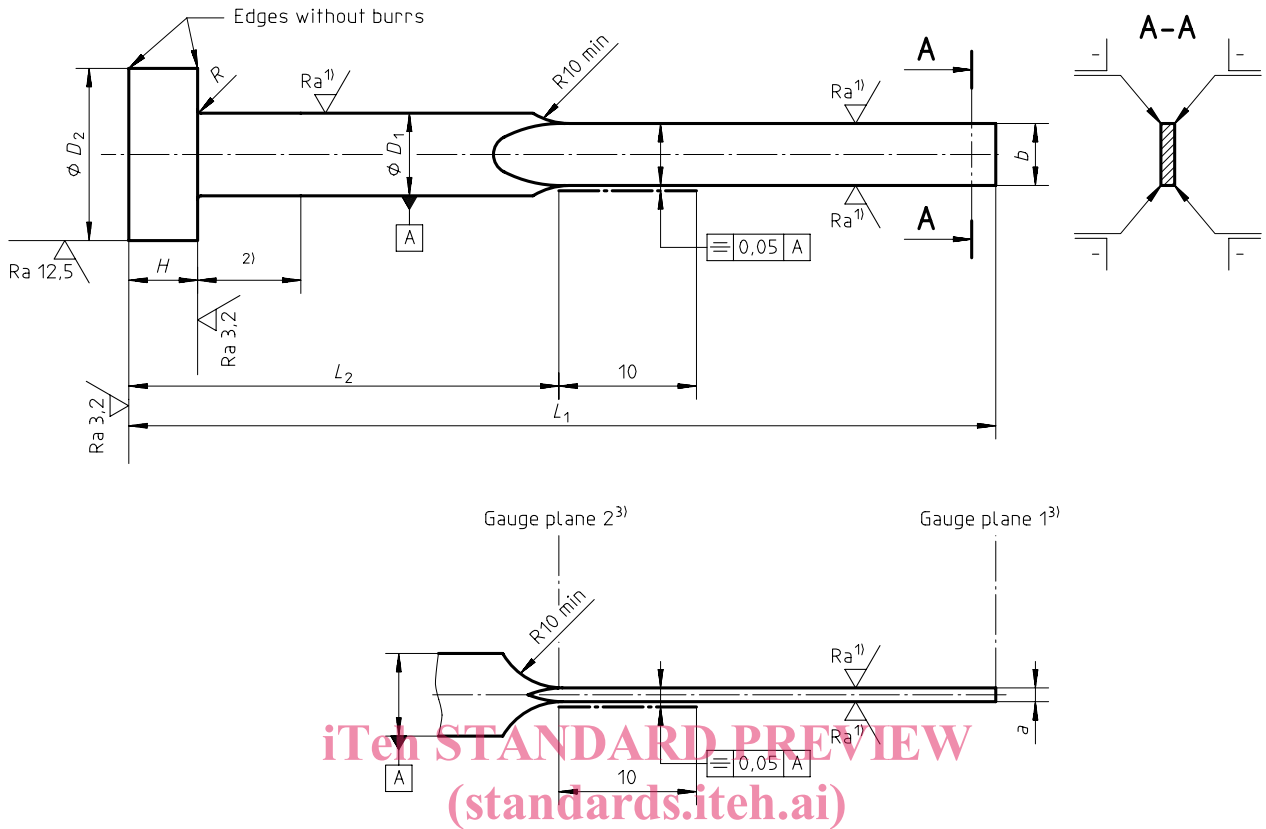
- a) "Flat ejector pin";
- b) reference to this International Standard i.e. ISO 8693;
- c) the width, a , and thickness, b , in millimetres;
- d) the length, L_1 , in millimetres;
- e) the material.

EXAMPLE

A flat ejector pin with width $a = 0,8$ mm, thickness $b = 3,5$ mm, length $L_1 = 63$ mm and made of hot worked steel is described as follows:

Flat ejector pin ISO 8693 - 0,8 × 3,5 - 63 - Hot worked steel

Surface roughness values in micrometres



- 1) <https://standards.iteh.ai/catalog/standards/sist/f25d0a95-cf53-4f40-bccd-76c960050009/iso-8693-1998>
- 2) One is allowed to provide the ejector pin with an alternative surface roughness or a small variation on the diameter, D_1 , for a certain length.
- 3) See note 1) to tables 1 and 2.

Figure 1 — Flat ejector pins

Table 1 — Flat ejector pins of hot worked steel

Dimensions in millimetres

D_1	D_2	$a^1)$	$b^1)$	L_1								H	R	
h11	0 -0,2	0 -0,015	0 -0,015									0 -0,05	+0,2 0	
				63	80	100	125	160	200	250	315	400		
				L_2										
				32	40	50	63	80	100	125	160	200		
4	8	0,8	3,5	X	X	X	X					3	0,3	
		1		X	X	X	X							
		4,2		3,8	X	X	X	X						
		4		1,2	X	X	X	X						
		4,2		3,8	X	X	X	X						
5	10	1	4,5		X	X	X	X				5	0,5	
		1,2		X	X	X	X							
6	12	1,5	5,5						X	X		7	0,8	
		2						X	X	X				
8	14	1,5	7,5						X	X	X	5	0,5	
		2						X	X	X				
10	16	1,5	9,5						X	X	X	7	0,8	
		2						X	X	X	X			
12	18	2	11,5						X	X	X	7	0,8	
		2,5						X	X	X	X			
16	22	2	15,5						X	X	X	7	0,8	
		2,5						X	X	X	X			

1) These limit dimensions apply to 100 mm length. For lengths > 100 mm, the limit deviations are to be multiplied by $(L_1 - L_2) \times 10^{-2}$. The dimensional tolerance is at its maximum at gauge plane 2.

Table 2 — Flat ejector pins of alloyed cold worked steel

Dimensions in millimetres

D_1	D_2	$a^{1)}$	$b^{1)}$	L_1								H	R
				+2 0									
				63	80	100	125	160	200	250	315		
				L_2									
				-1 -2									
				32	40	50	63	80	100	125	160		
4	8	0,8	3,5	X	X	X	X					3	0,3
		1		X	X	X	X						
4,2		3,8	X	X	X	X							
4		1,2	3,5		X	X	X	X					
4,2		3,8		X	X	X	X						
5	10	1	4,5	X	X	X	X					5	0,5
		1,2			X	X	X						
6	12	1,5	5,5			X	X	X	X			5	0,5
		2				X	X	X					
8	14	1,5	7,5				X	X	X	X		5	0,5
10	16	1,5	9,5						X	X	X	7	0,8
		2							X	X	X		
12	18	2	11,5						X	X	X	7	0,8
		2,5							X	X	X		

1) These limit dimensions apply to 100 mm length. For lengths > 100 mm, the limit deviations are to be multiplied by $(L_1 - L_2) \times 10^{-2}$. The dimensional tolerance is at its maximum at gauge plane 2.

Table 3 — Material and hardness

Material	Hardness ¹⁾	
	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	

1) The point at which hardness is measured is left to the manufacturer's discretion.

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Annex A **(informative)**

Bibliography

[1] ISO 6751:1998, *Tools for moulding – Ejector pins with cylindrical head.*

[2] ISO 8694:1998, *Tools for moulding – Shouldered ejector pins.*

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