
International Standard



5407

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

**As-sintered hardmetal pellets used in heading dies —
Dimensions and tolerances**

Noyaux bruts en métaux-durs pour matrices de frappe à froid — Dimensions et tolérances

First edition — 1981-10-01

UDC 621.979.07 : 621.762

Ref. No. ISO 5407-1981 (E)

Descriptors : die pellets, dimensions, dimensional tolerances.

Price based on 4 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5407 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in May 1980.

It has been approved by the member bodies of the following countries :

Australia	India	Poland
Austria	Israel	Romania
Belgium	Italy	South Africa, Rep. of
Czechoslovakia	Japan	Spain
France	Korea, Dem. P. Rep. of	Sweden
Germany, F.R.	Korea, Rep. of	United Kingdom
Hungary	Netherlands	USA

The member body of the following country expressed disapproval of the document on technical grounds :

USSR

As-sintered hardmetal pellets used in heading dies — Dimensions and tolerances

1 Scope and field of application

This International Standard lays down the dimensions and tolerances of as-sintered hardmetal pellets used in heading dies.

NOTES

- 1 As defined in ISO 3252, the term "hardmetal" may be used synonymously with "cemented carbide".
- 2 In the United States, the term "nib" is used instead of the term "pellet".

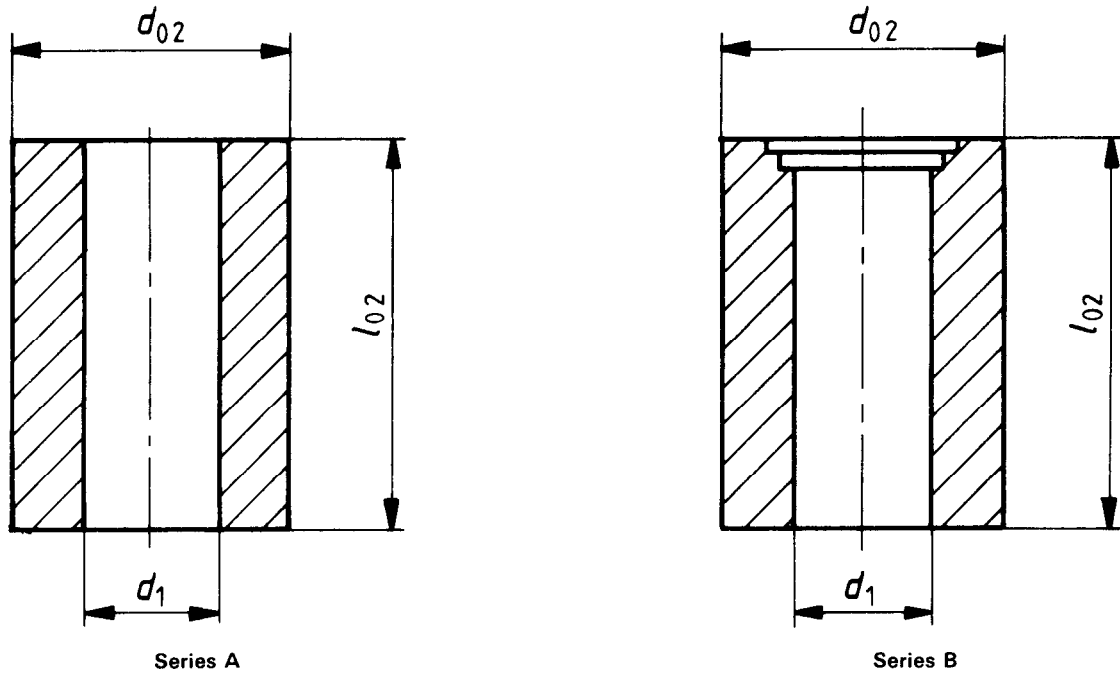
2 References

ISO 3252, *Powder metallurgy — Vocabulary*.¹⁾

ISO 5396, *Hardmetal heading dies — Terminology*.

¹⁾ At present at the stage of draft. (Revision of ISO 3252-1975.)

3 Dimensions



NOTE

- d_1 is the diameter of the finished bore;
- d_{02} is the outside diameter of as-sintered pellet;
- l_{02} is the length of as-sintered pellet.

Dimensions in millimetres

Diameter of the finished bore d_1		Outside diameter of as-sintered pellet d_{02}		As-sintered pellet length l_{02}																	
over	up to and including	Series A	Series B ¹⁾	15	20	25	30	35	40	45	50	55	60	70	80 ³⁾	90	100	110	120	140	
1,50 ²⁾	1,75	10	10	x	x	x															
1,75	2,10	10	10	x	x	x	x														
2,10	3,00	10	12	x	x	x	x	x	x	x											
3,00	4,00	12	14			x	x	x	x	x	x	x	x								
4,00	5,00	14	16			x	x	x	x	x	x	x	x	x	x						
5,00	6,00	16	18			x	x	x	x	x	x	x	x	x	x						
6,00	7,00	18	20			x	x	x	x	x	x	x	x	x	x						
7,00	8,00	20	22			x	x	x	x	x	x		x	x	x	x	x				
8,00	10,00	24	26			x	x	x	x	x	x		x	x	x	x	x				
10,00	12,00	26	28				x		x		x		x	x	x	x	x				
12,00	14,00	28	32				x		x		x		x	x	x	x	x	x	x		
14,00	16,00	32	36				x		x		x		x	x	x	x	x	x	x		
16,00	18,00	36	40						x		x		x	x	x	x	x	x	x	x	x
18,00	20,00	40	45						x		x		x	x	x	x	x	x	x	x	x
20,00	24,00	45	50						x		x		x	x	x	x	x	x	x	x	x

- 1) Series B refers to heading dies, washer faced.
- 2) Inclusive.
- 3) Only for series B.

4 Tolerances

4.1 Tolerances of the bore diameter d_{01} of as-sintered pellet

Values in millimetres

Diameter of the finished bore d_1		Tolerances on d_{01} for as-sintered pellet length l_{02}					
over	up to and including	15	20 to 30	35 to 50	55 to 80	90 to 120	140
	6	-0,3 -0,7	-0,3 -0,8	-0,3 -0,8	-0,4 -1,0		
6	10		-0,3 -0,9	-0,3 -1,0	-0,4 -1,1	-0,4 -1,2	
10	14		-0,4 -1,1	-0,4 -1,1	-0,4 -1,2	-0,4 -1,3	
14	18		-0,4 -1,1	-0,4 -1,2	-0,4 -1,3	-0,5 -1,4	-0,5 -1,5
18	24			-0,4 -1,3	-0,4 -1,4	-0,5 -1,6	-0,5 -1,6

NOTE — The tolerances include a grinding allowance of 0,3 to 0,5 mm dependent on the bore diameter and the length of as-sintered pellet.

4.2 Tolerances of the outside diameter d_{02} of as-sintered pellet

Values in millimetres

d_{02}	Tolerances on d_{02} for as-sintered pellet length l_{02}					
	15	20 to 30	35 to 50	55 to 80	90 to 120	140
10						
12	+ 1,0	+ 1,1	+ 1,1	+ 1,2		
14	+ 0,4	+ 0,4	+ 0,4	+ 0,4		
16		+ 1,1	+ 1,2	+ 1,3		
18		+ 0,4	+ 0,4	+ 0,4		
20						
22		+ 1,3	+ 1,3	+ 1,4	+ 1,6	
24		+ 0,4	+ 0,4	+ 0,4	+ 0,5	
26						
28		+ 1,4 + 0,4	+ 1,5 + 0,4	+ 1,5 + 0,4	+ 1,7 + 0,5	
32						
36		+ 1,5	+ 1,6	+ 1,7	+ 1,8	+ 1,9
40		+ 0,4	+ 0,4	+ 0,4	+ 0,5	+ 0,5
45						
50			+ 2,0 + 0,5	+ 2,0 + 0,5	+ 2,1 + 0,5	+ 2,2 + 0,6

NOTE — The tolerances include a grinding allowance of 0,4 to 0,6 mm dependent on the outside diameter and the length of as-sintered pellet.

4.3 Bend of the bore and of the outside diameter of as-sintered pellet

Dimensions in millimetres

As-sintered pellet length l_{02}	15	20 to 30	35 to 50	55 to 80	90 to 120	140
Permissible bend of the bore and of the outside diameter	0,15	0,2	0,25	0,3	0,35	0,4

4.4 Tolerances of the length l_{02} of as-sintered pellet

Values in millimetres

l_{02}	Tolerances on l_{02} for as-sintered pellet outside diameter d_{02}		
	10 to 18	20 to 28	32 to 50
15	+ 1,1 + 0,4		
20	+ 1,2 + 0,4		
25	+ 1,3	+ 1,4	+ 1,5
30	+ 0,4	+ 0,4	+ 0,4
35	+ 1,5	+ 1,5	+ 1,6
40	+ 0,4	+ 0,4	+ 0,4
45	+ 1,8	+ 1,9	+ 2,0
50	+ 0,5	+ 0,5	+ 0,5
55	+ 2,2	+ 2,3	+ 2,3
60	+ 0,5	+ 0,5	+ 0,5
70	+ 2,6	+ 2,7	+ 2,7
80	+ 0,5	+ 0,5	+ 0,5
90		+ 3,1	+ 3,1
100		+ 0,5	+ 0,5
110		+ 3,7	+ 3,7
120		+ 0,6	+ 0,6
140			+ 4,2 + 0,6

NOTE — The tolerances include a grinding allowance of 0,2 to 0,3 mm on each end dependant on the outside diameter and length of as-sintered pellet.