
INTERNATIONAL STANDARD



2904

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ISO metric trapezoidal screw threads — Basic dimensions

Filetages métriques trapézoïdaux ISO — Dimensions de base

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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 2904 was developed by Technical Committee ISO/TC 1, *Screw threads*, and was circulated to the member bodies in June 1976.

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

Austria	Hungary	Norway
Belgium	India	Poland
Brazil	Ireland	Romania
Canada	Italy	South Africa, Rep. of
Denmark	Korea, Rep. of	Spain
Finland	Mexico	Sweden
France	Netherlands	Switzerland
Germany	New Zealand	U.S.A.

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Japan
U.S.S.R.

ISO metric trapezoidal screw threads – Basic dimensions

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the basic dimensions for ISO metric trapezoidal screw threads according to ISO 2902.

The values refer to the basic profiles according to ISO 2901.

2 REFERENCES

ISO 2901, *ISO metric trapezoidal screw threads – Basic profile and maximum material profiles.*

ISO 2902, *ISO metric trapezoidal screw threads – General plan.*

3 CALCULATION

The values given in this International Standard have been calculated from the following formulae :

$$H_1 = 0,5 P$$

$$H_4 = H_1 + a_c = 0,5 P + a_c$$

$$h_3 = H_1 + a_c = 0,5 P + a_c$$

$$z = 0,25 P = H_1/2$$

$$D_1 = d - 2 H_1 = d - P$$

$$D_4 = d + 2 a_c$$

$$d_3 = d - 2 h_3$$

$$d_2 = D_2 = d - 2 z = d - 0,5 P$$

$$R_1 \text{ max.} = 0,5 a_c$$

$$R_2 \text{ max.} = a_c$$

where

a_c = clearance on the crest

D_4 = major diameter for internal threads

D_2 = pitch diameter for internal threads

D_1 = minor diameter for internal threads

d = major diameter for external threads : nominal diameter

d_2 = pitch diameter for external threads

d_3 = minor diameter for external threads

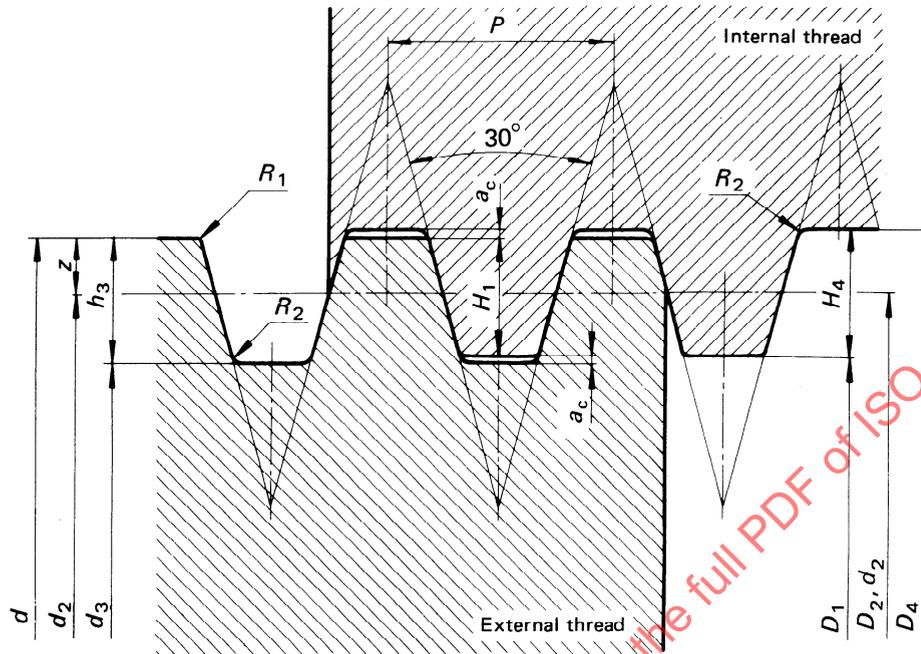
H_1 = height of the overlapping

H_4 = height of internal threads

h_3 = height of external threads

P = pitch

4 BASIC PROFILES (modified)



FIGURE

TABLE 1 - Basic dimensions for the thread profile

Dimensions in millimetres

P	a_c	$H_4 = h_3$	H_1	R_1 max.	R_2 max.
1,5	0,15	0,9	0,75	0,08	0,15
2	0,25	1,25	1	0,13	0,25
3	0,25	1,75	1,5	0,13	0,25
4	0,25	2,25	2	0,13	0,25
5	0,25	2,75	2,5	0,13	0,25
6	0,5	3,5	3	0,25	0,5
7	0,5	4	3,5	0,25	0,5
8	0,5	4,5	4	0,25	0,5
9	0,5	5	4,5	0,25	0,5
10	0,5	5,5	5	0,25	0,5
12	0,5	6,5	6	0,25	0,5
14	1	8	7	0,5	1
16	1	9	8	0,5	1
18	1	10	9	0,5	1
20	1	11	10	0,5	1
22	1	12	11	0,5	1
24	1	13	12	0,5	1
28	1	15	14	0,5	1
32	1	17	16	0,5	1
36	1	19	18	0,5	1
40	1	21	20	0,5	1
44	1	23	22	0,5	1

TABLE 2 — Basic dimensions

Dimensions in millimetres

Nominal diameter d			Pitch P	Pitch diameter $d_2 = D_2$	Major diameter D_4	Minor diameter	
column 1	column 2	column 3				d_3	D_1
8			1,5	7,250	8,300	6,200	6,500
	9		1,5 2	8,250 8,000	9,300 9,500	7,200 6,500	7,500 7,000
10			1,5 2	9,250 9,000	10,300 10,500	8,200 7,500	8,500 8,000
	11		2 3	10,000 9,500	11,500 11,500	8,500 7,500	9,000 8,000
12			2 3	11,000 10,500	12,500 12,500	9,500 8,500	10,000 9,000
	14		2 3	13,000 12,500	14,500 14,500	11,500 10,500	12,000 11,000
16			2 4	15,000 14,000	16,500 16,500	13,500 11,500	14,000 12,000
	18		2 4	17,000 16,000	18,500 18,500	15,500 13,500	16,000 14,000
20			2 4	19,000 18,000	20,500 20,500	17,500 15,500	18,000 16,000
	22		3 5 8	20,500 19,500 18,000	22,500 22,500 23,000	18,500 16,500 13,000	19,000 17,000 14,000
24			3 5 8	22,500 21,500 20,000	24,500 24,500 25,000	20,500 18,500 15,000	21,000 19,000 16,000
	26		3 5 8	24,500 23,500 22,000	26,500 26,500 27,000	22,500 20,500 17,000	23,000 21,000 18,000
28			3 5 8	26,500 25,500 24,000	28,500 28,500 29,000	24,500 22,500 19,000	25,000 23,000 20,000
	30		3 6 10	28,500 27,000 25,000	30,500 31,000 31,000	26,500 23,000 19,000	27,000 24,000 20,000
32			3 6 10	30,500 29,000 27,000	32,500 33,000 33,000	28,500 25,000 21,000	29,000 26,000 22,000
	34		3 6 10	32,500 31,000 29,000	34,500 35,000 35,000	30,500 27,000 23,000	31,000 28,000 24,000
36			3 6 10	34,500 33,000 31,000	36,500 37,000 37,000	32,500 29,000 25,000	33,000 30,000 26,000
	38		3 7 10	36,500 34,500 33,000	38,500 39,000 39,000	34,500 30,000 27,000	35,000 31,000 28,000

Dimensions in millimetres

Nominal diameter			Pitch <i>P</i>	Pitch diameter $d_2 = D_2$	Major diameter D_4	Minor diameter	
column 1	column 2	column 3				d_3	D_1
40			3	38,500	40,500	36,500	37,000
			7	36,500	41,000	32,000	33,000
			10	35,000	41,000	29,000	30,000
	42		3	40,500	42,500	38,500	39,000
			7	38,500	43,000	34,000	35,000
			10	37,000	43,000	31,000	32,000
44			3	42,500	44,500	40,500	41,000
			7	40,500	45,000	36,000	37,000
			12	38,000	45,000	31,000	32,000
	46		3	44,500	46,500	42,500	43,000
			8	42,000	47,000	37,000	38,000
			12	40,000	47,000	33,000	34,000
48			3	46,500	48,500	44,500	45,000
			8	44,000	49,000	39,000	40,000
			12	42,000	49,000	35,000	36,000
	50		3	48,500	50,500	46,500	47,000
			8	46,000	51,000	41,000	42,000
			12	44,000	51,000	37,000	38,000
52			3	50,500	52,500	48,500	49,000
			8	48,000	53,000	43,000	44,000
			12	46,000	53,000	39,000	40,000
	55		3	53,500	55,500	51,500	52,000
			9	50,500	56,000	45,000	46,000
			14	48,000	57,000	39,000	41,000
60			3	58,500	60,500	56,500	57,000
			9	55,500	61,000	50,000	51,000
			14	53,000	62,000	44,000	46,000
	65		4	63,000	65,500	60,500	61,000
			10	60,000	66,000	54,000	55,000
			16	57,000	67,000	47,000	49,000
70			4	68,000	70,500	65,500	66,000
			10	65,000	71,000	59,000	60,000
			16	62,000	72,000	52,000	54,000
	75		4	73,000	75,500	70,500	71,000
			10	70,000	76,000	64,000	65,000
			16	67,000	77,000	57,000	59,000
80			4	78,000	80,500	75,500	76,000
			10	75,000	81,000	69,000	70,000
			16	72,000	82,000	62,000	64,000
	85		4	83,000	85,500	80,500	81,000
			12	79,000	86,000	72,000	73,000
			18	76,000	87,000	65,000	67,000
90			4	88,000	90,500	85,500	86,000
			12	84,000	91,000	77,000	78,000
			18	81,000	92,000	70,000	72,000
	95		4	93,000	95,500	90,500	91,000
			12	89,000	96,000	82,000	83,000
			18	86,000	97,000	75,000	77,000