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Fourth edition
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Tools for moulding — Angle pins

Outillage de moulage — Doigts de démoulage

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document 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 8404:2013) which has been technically revised.

The main changes compared to the previous edition are as follows:

— addition of two new types of angle pins: angle pins mounted with external thread (type C) and angle pins mounted with hexagon socket head cap screw (type D);

— correction of Figure 1;

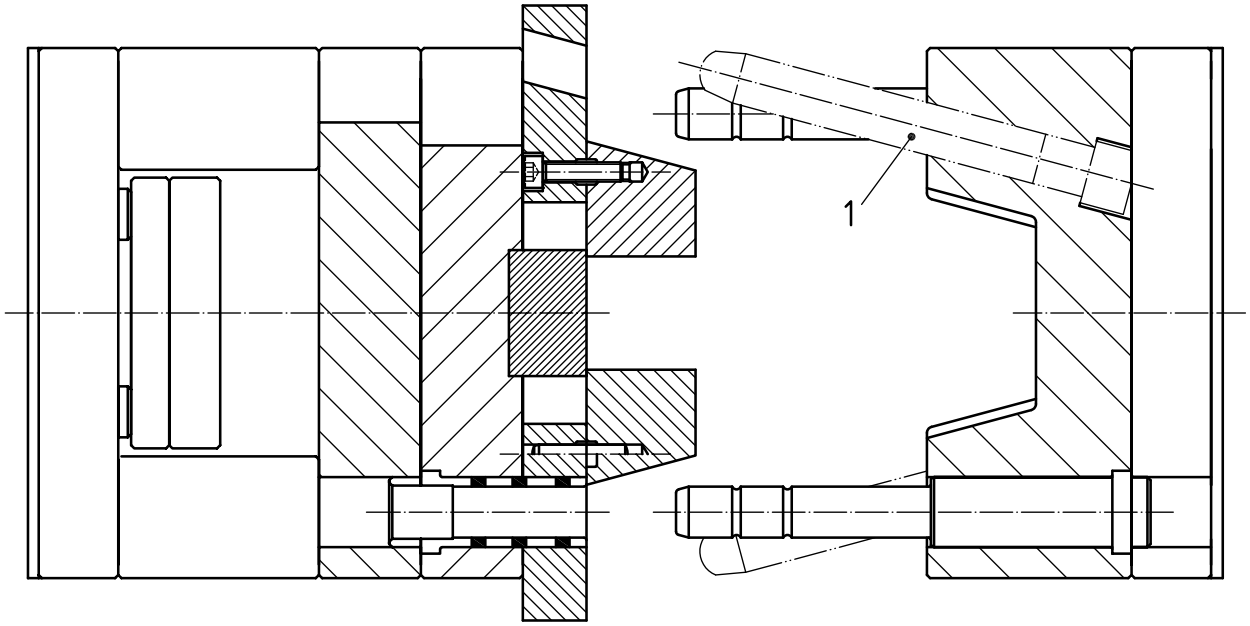
— addition of an indication of surface roughness under the head of headed angle pins (Figure 2);

— modification of the height of headed angle pins of diameter D_1 = 40.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

An example of an application of this document is shown in Figure 1.



Key

1 angle pin (type A)

Figure 1 — Application example of a headed angle pin, type A

Tools for moulding — Angle pins

1 Scope

This document specifies the basic dimensions, in millimetres, of headed angle pins (type A), straight angle pins (type B), angle pins mounted with external thread (type C) and angle pins mounted with hexagon socket head cap screw (type D), intended for use in diecasting dies and tools for moulding.

It also specifies the material hardness and designation of the angle pins (types A, B, C and D).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 4957, *Tool steels*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

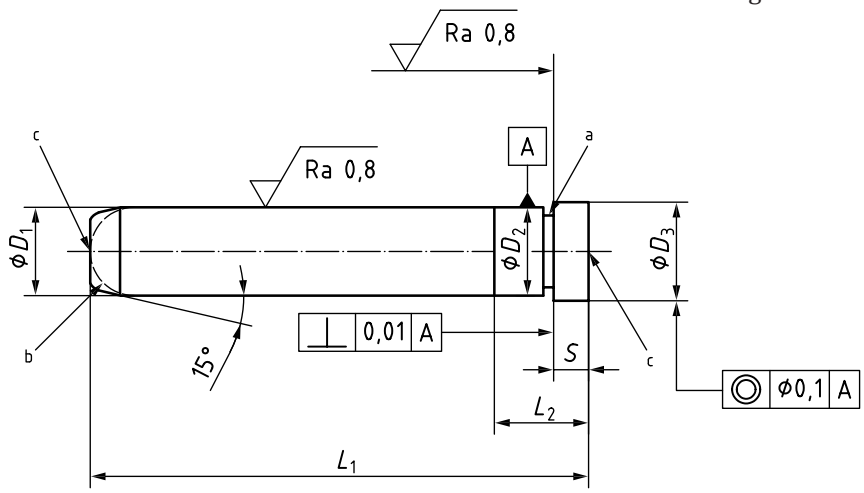
— IEC Electropedia: available at http://www.electropedia.org/

4 Dimensions

4.1 Type A — Headed angle pins

The dimensions of headed angle pins shall be in accordance with the indications of Figure 2 and Table 1.

Dimensions in millimetres
Surface roughness values in micrometres



a Radius or undercut.

b The leading end can be rounded. The choice of shape is left to the manufacturer's discretion.

c Optional centres.

The general tolerance shall be ISO 2768-m according to ISO 2768-1.

Figure 2 — Type A, headed angle pins

Table 1 — Dimensions of type A, headed angle pins

Dimensions in millimetres

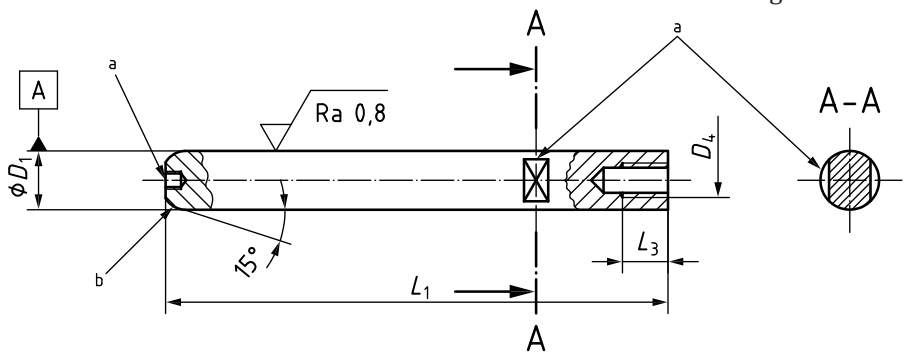
D_1 g6 D_2 m6	10	12	16	20	25	32	40
S_{min}	3	6	8	8	16	16	18
D_3 $^{0}_{-0,2}$	14	16	20	25	30	38	48
L_1 $^{0}_{-1,5}$	L_2 $^{-0,5}_{-1,0}$						
63	16	16					
80	16	16	26				
100	22	22	26	30			
125	22	22	26	30			
160			36	40			
200			36	40	42	47	54
250				40	42	47	62
315					42	54	62
400						54	62
500							71

NOTE Tolerance classes and limit deviations are defined in ISO 286-2.

4.2 Type B — Straight angle pins

The dimensions of straight angle pins shall be in accordance with the indications of Figure 3 and Table 2.

Dimensions in millimetres
Surface roughness values in micrometres



a Position and dimensions of width across flats or alternatively hexagon sockets are left to the manufacturer's discretion.

b The leading end can be rounded. The choice of shape is left to the manufacturer.

The general tolerance shall be ISO 2768-m according to ISO 2768-1.

Figure 3 — Type B, straight angle pin

Table 2 — Dimensions of type B, straight angle pin

Dimensions in millimetres

D_1 k6		10	12	16	20	25	32
D_4		M6	M6	M8	M10	M12	M16
L_3 $^{+1,5}_{0}$		12	12	16	20	24	32
L_1 $^{0}_{-1,5}$	63	x	x	x	x		
	80	x	x	x	x	x	
	100	x	x	x	x	x	x
	125	x	x	x	x	x	x
	160			x	x	x	x
	200			x	x	x	x
	250				x	x	x
	315					x	x
	400						x

Key

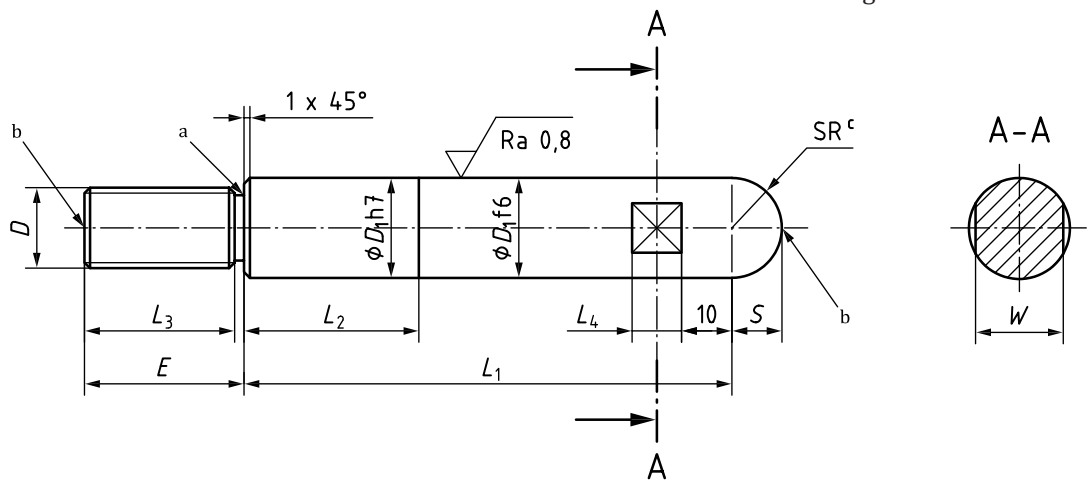
x standardized dimensions

NOTE Tolerance classes and limit deviations are defined in ISO 286-2.

4.3 Type C — Angle pins mounted with external thread

The dimensions of angle pins mounted with external thread shall be in accordance with the indications of Figure 4 and Table 3.

Dimensions in millimetres
Surface roughness values in micrometres



a Radius or undercut.

b Optional centres.

c SR = $D_1/2$.

The general tolerance shall be ISO 2768-m according to ISO 2768-1.

NOTE Tolerance classes and limit deviations are defined in ISO 286-2.

Figure 4 — Type C, angle pins mounted with external thread

Table 3 — Dimensions of type C, angle pins mounted with external thread

Dimensions in millimetres

D_1	D	L_2	L_3	L_4	E	S	W	$L_1 \pm 0,2$								
								40	50	60	80	100	125	160	200	250
10	M6	$0 \leq L_2 < L_1$	15	8	17	5	7	x	x	x	x	x	x	x	x	
12	M8		20	10	22	6,5	10		x	x	x	x	x	x	x	x
16	M12		25	10	27	8	13		x	x	x	x	x	x	x	x
20	M16		30	12	32	10	17			x	x	x	x	x	x	x

Key
x standardized dimensions