International Standard 5407

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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

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Foreword

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

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Hungary	Netherlands	USA

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

USSR

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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".

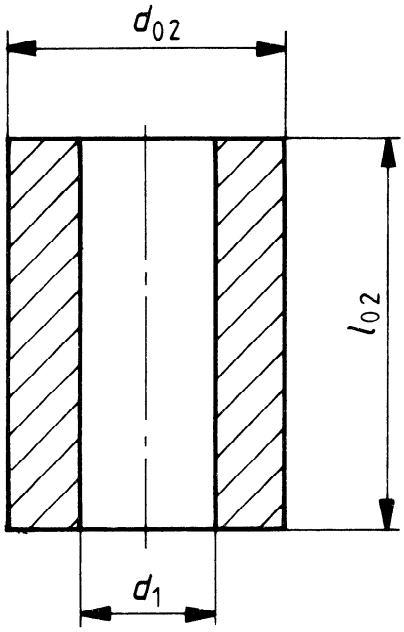
2 References

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

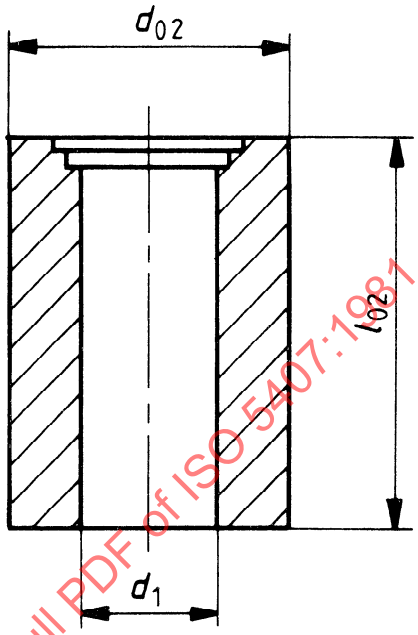
ISO 5396, *Hardmetal heading dies — Terminology.*

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

3 Dimensions



Series A



Series B

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
18,00	20,00	40	45						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

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 14	+ 1,0 + 0,4	+ 1,1 + 0,4	+ 1,1 + 0,4	+ 1,2 + 0,4		
16 18		+ 1,1 + 0,4	+ 1,2 + 0,4	+ 1,3 + 0,4		
20 22 24		+ 1,3 + 0,4	+ 1,3 + 0,4	+ 1,4 + 0,4	+ 1,6 + 0,5	
26 28		+ 1,4 + 0,4	+ 1,5 + 0,4	+ 1,5 + 0,4	+ 1,7 + 0,5	
32 36 40		+ 1,5 + 0,4	+ 1,6 + 0,4	+ 1,7 + 0,4	+ 1,8 + 0,5	+ 1,9 + 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 30	+ 1,3 + 0,4	+ 1,4 + 0,4	+ 1,5 + 0,4
35 40	+ 1,5 + 0,4	+ 1,5 + 0,4	+ 1,6 + 0,4
45 50	+ 1,8 + 0,5	+ 1,9 + 0,5	+ 2,0 + 0,5
55 60	+ 2,2 + 0,5	+ 2,3 + 0,5	+ 2,3 + 0,5
70 80	+ 2,6 + 0,5	+ 2,7 + 0,5	+ 2,7 + 0,5
90 100		+ 3,1 + 0,5	+ 3,1 + 0,5
110 120		+ 3,7 + 0,6	+ 3,7 + 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.