

BS ISO 6751:2011



BSI Standards Publication

## Tools for moulding — Ejector pins with cylindrical head

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**National foreword**

This British Standard is the UK implementation of ISO 6751:2011. It supersedes BS ISO 6751:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MTE/12, Tools for pressing and moulding.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**Tools for moulding — Ejector pins with  
cylindrical head**

*Outillage de moulage — Éjecteurs à tête cylindrique*



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## Foreword

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ISO 6751 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

This fourth edition cancels and replaces the third edition (ISO 6751:1998), 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 — Ejector pins with cylindrical head

## 1 Scope

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

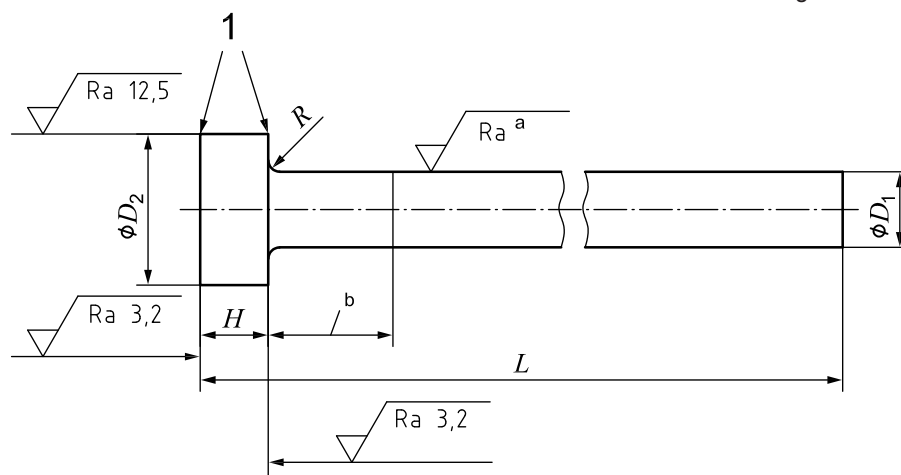
It also gives material guidelines and hardness requirements, and specifies the designation of ejector pins with cylindrical head.

Flat ejector pins are specified in ISO 8693 and shouldered ejector pins are specified in ISO 8694.

## 2 Dimensions

The dimensions of ejector pins shall be in accordance with the indications of Figure 1 and Tables 1 and 2.

Surface roughness values in micrometres



### Key

1 edge without burrs

<sup>a</sup>  $Ra\ 0,8$  for hot worked steel.  $Ra\ 0,4$  for alloyed cold worked steel.

<sup>b</sup> Providing the ejector pin with an alternative surface roughness or a small variation on the diameter,  $D_1$ , over a certain length is permitted.

Figure 1 — Ejector pin with cylindrical head

Table 1 — Dimensions of ejector pins with cylindrical head of hot worked steel

Dimensions in millimetres

$D_1$ g6		$D_2$ $\begin{matrix} 0 \\ -0,2 \end{matrix}$	$L$ $\begin{matrix} +2 \\ 0 \end{matrix}$											$H$ $\begin{matrix} 0 \\ -0,05 \end{matrix}$	$R$ $\begin{matrix} +0,2 \\ 0 \end{matrix}$			
Standard size	Oversize		100	125	160	200	250	315	400	500	630	800	1 000					
2		4	X	X	X	X								2	0,2			
	2,2			X		X												
2,5		5	X	X	X	X							3		0,3			
	2,7			X		X												
3		6	X	X	X	X	X	X								3	0,3	
	3,2			X		X		X										
3,5		7	X	X	X	X	X	X						3				0,3
	3,7			X		X		X										
4		8	X	X	X	X	X	X	X				5		0,5			
	4,2			X		X		X		X								
5		10	X	X	X	X	X	X	X	X						5	0,5	
	5,2			X		X		X		X								
6		12	X	X	X	X	X	X	X	X	X			5				0,5
	6,2			X		X		X		X		X						
8		14	X	X	X	X	X	X	X	X	X	X	5		0,5			
	8,2			X		X		X		X		X						
10		16	X	X	X	X	X	X	X	X	X	X				7	0,8	
	10,2			X		X		X		X		X						
12		18		X	X	X	X	X	X	X	X	X		7				0,8
	12,5			X	X	X	X	X	X	X	X	X						
16		22			X	X	X	X	X	X	X	X	8		1			
20		26			X	X	X	X	X	X	X	X						
25		32				X	X	X	X	X	X	X				10	1	
32		40					X	X	X	X	X	X						



**Table 2 — Dimensions of ejector pins with cylindrical head of alloyed cold worked steel**

Dimensions in millimetres

$D_1$ g6		$D_2$	$L$ $\begin{matrix} +2 \\ 0 \end{matrix}$								$H$	$R$	
Standard size	Oversize		$\begin{matrix} 0 \\ -0,2 \end{matrix}$	80	100	125	160	200	250	315			400
1,5		3	X	X	X	X						1,5	0,2
	1,6		X	X	X	X							
2		4	X	X	X	X	X				2	0,3	
	2,2		X		X		X						
2,5		5	X	X	X	X	X				3		
	2,7		X		X		X						
3		6	X	X	X	X	X	X			3		
	3,2			X		X		X					
3,5		7	X	X	X	X	X	X			3		
	3,7			X		X		X					
4		8	X	X	X	X	X	X	X		3		
	4,2		X		X		X		X				
5		10	X	X	X	X	X	X	X		3		
	5,2		X		X		X		X				
6		12	X	X	X	X	X	X	X		5		
	6,2		X		X		X		X				
8		14	X	X	X	X	X	X	X	X	5		
	8,2			X		X		X		X			
10		16		X	X	X	X	X	X	X	5		
	10,2			X		X		X		X			
12		18		X	X	X	X	X	X	X	7		
	12,5			X	X	X	X	X	X	X			
16		22		X	X	X	X	X	X	X	7		
20		26			X	X	X	X	X	X		8	1

### 3 Material and hardness

Ejector pins with cylindrical head shall be made of hot worked steel or alloyed cold worked steel. The hardness of the shaft and head shall conform to the indications of Table 3.

**Table 3 — Material and hardness**

Material	Hardness <sup>a</sup>	
	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	
<sup>a</sup> The point at which hardness is measured is left to the manufacturer's discretion.		

## 4 Designation

Ejector pins with cylindrical head according to this International Standard shall be designated by:

- a) “ejector pin with cylindrical head”;
- b) reference to this International Standard, i.e. ISO 6751;
- c) ejector pin diameter,  $D_1$ , in millimetres;
- d) ejector pin length,  $L$ , in millimetres;
- e) ejector pin material.

EXAMPLE The designation for an ejector pin with cylindrical head of diameter  $D_1 = 2$  mm, of length  $L = 100$  mm and of hot worked steel is as follows:

**Ejector pin with cylindrical head ISO 6751 - 2 - 100 - Hot worked steel**

## Bibliography

- [1] ISO 1302:2002, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*
- [2] ISO 8693, *Tools for moulding — Flat ejector pins*
- [3] ISO 8694, *Tools for moulding — Shouldered ejector pins*





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