Temat nr 1 nazwisko: Badiane Lamine
Select an I-shape section made of S275 steel for a 3.5 m long footbridge so that the load resulting from the weight of an adult with a child (100kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 2 nazwisko: Kamiloglu Eylül Bahar
Select two unequal angle sections made of E295 steel for a 4 m long footbridge so that the load resulting from the weight of an adult with a child (130kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 3 nazwisko: Mohamed Mohanad Adel Abdelazeem
Select two equal angle sections made of S275 steel for a 4 m long balcony so that the load resulting from the weight of an adult with a child (110kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 4 nazwisko: Muhala Norman Tawanda
Select two equal angle sections made of S275 steel for a 3.5 m long balcony so that the load resulting from the weight of an adult with a child (110kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 5 nazwisko: Naili Amin
Select two equal angle sections made of S235 steel for a 3.5 m long balcony so that the load resulting from the weight of an adult with a child (120kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 6 nazwisko: Tawfik Abdulrahman
Select two equal angle sections made of S235 steel for a 1.5 m long footbridge so that the load resulting from the weight of an adult with a child (110kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 7 nazwisko: Hachem Boushaba
Select two equal angle sections made of S275 steel for a 2 m long balcony so that the load resulting from the weight of an adult with a child (120kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 8 nazwisko: Kkhiter Abdennour
Select an I-shape section made of S235 steel for a 2.5 m long balcony so that the load resulting from the weight of an adult with a child (110kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 9 nazwisko: Bachir Salah Eddine
Select two unequal angle sections made of E295 steel for a 3.5 m long balcony so that the load resulting from the weight of an adult with a child (100kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

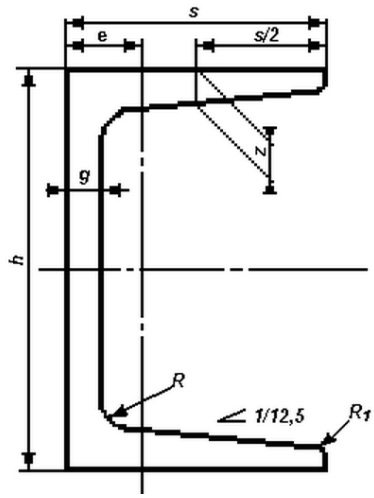
Temat nr 10 nazwisko: Salma Rhayate
Select a channel section made of S275 steel for a 4 m long balcony so that the load resulting from the weight of an adult with a child (130kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 11 nazwisko: Zarat Anis
Select an I-shape section made of E295 steel for a 3 m long balcony so that the load resulting from the weight of an adult with a child (100kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 12 nazwisko: Belaid Yanis
Select a channel section made of E295 steel for a 2 m long balcony so that the load resulting from the weight of an adult with a child (120kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 13 nazwisko: Labrach Alaa Lamisse M H
Select two unequal angle sections made of S275 steel for a 3.5 m long footbridge so that the load resulting from the weight of an adult with a child (120kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

Temat nr 14 nazwisko: Kadid Abdelrrahim
Select an I-shape section made of E295 steel for a 4 m long footbridge so that the load resulting from the weight of an adult with a child (140kg) is safe.
The homework must be done neatly. The work should include all the data for the calculations, the calculations with a description (write down what you are calculating), the results, and the necessary diagrams. Aesthetics and the overall approach to the topic are also important.
The auxiliary materials are attached at the end of the file.

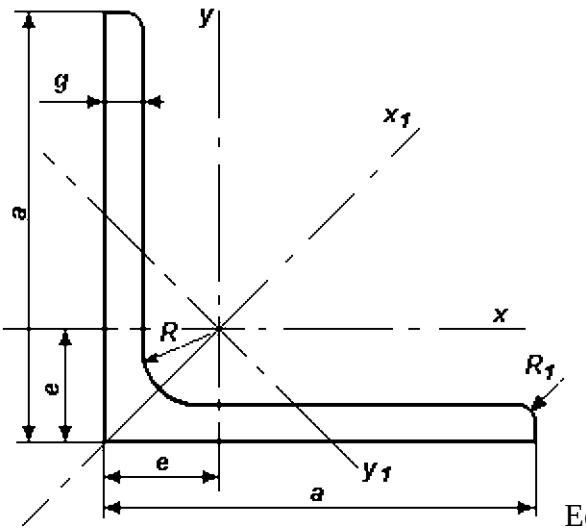


Channel section

I_x, I_y - moment of Interia
W_x, W_y – section modulus

Oznaczenie	*h*	*s*	*g*	*z=R*	R_1	*e*	*A*	*G*
	mm						cm^2	kg/m
35x35	35	35	5	6,0	3,0	14,2	5,27	4,1
40	40	20	5,0	5,0	2,5	6,5	3,5	2,76
45	45	35	5,0	6,0	3,0	–	–	5,03
50	50	38	5,0	7,0	3,5	13,7	7,1	5,59
65	65	42	5,5	7,5	4,0	14,2	9,0	7,09
75x38	75	38	5	6,0	3,0	14,0	6,41	5,0
76x55	76	55	10	11,2	5,6	19,5	17,6	13,8
80	80	45	6,0	8,0	4,0	14,5	11,0	8,64
80p	80	45	5,0	8,0	4,0	14,5	10,4	8,16
92x27	92	27	9	10,7	5,4	8,5	12,0	9,4
100	100	50	6,0	8,5	4,5	15,5	13,5	10,6
100p	100	50	5,0	8,5	4,5	15,5	12,7	9,97
120	120	55	7,0	9,0	4,5	16,0	17,0	13,3
120p	120	55	5,5	9,0	4,5	16,0	15,5	12,2
140	140	60	7,0	10,0	5,0	17,5	20,4	16,0
140p	140	60	5,5	10,0	5,0	17,5	19,2	15,1
160	160	65	7,5	10,5	5,5	18,4	24,0	18,8
160p	160	65	5,5	10,5	5,5	18,4	21,3	16,7
180	180	70	8,0	11,0	5,5	19,2	28,0	22,0
180p	180	70	6,0	11,0	5,5	19,2	24,9	19,5
200	200	75	8,5	11,5	6,0	20,1	32,2	25,3
200p	200	75	6,5	11,5	6,0	20,1	28,7	22,5
200x100	200	100	9	11,0	5,5	29,3	36,6	28,7
220	220	80	9,0	12,5	6,5	21,4	37,4	29,4
220p	220	80	7,0	12,5	6,5	21,4	33,6	26,4
240	240	85	9,5	13,0	6,5	22,3	42,3	33,2
240p	240	85	7,0	13,0	6,5	22,3	37,0	29,0
260	260	90	10	14,0	7,0	23,6	48,3	37,9
260p	260	90	7,5	14,0	7,0	23,6	42,6	33,4
280	280	95	10	15,0	7,5	25,3	53,3	41,8
300	300	100	10	16,0	8,0	27,0	58,8	46,2
300p	300	100	7,5	16,0	8,0	27,0	52,2	41,0
300x85	300	85	8	13,5	6,7	21,7	43,9	34,5
300x100	300	100	11	16,5	8,5	27,1	63,1	49,5
320	320	100	14	16,0	8,8	26,0	75,8	59,5
335x90	335	90	8	14,0	7,0	22,0	49,4	38,8
350	350	100	14	16,0	8,0	24,0	77,3	60,7
380	380	102	14	16,5	8,0	23,8	80,4	63,1
400	400	110	14	18,0	9,0	26,5	91,5	71,8

Oznaczenie	I_x	I_y	W_x	W_y	i_x	i_y
	cm^4		cm^3		cm	
35x35	11,3	6,66	6,43	3,20	1,46	1,12
40	7,26	1,06	3,63	0,79	1,44	0,55
50	26,4	9,12	10,56	3,75	1,93	1,13
65	57,5	14,1	17,69	5,07	2,52	1,25
75x38	19,8	8,64	5,28	3,60	1,76	1,16
76x55	142	45,1	37,4	12,70	2,84	1,60
80	106	19,4	26,50	6,36	3,10	1,33
80p	103	18,9	25,75	6,20	3,15	1,35
92x27	119	54,0	25,9	29,19	3,15	2,12
100	206	29,3	41,20	8,49	3,91	1,47
100p	202	28,5	40,40	8,26	3,99	1,50
120	364	43,2	60,67	11,08	4,63	1,59
120p	351	41,8	58,50	10,72	4,76	1,64
140	605	62,7	86,43	14,75	5,45	1,75
140p	584	60,5	83,43	14,24	5,52	1,78
160	925	85,3	115,6	18,30	6,21	1,89
160p	882	81,6	110,3	17,51	6,43	1,96
180	1350	114	150,0	22,44	6,94	2,02
180p	1287	109	143,0	21,46	7,19	2,09
200	1940	148	194,0	26,96	7,76	2,14
200p	1821	142	182,1	25,87	7,97	2,22
200x100	2359	327	235,9	46,28	8,03	2,99
220	2690	197	244,5	33,62	8,48	2,30
220p	2584	190	234,9	32,42	8,77	2,38
240	3600	248	300,0	39,55	9,23	2,42
240p	3404	238	283,7	37,96	9,59	2,54
260	4820	317	370,8	47,74	9,99	2,56
260p	4570	304	351,5	45,78	10,4	2,67
280	6280	399	448,6	57,25	10,9	2,74
300	8030	495	535,3	67,81	11,7	2,90
300p	7644	473	509,6	64,79	12,1	3,01
300x85	6048	259	403,2	40,92	11,7	2,43
300x100	8479	524	565,3	71,88	11,6	2,88
320	10870	597	679,4	80,68	12,0	2,81
335x90	8233	338	491,5	49,71	12,9	2,62
350	12840	570	733,7	75,00	12,9	2,72
380	15760	615	829,5	78,64	14,0	2,77
400	20350	846	1017,5	101,3	14,9	3,04

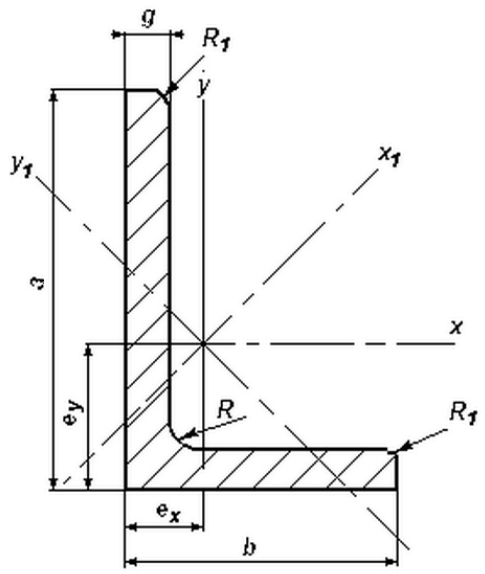


Equal angle section

I_x, I_y - moment of Interia
W_x, W_y – section modulus

Oznaczenie	*a*	*g*	*R*	R_1	*e*	*A*	*G*
	mm					cm^2	kg/m
20x20x3	20	3	3,5	2	5,9	1,12	0,88
25x25x3	25	3	3,5	2	7,1	1,42	1,11
30x30x3	30	3	5	2,5	8,2	1,74	1,36
30x30x4	30	4	5	2,5	8,7	2,27	1,78
35x35x3	35	3	5	2,5	9,5	2,04	1,6
35x35x4	35	4	5	2,5	9,9	2,67	2,09
35x35x5	35	5	5	2,5	10,3	3,28	2,57
40x40x3	40	3	6	3	10,6	2,35	1,84
40x40x4	40	4	6	3	11,1	3,08	2,42
40x40x5	40	5	6	3	11,5	3,79	2,97
45x45x3	45	3	7	3,5	11,6	2,66	2,09
45x45x4	45	4	7	3,5	12,3	3,49	2,74
45x45x5	45	5	7	3,5	12,8	4,3	3,38
50x50x3	50	3	7	3,5	12,9	2,96	2,33
50x50x4	50	4	7	3,5	13,6	3,89	3,06
50x50x5	50	5	7	3,5	14	4,8	3,77
50x50x6	50	6	7	3,5	14,5	5,69	4,47
50x50x7	50	7	7	3,5	14,9	6,56	5,15
60x60x4	60	4	8	4	16	4,76	3,72
60x60x5	60	5	8	4	16,4	5,82	4,57
60x60x6	60	6	8	4	16,9	6,91	5,42
60x60x7	60	7	8	4	17,7	9,03	7,09
60x60x8	60	8	8	4	17,6	9,03	7,09
65x65x6	65	6	9	4,5	17,9	7,53	5,91
65x65x7	65	7	9	4,5	18,3	8,7	6,83
65x65x9	65	9	9	4,5	19,1	10,98	8,62
75x75x4	75	4	9	4,5	19,5	6,02	4,72
75x75x5	75	5	9	4,5	20	7,34	5,76
75x75x6	75	6	9	4,5	20,5	8,73	6,85
75x75x7	75	7	9	4,5	20,9	10,1	7,94
75x75x8	75	8	9	4,5	21,3	11,4	8,99
75x75x9	75	9	9	4,5	21,7	12,78	10,03

Oznaczenie	$I_x=I_y$	I_{x1}	I_{y1}	$W_x=W_y$	W_{x1}	W_{y1}	$i_x=i_y$	i_{x1}	i_{y1}
	cm^4			cm^3			cm		
20x20x3	0,39	0,61	0,16	0,28	0,43	0,16	0,59	0,74	0,38
25x25x3	0,8	1,26	0,33	0,45	0,71	0,26	0,75	0,94	0,48
30x30x3	1,41	2,22	0,59	0,65	1,05	0,38	0,90	1,13	0,58
30x30x4	1,8	2,85	0,75	0,85	1,34	0,50	0,89	1,12	0,57
35x35x3	2,29	3,63	0,95	0,90	1,47	0,53	1,06	1,33	0,68
35x35x4	2,95	4,68	1,23	1,18	1,89	0,69	1,05	1,32	0,68
35x35x5	3,56	5,64	1,49	1,44	2,28	0,85	1,04	1,31	0,67
40x40x3	3,45	5,45	1,44	1,17	1,93	0,69	1,21	1,52	0,78
40x40x4	4,47	7,09	1,86	1,55	2,51	0,91	1,20	1,52	0,78
40x40x5	5,43	8,59	2,26	1,91	3,04	1,12	1,20	1,51	0,77
45x45x3	4,93	7,78	2,07	1,48	2,45	0,88	1,36	1,71	0,88
45x45x4	6,43	10,18	2,68	1,97	3,20	1,16	1,36	1,71	0,88
45x45x5	7,83	12,42	3,26	2,43	3,90	1,43	1,35	1,70	0,87
50x50x3	6,86	10,84	2,88	1,85	3,07	1,10	1,52	1,91	0,99
50x50x4	8,97	14,22	3,73	2,46	4,02	1,45	1,52	1,91	0,98
50x50x5	11	17,38	4,55	3,06	4,92	1,79	1,51	1,90	0,97
50x50x6	12,8	20,28	5,32	3,61	5,74	2,12	1,50	1,89	0,97
50x50x7	14,6			4,16	0,00	0,00	1,49	0,00	0,00
60x60x4	16,1			3,66	0,00	0,00	1,84	0,00	0,00
60x60x5	19,4	30,71	8,03	4,45	7,24	2,60	1,83	2,30	1,17
60x60x6	22,8	36,14	9,44	5,29	8,52	3,10	1,82	2,29	1,17
60x60x7	29,2			6,90	0,00	0,00	1,80	0,00	0,00
60x60x8	29,15	46,15	12,16	6,88	10,88	4,05	1,80	2,26	1,16
65x65x6	29,19	46,27	12,11	6,20	10,07	3,63	1,97	2,48	1,27
65x65x7	33,43	53	13,87	7,16	11,54	4,20	1,96	2,47	1,26
65x65x9	41,37	65,45	17,3	9,01	14,25	5,33	1,94	2,44	1,26
75x75x4	32,3			5,82	0,00	0,00	2,32	0,00	0,00
75x75x5	38,8	61,47	16,08	7,05	11,60	4,13	2,30	2,89	1,48
75x75x6	45,8	72,72	18,94	8,40	13,72	4,91	2,29	2,89	1,47
75x75x7	52,4	83,49	21,73	9,69	15,75	5,68	2,28	2,88	1,47
75x75x8	59,1	93,8	24,46	11,01	17,69	6,44	2,28	2,87	1,46
75x75x9	65,4	103,66	27,14	12,27	19,55	7,20	2,26	2,85	1,46

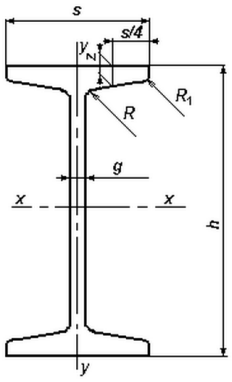


Unequal angle section

I_x, I_y - moment of Interia
W_x, W_y – section modulus

Oznaczenie	a	b	g	R	R_1	e_x	e_y	A	G
	mm							cm^2	kg/m
30x20x3	30	20	3	4	2	9,9	5,0	1,43	1,12
30x20x4	30	20	4	4	2	10,4	5,4	1,86	1,45
40x25x3	40	25	3	4	2	13,2	5,8	1,88	1,47
40x25x4	40	25	4	4	2	13,6	6,2	2,43	1,90
40x25x5	40	25	5	4	2	14,0	6,6	3,02	2,36
45x30x4	45	30	4	4	2	14,8	7,4	2,86	2,23
45x30x5	45	30	5	4	2	15,2	7,8	3,52	2,75
60x40x5	60	40	5	6	3	19,6	9,7	4,79	3,74
60x40x6	60	40	6	6	3	20,0	10,1	5,68	4,43
65x50x5	65	50	5	6	3	19,9	12,5	5,54	4,32
65x50x6	65	50	6	6	3	20,4	12,9	6,58	5,13
65x50x7	65	50	7	6	3	20,8	13,3	7,6	5,93
65x50x8	65	50	8	6	3	21,1	13,7	8,6	6,71
70x50x7	70	50	7	7	3,5	22,8	12,9	7,95	6,20
75x50x5	75	50	5	7	3,5	23,9	11,7	6,05	4,72
75x50x6	75	50	6	7	3,5	24,4	12,1	7,19	5,61
75x50x7	75	50	7	7	3,5	24,8	12,5	8,31	6,48
75x50x8	75	50	8	7	3,5	25,2	12,9	9,41	7,34
80x40x6	80	40	6	7	3,5	29,5	8,8	6,89	5,37
80x60x6	80	60	6	8	4	24,7	14,8	8,11	6,33
80x60x7	80	60	7	8	4	25,1	15,2	9,38	7,32
80x60x8	80	60	8	8	4	25,5	15,6	10,6	8,27
80x65x10	80	65	10	8	4	25,5	18,1	13,6	10,6
90x60x8	90	60	8	9	4,5	29,7	14,9	11,4	8,89
100x50x8	100	50	8	9	4,5	35,9	11,2	11,4	8,89
100x65x7	100	65	7	10	5	32,3	15,1	11,2	8,74
100x65x8	100	65	8	10	5	32,7	15,5	12,7	9,91
100x65x10	100	65	10	10	5	33,6	16,3	15,6	12,2
100x75x8	100	75	8	10	5	31,0	18,7	13,5	10,5
120x80x8	120	80	8	11	5,5	38,3	18,7	15,5	12,1
120x80x10	120	80	10	11	5,5	39,2	19,5	19,1	14,9
120x80x12	120	80	12	11	5,5	40,0	20,3	22,7	17,7
125x75x8	125	75	8	11	5,5	41,4	16,8	15,5	12,1
125x75x9	125	75	9	11	5,5	41,8	17,2	17,3	13,5
125x75x10	125	75	10	11	5,5	42,3	17,6	19,1	14,9
125x75x12	125	75	12	11	5,5	43,1	18,4	22,7	17,7
130x65x10	130	65	10	11	5,5	46,5	14,5	18,6	14,5
150x100x10	150	100	10	13	6,5	48,0	23,4	24,2	18,9
150x100x12	150	100	12	13	6,5	48,9	24,2	28,7	22,4
200x100x10	200	100	10	15	7,5	69,3	20,1	29,2	22,8
200x100x12	200	100	12	15	7,5	70,3	21,0	34,8	27,1

Oznaczenie	I_x	I_y	I_{x1}	I_{y1}	W_x	W_y	i_x	i_y	i_{x1}	i_{y1}
	cm^4				cm^3		cm			
30x20x3	1,25	0,44	1,43	0,26	0,62	0,29	0,93	0,55	1,00	0,43
30x20x4	1,59	0,55	1,84	0,33	0,81	0,38	0,92	0,54	0,99	0,42
40x25x3	3,02	0,91	3,39	0,54	1,13	0,47	1,27	0,70	1,34	0,54
40x25x4	3,89	1,16	4,35	0,70	1,47	0,62	1,27	0,69	1,34	0,54
40x25x5	4,69	1,39	5,23	0,85	1,80	0,76	1,25	0,68	1,32	0,53
45x30x4	5,77	2,05	6,63	1,19	1,91	0,91	1,42	0,85	1,52	0,65
45x30x5	6,96	2,47	8,00	1,45	2,34	1,11	1,41	0,84	1,51	0,64
60x40x5	17,2	6,11	19,8	3,54	4,26	2,02	1,89	1,13	2,03	0,86
60x40x6	20,1	7,12	23,1	4,15	5,03	2,38	1,88	1,12	2,02	0,85
65x50x5	23,2	11,9	28,8	6,32	5,14	3,17	2,05	1,47	2,28	1,07
65x50x6	27,2	14,0	33,8	7,43	6,10	3,77	2,03	1,46	2,27	1,06
65x50x7	31,1	15,9	38,5	8,51	7,04	4,33	2,02	1,45	2,25	1,06
65x50x8	34,8	17,7	42,9	9,57	7,93	4,88	2,01	1,43	2,23	1,05
70x50x7	38,3	16,2	45,5	9,09	8,11	4,37	2,19	1,43	2,39	1,07
75x50x5	34,4	12,3	39,6	7,11	6,73	3,21	2,38	1,43	2,56	1,08
75x50x6	40,5	14,4	46,6	8,36	8,00	3,80	2,37	1,42	2,55	1,08
75x50x7	46,4	16,5	53,3	9,57	9,24	4,40	2,36	1,41	2,53	1,07
75x50x8	52,0	18,4	59,7	10,8	10,4	4,96	2,35	1,40	2,52	1,07
80x40x6	44,9	7,60	47,6	4,92	8,89	2,43	2,55	1,05	2,63	0,85
80x60x6	51,4	24,8	62,8	13,4	9,29	5,49	2,52	1,75	2,78	1,29
80x60x7	59,6	28,4	72,0	15,4	10,9	6,34	2,52	1,74	2,77	1,28
80x60x8	66,3	31,8	80,8	17,3	12,2	7,16	2,50	1,73	2,76	1,28
80x65x10	82,2	48,3	106	24,8	15,1	10,3	2,46	1,88	2,79	1,35
90x60x8	92,5	33,0	107	19	15,3	7,32	2,85	1,70	3,06	1,29
100x50x8	116	19,5	123	12,7	18,1	5,03	3,19	1,31	3,28	1,06
100x65x7	113	37,6	128	22	16,7	7,54	3,18	1,83	3,38	1,40
100x65x8	127	42,2	144	24,8	18,9	8,53	3,16	1,82	3,37	1,40
100x65x10	154	51,0	175	30,1	23,2	10,5	3,14	1,81	3,35	1,39
100x75x8	133	64,1	163	34,6	19,3	11,4	3,14	2,18	3,47	1,60
120x80x8	226	80,8	260	46,6	27,7	13,2	3,82	2,28	4,10	1,73
120x80x10	276	98,1	317	58,8	34,2	16,2	3,80	2,27	4,07	1,75
120x80x12	323	114	371	66,6	40,4	19,1	3,77	2,24	4,04	1,71
125x75x8	247	67,6			29,5	11,6	3,99	2,09		
125x75x9	275	75,0			33,1	13,0	3,99	2,08		
125x75x10	302	82,1			36,5	14,3	3,98	2,07		
125x75x12	354	95,5			43,2	16,9	3,95	2,05		
130x65x10	320	54,2	339	35,2	38,3	10,7	4,15	1,71	4,27	1,38
150x100x10	552	198	637	112	54,1	25,8	4,78	2,86	5,13	2,15
150x100x12	650	232	749	132	64,3	30,6	4,76	2,84	5,11	2,14
200x100x10	1220	210	1290	135	93,3	26,3	6,46	2,68	6,65	2,15
200x100x12	1440	247	1530	159	111,0	31,3	6,43	2,66	6,63	2,14



I-shape section

Oznaczenie	*h*	*s*	*g*	*z*	*R*	R_1	*A*	*G*
	mm						cm^2	kg/m
80	80	42	3,9	5,9	3,9	2,3	7,57	5,94
100	100	50	4,5	6,8	4,5	2,7	10,6	8,34
120	120	58	5,1	7,7	5,1	3,1	14,2	11,1
140	140	66	5,7	8,6	5,7	3,4	18,2	14,3
160	160	74	6,3	9,5	6,3	3,8	22,8	17,9
180	180	82	6,9	10	6,9	4,1	27,9	21,9
200	200	90	7,5	11	7,5	4,5	33,4	26,2
200p	200	90	6,0	11	7,5	4,5	30,9	24,2
220	220	98	8,1	12	8,1	4,9	39,5	31,1
220p	220	98	6,1	12	8,1	4,9	35,8	28,1
240	240	106	8,7	13	8,7	5,2	46,1	36,2
240p	240	106	6,7	13	8,7	5,2	41,9	32,9
260	260	113	9,4	14	9,4	5,6	53,3	41,9
260p	260	113	6,9	14	9,4	5,6	47,7	37,4
300	300	125	10,8	16	10,8	6,5	69	54,2
300p	300	125	8,3	16	10,8	6,5	62,5	49,1
340	340	137	12,2	18	12,2	7,3	86,7	68,0
340p	340	137	9,7	18	12,2	7,3	79,3	62,3
360	360	143	13,0	20	13,0	7,8	97	76,1
360p	360	143	10,5	20	13,0	7,8	89,2	70,0
400	400	155	14,4	22	14,4	8,6	118	92,4
400p	400	155	11,9	22	14,4	8,6	109	85,7
450	450	170	16,2	24	16,2	9,7	147	115
450p	450	170	13,7	24	16,2	9,7	137	108
500	500	185	18,0	27	18,0	10,8	179	141
500p	500	185	15,5	27	18,0	10,8	169	133
550	550	200	19,0	30	19,0	11,9	212	167

Oznaczenie	I_x	I_y	W_x	W_y	i_x	i_y
	cm^4		cm^3		cm	
80	77,8	6,29	19,5	3,0	3,21	0,91
100	171	12,2	34,2	4,9	4,02	1,07
120	328	21,5	54,7	7,4	4,81	1,23
140	573	35,2	81,9	11	5,61	1,39
160	935	54,7	117	15	6,40	1,55
180	1450	81,3	161	20	7,21	1,71
200	2140	117	214	26	8,00	1,87
200p	2073	117	207	26	8,19	1,95
220	3060	162	278	33	8,80	2,03
220p	2940	162	267	33	9,06	2,13
240	4250	221	354	42	9,60	2,19
240p	4090	220	341	42	9,88	2,29
260	5740	288	442	51	10,4	2,32
260p	5490	287	422	51	10,7	2,45
300	9800	451	653	72	11,9	2,56
300p	9420	450	628	72	12,3	2,68
340	15700	674	923	98	13,5	2,79
340p	15140	672	890	98	13,8	2,91
360	19610	818	1090	114	14,2	2,90
360p	18940	815	1053	114	14,6	3,02
400	29210	1160	1460	149	15,7	3,14
400p	28300	1156	1415	149	16,1	3,25
450	45850	1730	2040	203	17,7	3,43
450p	44550	1725	1980	203	18,0	3,55
500	68740	2480	2750	268	19,6	3,72
500p	66960	2472	2678	267	19,9	3,82
550	99180	3490	3610	349	21,6	4,06

Materials parameters

Steel designation	**kr**	**krj**	**krc**	**kg**	**kgj**	**kgo**	**ks**	**ksj**	**kso**
S185	100	55	30	120	65	40	65	44	23
S235	120	65	35	145	75	50	75	50	27
S275	130	70	40	155	85	55	85	60	30
E295	145	80	45	170	95	60	90	65	35
E335	160	95	55	195	115	75	105	75	40
E360	175	110	60	210	130	85	115	85	45
	kc=kr	**kcj=krj**					**kt=ks**	**ktj=ksj**	**kto=kso**
	ko=0.8kc								