SLOVENSKI STANDARD
SIST ISO 2904:1998

01-avgust-1998

Metrski trapezni navoj ISO - Osnovne mere

ISO metric trapezoidal screw threads -- Basic dimensions

Filetages métriques trapézoïdaux ISO -- Dimensions de base

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Ta slovenski standard je istoveten z: ISO 2904:1977

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ICS:

21.040.10 Metrski navoji Metric screw threads

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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INTERNATIONAL STANDARD ISO 2904

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

ISO metric trapezoidal screw threads — Basic dimensions

Filetages métriques trapézoïdaux ISO — Dimensions de base

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Descriptors : screw threads, trapezoidal threads, specifications, profiles, dimensions, diameters, thread pitch.

Price based on 6 pages

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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.

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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 :

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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.

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1 SCOPE AND FIELD OF APPLICATION

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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

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4 BASIC PROFILES (modified)

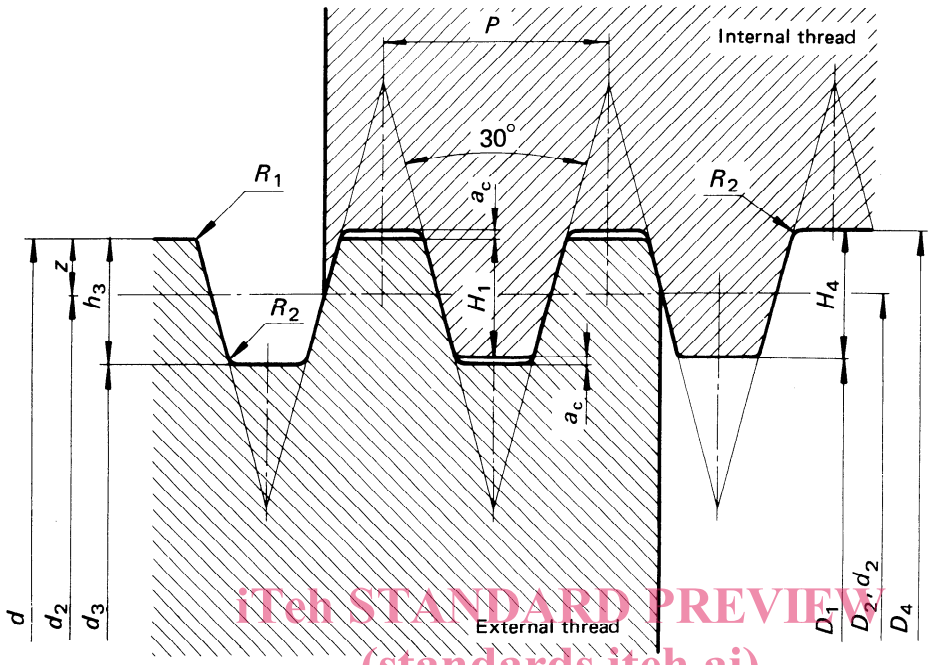

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FIGURE

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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

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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	8,250	9,300	7,200	7,500
			2	8,000	9,500	6,500	7,000
10			1,5	9,250	10,300	8,200	8,500
			2	9,000	10,500	7,500	8,000
	11		2	10,000	11,500	8,500	9,000
			3	9,500	11,500	7,500	8,000
12			2	11,000	12,500	9,500	10,000
			3	10,500	12,500	8,500	9,000
	14		2	13,000	14,500	11,500	12,000
			3	12,500	14,500	10,500	11,000
16			2	15,000	16,500	13,500	14,000
			4	14,000	16,500	11,500	12,000
	18		2	17,000	18,500	15,500	16,000
			4	16,000	18,500	13,500	14,000
20			2	19,000	20,500	17,500	18,000
			4	18,000	20,500	15,500	16,000
	22		3	20,500	22,500	18,500	19,000
			5	19,500	22,500	16,500	17,000
			8	18,000	23,000	13,000	14,000
24			3	22,500	24,500	20,500	21,000
			5	21,500	24,500	18,500	19,000
			8	20,000	25,000	15,000	16,000
	26		3	24,500	26,500	22,500	23,000
			5	23,500	26,500	20,500	21,000
			8	22,000	27,000	17,000	18,000
28			3	26,500	28,500	24,500	25,000
			5	25,500	28,500	22,500	23,000
			8	24,000	29,000	19,000	20,000
	30		3	28,500	30,500	26,500	27,000
			6	27,000	31,000	23,000	24,000
			10	25,000	31,000	19,000	20,000
32			3	30,500	32,500	28,500	29,000
			6	29,000	33,000	25,000	26,000
			10	27,000	33,000	21,000	22,000
	34		3	32,500	34,500	30,500	31,000
			6	31,000	35,000	27,000	28,000
			10	29,000	35,000	23,000	24,000
36			3	34,500	36,500	32,500	33,000
			6	33,000	37,000	29,000	30,000
			10	31,000	37,000	25,000	26,000
	38		3	36,500	38,500	34,500	35,000
			7	34,500	39,000	30,000	31,000
			10	33,000	39,000	27,000	28,000

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Dimensions in millimetres

Nominal diameter d column 1	column 2	column 3	Pitch P	Pitch diameter $d_2 = D_2$	Major diameter D_4	Minor diameter 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

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Dimensions in millimetres

Nominal diameter d column 1	Nominal diameter d column 2	Nominal diameter d column 3	Pitch P	Pitch diameter $d_2 = D_2$	Major diameter D_4	Minor diameter d_3	Minor diameter D_1
100			4	98,000	100,500	95,500	96,000
			12	94,000	101,000	87,000	88,000
			20	90,000	102,000	78,000	80,000
		105	4	103,000	105,500	100,500	101,000
			12	99,000	106,000	92,000	93,000
			20	95,000	107,000	83,000	85,000
	110		4	108,000	110,500	105,500	106,000
			12	104,000	111,000	97,000	98,000
			20	100,000	112,000	88,000	90,000
		115	6	112,000	116,000	108,000	109,000
			14	108,000	117,000	99,000	101,000
			22	104,000	117,000	91,000	93,000
120			6	117,000	121,000	113,000	114,000
			14	113,000	122,000	104,000	106,000
			22	109,000	122,000	96,000	98,000
		125	6	122,000	126,000	118,000	119,000
			14	118,000	127,000	109,000	111,000
			22	114,000	127,000	101,000	103,000
	130		6	127,000	131,000	123,000	124,000
			14	123,000	132,000	114,000	116,000
			22	119,000	132,000	106,000	108,000
		135	6	132,000	136,000	128,000	129,000
			14	128,000	137,000	119,000	121,000
			24	123,000	137,000	109,000	111,000
140			6	137,000	141,000	133,000	134,000
			14	133,000	142,000	124,000	126,000
			24	128,000	142,000	114,000	116,000
		145	6	142,000	146,000	138,000	139,000
			14	138,000	147,000	129,000	131,000
			24	133,000	147,000	119,000	121,000
	150		6	147,000	151,000	143,000	144,000
			16	142,000	152,000	132,000	134,000
			24	138,000	152,000	124,000	126,000
		155	6	152,000	156,000	148,000	149,000
			16	147,000	157,000	137,000	139,000
			24	143,000	157,000	129,000	131,000
160			6	157,000	161,000	153,000	154,000
			16	152,000	162,000	142,000	144,000
			28	146,000	162,000	130,000	132,000
		165	6	162,000	166,000	158,000	159,000
			16	157,000	167,000	147,000	149,000
			28	151,000	167,000	135,000	137,000
	170		6	167,000	171,000	163,000	164,000
			16	162,000	172,000	152,000	154,000
			28	156,000	172,000	140,000	142,000
		175	8	171,000	176,000	166,000	167,000
			16	167,000	177,000	157,000	159,000
			28	161,000	177,000	145,000	147,000

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