SLOVENSKI STANDARD
SIST EN 10056-1:2017

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Nadomešča:
SIST EN 10056-1:2000

Kotni (L) jekleni profili z enakimi in različnimi kraki - 1. del: Mere

Structural steel equal and unequal leg angles - Part 1: Dimensions

Gleichschenklige und ungleichschenklige Winkel aus Stahl - Teil 1: Maße

Cornières à ailes égales et inégales en acier de construction - Partie 1 : Dimensions

Ta slovenski standard je istoveten z: EN 10056-1:2017

ICS:

77.140.70	Jekleni profili	Steel profiles

SIST EN 10056-1:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10056-1

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ICS 77.140.70

Supersedes EN 10056-1:1998

English Version

Structural steel equal and unequal leg angles - Part 1: Dimensions

Cornières à ailes égales et inégales en acier de construction - Partie 1: Dimensions

Gleichschenklige und ungleichschenklige Winkel aus Stahl - Teil 1: Maße

This European Standard was approved by CEN on 14 November 2016.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 10056-1:2017) has been prepared by Technical Committee ECISS/TC 103 “Structural steels other than reinforcements”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 10056-1:1998.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies requirements for the nominal dimensions of hot-rolled equal and unequal leg angles. This European Standard does not apply to angles with square roots. These requirements do not apply to equal and unequal leg angles rolled from stainless steel.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10025-2, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10025-3, *Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels*

EN 10025-4, *Hot rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels*

EN 10025-5, *Hot rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance*

EN 10056-2, *Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions*

EN 10079, *Definition of steel products*

3 Terms and definitions

For the purposes of this document, the definitions given in EN 10079 apply.

4 Designation

The designation of the hot-rolled equal and unequal leg angles shall comprise:

1) the number of this European Standard;

2) the letter L for angles;

3) the leg length a (in mm);

4) the leg length a or b (in mm);

5) the leg thickness t (in mm);

6) reference to the material standard;

7) steel name or steel number.

Example of designation for an equal angle with leg length of a = 70 mm and leg thickness of 7 mm made from steel of grade S235JR (material number 1.0038) as specified in EN 10025-2:

EN 10056-1 — L 70 × 70 × 7 – EN 10025-2 — S235JR

or

EN 10056-1 — L 70 × 70 × 7 – EN 10025-2 — 1.0038

Example of designation for an unequal angle with leg length of a = 50 mm and leg length b = 30 and leg thickness of 5 mm made from steel of grade S235JR (material number 1.0038) as specified in EN 10025-2:

EN 10056-1 — L 50 × 30 × 5 – EN 10025-2 — S235JR

or

EN 10056-1 — L 50 × 30 × 5 – EN 10025-2 — 1.0038

5 Dimensions

Dimensions of hot-rolled equal and unequal leg angles given in Table 1 and Table 2 and illustrated in Figure 1 and Figure 2 within this European standard are preferred dimensions. Other sizes may be ordered according to this standard, the corresponding dimensions shall be provided at the time of the order.

In the production of structural shapes, the dimensions and weights may vary slightly from the published nominal figures. However, they remain within the permissible tolerance.

Roll wear may also slightly affect the radii of fillets and rounded edges.

6 Tolerances on shape and dimensions

Tolerances on shape and dimensions shall be as given in EN 10056-2.

7 Material

Angles covered by this standard shall preferably be made of one of the steel grades specified in EN 10025-2 to EN 10025-5. Other steel grades as given in EN 10273, EN 10225 and EN 10028-2 may also be used for specific applications. The desired steel grade shall be specified at the time of ordering.

Table 1 — Dimensions and sectional properties of hot-rolled equal-leg angles

Designation	Mass	Sectional area	Dimensions			Distances of centre of gravity			Sectional properties about axes							
									axis y-y / axis z-z			axis u-u		axis v-v		
			$a = b$	t	r_{root}	$c_y = c_z$	c_u	c_v	$I_y = I_z$	$i_y = i_z$	$W_{el,y} = W_{el,z}$	I_u	i_u	I_v	i_v	$W_{el,v}$
	kg/m	cm²	mm	mm	mm	cm	cm	cm	cm⁴	cm	cm³	cm⁴	cm	cm⁴	cm	cm³
20x20x3	0,88	1,12	20	3	3,5	0,60	1,41	0,85	0,39	0,59	0,28	0,62	0,74	0,17	0,38	0,20
25x25x3	1,12	1,42	25	3	3,5	0,72	1,77	1,02	0,80	0,75	0,45	1,27	0,95	0,33	0,48	0,33
25x25x4	1,45	1,85	25	4	3,5	0,76	1,77	1,08	1,02	0,74	0,59	1,61	0,93	0,43	0,48	0,40
25x25x5	1,78	2,27	25	5	4	0,80	1,77	1,13	1,20	0,73	0,71	1,89	0,91	0,52	0,48	0,46
30x30x3	1,36	1,74	30	3	5	0,84	2,12	1,18	1,40	0,90	0,65	2,22	1,13	0,59	0,58	0,50
30x30x4	1,78	2,27	30	4	5	0,88	2,12	1,24	1,80	0,89	0,85	2,85	1,12	0,75	0,58	0,61
30x30x5	2,18	2,78	30	5	5	0,92	2,12	1,30	2,16	0,88	1,04	3,42	1,11	0,91	0,57	0,70
35x35x3	1,60	2,04	35	3	5	0,96	2,47	1,36	2,29	1,06	0,90	3,64	1,34	0,94	0,68	0,70
35x35x3,5	1,85	2,35	35	3,5	5	0,98	2,47	1,39	2,63	1,06	1,04	4,18	1,33	1,08	0,68	0,78
35x35x4	2,09	2,67	35	4	5	1,00	2,47	1,42	2,95	1,05	1,18	4,68	1,32	1,23	0,68	0,87
35x35x5	2,57	3,28	35	5	5	1,04	2,47	1,48	3,56	1,04	1,45	5,64	1,31	1,49	0,67	1,01
38x38x4,5	2,56	3,26	38	4,5	6	1,09	2,69	1,54	4,21	1,14	1,55	6,68	1,43	1,74	0,73	1,13
38x38x6	3,33	4,24	38	6	6	1,15	2,69	1,63	5,35	1,12	2,02	8,45	1,41	2,25	0,73	1,38
40x40x3	1,84	2,35	40	3	6	1,07	2,83	1,52	3,45	1,21	1,18	5,47	1,53	1,42	0,78	0,94
40x40x4	2,42	3,08	40	4	6	1,12	2,83	1,58	4,47	1,21	1,55	7,09	1,52	1,86	0,78	1,17
40x40x5	2,97	3,79	40	5	6	1,16	2,83	1,64	5,43	1,20	1,91	8,60	1,51	2,26	0,77	1,38
40x40x6	3,52	4,48	40	6	6	1,20	2,83	1,70	6,31	1,19	2,26	9,99	1,49	2,64	0,77	1,55
45x45x3	2,09	2,66	45	3	7	1,18	3,18	1,67	4,93	1,36	1,49	7,81	1,71	2,04	0,88	1,22
45x45x4	2,74	3,49	45	4	7	1,23	3,18	1,75	6,43	1,36	1,97	10,2	1,71	2,65	0,87	1,51
45x45x4,5	3,06	3,90	45	4,5	7	1,25	3,18	1,78	7,14	1,35	2,20	11,4	1,71	2,94	0,87	1,65
45x45x5	3,38	4,30	45	5	7	1,28	3,18	1,81	7,84	1,35	2,43	12,5	1,70	3,24	0,87	1,79
45x45x6	4,00	5,09	45	6	7	1,32	3,18	1,87	9,16	1,34	2,88	14,5	1,69	3,81	0,86	2,04
45x45x7	4,60	5,86	45	7	7	1,36	3,18	1,92	10,4	1,33	3,31	16,4	1,67	4,36	0,86	2,27
50x50x3	2,33	2,96	50	3	7	1,31	3,54	1,85	6,86	1,52	1,86	10,9	1,92	2,84	0,98	1,54
50x50x4	3,06	3,89	50	4	7	1,36	3,54	1,92	8,97	1,52	2,46	14,2	1,91	3,73	0,98	1,94

Designation	Mass	Sectional area	Dimensions			Distances of centre of gravity			Sectional properties about axes							
									axis y-y / axis z-z			axis u-u		axis v-v		
			$a = b$	t	r_{root}	$c_y = c_z$	c_u	c_v	$I_y = I_z$	$i_y = i_z$	$W_{el,y} = W_{el,z}$	I_u	i_u	I_v	i_v	$W_{el,v}$
	kg/m	cm²	mm	mm	mm	cm	cm	cm	cm⁴	cm	cm³	cm⁴	cm	cm⁴	cm	cm³
50x50x5	3,77	4,80	50	5	7	1,40	3,54	1,99	11,0	1,51	3,05	17,4	1,90	4,55	0,97	2,29
50x50x6	4,47	5,69	50	6	7	1,45	3,54	2,04	12,8	1,50	3,61	20,3	1,89	5,34	0,97	2,61
50x50x7	5,15	6,56	50	7	7	1,49	3,54	2,10	14,6	1,49	4,16	23,1	1,88	6,09	0,96	2,90
50x50x8	5,82	7,41	50	8	7	1,52	3,54	2,16	16,3	1,48	4,68	25,7	1,86	6,85	0,96	3,17
50x50x9	6,47	8,24	50	9	7	1,56	3,54	2,21	17,9	1,47	5,20	28,1	1,85	7,61	0,96	3,44
55x55x4	3,38	4,31	55	4	8	1,47	3,89	2,08	12,0	1,67	2,98	19,1	2,10	4,95	1,07	2,38
55x55x5	4,18	5,32	55	5	8	1,52	3,89	2,15	14,7	1,66	3,70	23,4	2,10	6,06	1,07	2,82
55x55x6	4,95	6,31	55	6	8	1,56	3,89	2,21	17,3	1,66	4,39	27,4	2,09	7,13	1,06	3,23
60x60x4	3,70	4,71	60	4	8	1,60	4,24	2,26	15,8	1,83	3,58	25,0	2,31	6,51	1,18	2,88
60x60x5	4,57	5,82	60	5	8	1,64	4,24	2,32	19,4	1,82	4,45	30,7	2,30	8,03	1,17	3,46
60x60x6	5,42	6,91	60	6	8	1,69	4,24	2,39	22,8	1,82	5,29	36,1	2,29	9,44	1,17	3,96
60x60x7	6,26	7,98	60	7	8	1,73	4,24	2,45	26,1	1,81	6,10	41,3	2,28	10,8	1,16	4,39
60x60x8	7,09	9,03	60	8	8	1,77	4,24	2,50	29,2	1,80	6,89	46,1	2,26	12,2	1,16	4,86
60x60x10	8,69	11,1	60	10	8	1,85	4,24	2,61	34,9	1,78	8,41	55,1	2,23	14,8	1,15	5,66
63x63x5	4,82	6,14	63	5	9	1,71	4,45	2,42	22,4	1,91	4,88	35,6	2,41	9,24	1,23	3,82
63x63x6	5,72	7,29	63	6	9	1,75	4,45	2,48	26,4	1,90	5,82	42,0	2,40	10,9	1,22	4,39
63x63x6,5	6,17	7,85	63	6,5	9	1,78	4,45	2,51	28,4	1,90	6,27	45,1	2,40	11,7	1,22	4,66
65x65x4	4,02	5,13	65	4	9	1,71	4,60	2,41	20,1	1,98	4,19	31,9	2,49	8,32	1,27	3,45
65x65x5	4,97	6,34	65	5	9	1,76	4,60	2,49	24,7	1,98	5,22	39,3	2,49	10,2	1,27	4,09
65x65x6	5,91	7,53	65	6	9	1,80	4,60	2,55	29,2	1,97	6,21	46,4	2,48	12,0	1,26	4,71
65x65x7	6,83	8,70	65	7	9	1,85	4,60	2,62	33,4	1,96	7,18	53,1	2,47	13,8	1,26	5,27
65x65x8	7,73	9,85	65	8	9	1,89	4,60	2,67	37,5	1,95	8,13	59,5	2,46	15,5	1,26	5,81
65x65x9	8,62	11,0	65	9	9	1,93	4,60	2,73	41,4	1,94	9,05	65,5	2,44	17,2	1,25	6,31
65x65x10	9,49	12,1	65	10	9	1,97	4,60	2,78	45,1	1,93	9,94	71,3	2,43	18,9	1,25	6,80
65x65x11	10,3	13,2	65	11	9	2,00	4,60	2,83	48,6	1,92	10,8	76,7	2,41	20,6	1,25	7,27
70x70x5	5,37	6,84	70	5	9	1,88	4,95	2,66	31,2	2,14	6,10	49,6	2,69	12,9	1,37	4,83
70x70x6	6,38	8,13	70	6	9	1,93	4,95	2,73	36,9	2,13	7,27	58,5	2,68	15,3	1,37	5,60

Designation	Mass	Sectional area	Dimensions			Distances of centre of gravity			Sectional properties about axes							
									axis y-y / axis z-z			axis u-u		axis v-v		
			$a = b$	t	r_{root}	$c_y = c_z$	c_u	c_v	$I_y = I_z$	$i_y = i_z$	$W_{el,y} = W_{el,z}$	I_u	i_u	I_v	i_v	$W_{el,v}$
	kg/m	cm²	mm	mm	mm	cm	cm	cm	cm⁴	cm	cm³	cm⁴	cm	cm⁴	cm	cm³
70x70x7	7,38	9,40	70	7	9	1,97	4,95	2,79	42,3	2,12	8,41	67,1	2,67	17,5	1,36	6,28
70x70x8	8,37	10,7	70	8	10	2,01	4,95	2,84	47,3	2,10	9,46	75,0	2,65	19,5	1,35	6,87
70x70x9	9,32	11,9	70	9	9	2,05	4,95	2,9	52,5	2,10	10,6	83,2	2,65	21,8	1,35	7,50
70x70x10	10,3	13,1	70	10	9	2,09	4,95	2,96	57,2	2,09	11,7	90,6	2,63	23,9	1,35	8,07
75x75x4	4,65	5,93	75	4	9	1,96	5,30	2,76	31,4	2,30	5,67	49,9	2,90	13,0	1,48	4,71
75x75x5	5,76	7,34	75	5	9	2,01	5,30	2,84	38,8	2,30	7,06	61,6	2,90	16,0	1,47	5,62
75x75x6	6,85	8,73	75	6	9	2,05	5,30	2,90	45,8	2,29	8,41	72,7	2,89	18,9	1,47	6,53
75x75x7	7,93	10,1	75	7	9	2,10	5,30	2,96	52,6	2,28	9,74	83,6	2,88	21,6	1,46	7,30
75x75x8	8,99	11,4	75	8	9	2,14	5,30	3,02	59,1	2,27	11,0	93,8	2,86	24,5	1,46	8,09
75x75x9	10,0	12,8	75	9	9	2,18	5,30	3,08	65,4	2,26	12,3	104	2,85	27,0	1,45	8,78
75x75x10	11,1	14,1	75	10	9	2,22	5,30	3,13	71,4	2,25	13,5	113	2,83	29,7	1,45	9,48
76x76x5	5,84	7,44	76	5	9	2,03	5,37	2,87	40,4	2,33	7,26	64,2	2,94	16,6	1,50	5,78
76x76x6,5	7,49	9,54	76	6,5	9	2,10	5,37	2,97	51,4	2,32	9,34	81,6	2,92	21,1	1,49	7,10
76x76x8	9,11	11,6	76	8	9	2,16	5,37	3,06	61,7	2,30	11,3	97,9	2,90	25,4	1,48	8,30
76x76x9,5	10,7	13,6	76	9,5	9	2,22	5,37	3,14	71,4	2,29	13,3	113	2,88	29,6	1,47	9,43
80x80x5	6,17	7,86	80	5	10	2,12	5,66	3,00	47,1	2,45	8,02	74,8	3,09	19,5	1,57	6,48
80x80x6	7,34	9,35	80	6	10	2,17	5,66	3,07	55,8	2,44	9,57	88,7	3,08	23,0	1,57	7,48
80x80x7	8,49	10,8	80	7	10	2,21	5,66	3,13	64,2	2,44	11,1	102	3,07	26,4	1,56	8,43
80x80x8	9,63	12,3	80	8	10	2,26	5,66	3,19	72,2	2,43	12,6	115	3,06	29,9	1,56	9,37
80x80x9	10,8	13,7	80	9	10	2,30	5,66	3,25	80,0	2,42	14,0	127	3,05	33,0	1,55	10,2
80x80x10	11,9	15,1	80	10	10	2,34	5,66	3,30	87,5	2,41	15,4	139	3,03	36,4	1,55	11,0
90x90x5	6,97	8,88	90	5	11	2,35	6,36	3,33	67,7	2,76	10,2	107	3,48	28,0	1,78	8,40
90x90x6	8,30	10,6	90	6	11	2,41	6,36	3,40	80,3	2,76	12,2	128	3,47	33,1	1,77	9,73
90x90x7	9,61	12,2	90	7	11	2,45	6,36	3,47	92,6	2,75	14,1	147	3,46	38,3	1,77	11,0
90x90x8	10,9	13,9	90	8	11	2,50	6,36	3,53	104	2,74	16,1	166	3,45	43,1	1,76	12,2
90x90x9	12,2	15,5	90	9	11	2,54	6,36	3,59	116	2,73	17,9	184	3,44	47,9	1,76	13,3
90x90x10	13,4	17,1	90	10	11	2,58	6,36	3,65	127	2,72	19,8	201	3,42	52,6	1,75	14,4

Designation	Mass	Sectional area	Dimensions			Distances of centre of gravity			Sectional properties about axes							
									axis y-y / axis z-z			axis u-u		axis v-v		
			$a = b$	t	r_{root}	$c_y = c_z$	c_u	c_v	$I_y = I_z$	$i_y = i_z$	$W_{el,y} = W_{el,z}$	I_u	i_u	I_v	i_v	$W_{el,v}$
	kg/m	cm²	mm	mm	mm	cm	cm	cm	cm⁴	cm	cm³	cm⁴	cm	cm⁴	cm	cm³
90x90x11	14,7	18,7	90	11	11	2,62	6,36	3,70	138	2,71	21,6	218	3,42	56,9	1,74	15,4
90x90x16	20,7	26,4	90	16	11	2,81	6,36	3,97	186	2,66	30,1	294	3,34	79,4	1,74	20,0
100x100x6	9,26	11,8	100	6	12	2,64	7,07	3,74	111	3,07	15,1	176	3,87	45,8	1,97	12,2
100x100x7	10,7	13,7	100	7	12	2,69	7,07	3,81	128	3,06	17,5	204	3,86	52,7	1,96	13,8
100x100x8	12,2	15,5	100	8	12	2,74	7,07	3,87	145	3,06	19,9	230	3,85	59,9	1,96	15,5
100x100x9	13,6	17,3	100	9	12	2,78	7,07	3,93	161	3,05	22,3	256	3,84	66,1	1,95	16,8
100x100x10	15,0	19,2	100	10	12	2,82	7,07	3,99	177	3,04	24,6	280	3,83	73,0	1,95	18,3
100x100x11	16,4	20,9	100	11	12	2,86	7,07	4,05	192	3,03	26,9	305	3,81	79,1	1,94	19,5
100x100x12	17,8	22,7	100	12	12	2,90	7,07	4,11	207	3,02	29,1	328	3,80	85,7	1,94	20,9
100x100x13	19,2	24,5	100	13	12	2,94	7,07	4,16	221	3,01	31,3	350	3,78	91,7	1,94	22,0
100x100x14	20,6	26,2	100	14	12	2,98	7,07	4,22	235	3,00	33,5	372	3,77	97,9	1,93	23,2
100x100x15	21,9	27,9	100	15	12	3,02	7,07	4,27	249	2,98	35,6	393	3,75	104	1,93	24,4
100x100x16	23,2	29,6	100	16	12	3,06	7,07	4,32	262	2,97	37,7	413	3,74	110	1,93	25,5
110x110x6	10,2	13,0	110	6	12	2,89	7,78	4,09	150	3,39	18,4	237	4,27	61,6	2,18	15,1
110x110x7	11,8	15,1	110	7	12	2,94	7,78	4,16	173	3,39	21,4	274	4,27	70,9	2,17	17,1
110x110x8	13,4	17,1	110	8	12	2,99	7,78	4,22	195	3,38	24,4	311	4,26	80,1	2,16	19,0
110x110x9	15,0	19,1	110	9	12	3,03	7,78	4,28	217	3,37	27,3	346	4,25	89,1	2,16	20,8
110x110x10	16,6	21,2	110	10	13	3,06	7,78	4,33	238	3,35	30,0	378	4,23	97,7	2,15	22,6
110x110x11	18,2	23,2	110	11	13	3,11	7,78	4,39	259	3,34	32,8	411	4,21	106	2,14	24,2
110x110x12	19,7	25,1	110	12	13	3,15	7,78	4,45	279	3,33	35,5	443	4,20	115	2,14	25,8