

Channels

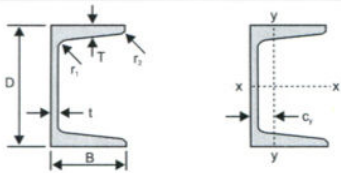
- ◆ Tapered Flange
- ◆ Parallel Flange

Channels

Rolling Tolerances - EN 10279 : 2000

This European standard specifies requirements for the tolerances on dimensions, shape and mass on hot rolled steel channels with parallel flanges.

Designation	Property	Range mm	Tolerance mm	
	Height h	$h \leq 65$ $65 < h \leq 200$ $200 < h \leq 400$ $400 < h$	± 1.5 ± 2.0 ± 3.0 ± 4.0	
	Flange Width b	$b \leq 50$ $50 < b \leq 100$ $100 < b \leq 125$ $125 < b$	± 1.5 ± 2.0 ± 2.5 ± 3.0	
	Web Thickness s	$s \leq 10$ $10 < s \leq 15$ $15 < s$	± 0.5 ± 0.7 ± 1.0	
	Flange Thickness t	$t \leq 10$ $10 < t \leq 15$ $15 < t$	Tolerance limited by weight	-0.5 -1 -1.5
	Heel Radius r	All Size	$< 0.3 \cdot t$	
	Out Of Squareness K + K'	$b \leq 100$ $100 < b$	2 2% of b	
	Web Flatness f	$h \leq 100$ $100 < h \leq 200$ $200 < h \leq 400$ $400 < h$	± 0.5 ± 1.0 ± 1.5 ± 1.5	
	Straightness (x direction)	$h \leq 150$ $150 < h \leq 300$ $300 < h$	0.30% L 0.20% L 0.15% L	
	Straightness (y direction)	$h \leq 150$ $150 < h \leq 300$ $300 < h$	0.50% L 0.30% L 0.20% L	
Mass Per Unit Length	kg/m	$h \leq 125$ $125 < h$	$\pm 6.0\%$ $\pm 4.0\%$	
Standard	Length	All	100	0
Alternative Standard (by agreement)	L	All	50	-50

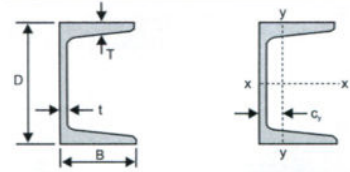


TAPERED FLANGE

Designation Size	Mass Per Metre	Thickness Web	Flange	Root Radius	Toe Radius	Area Of Section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus	
DxBxt mm	kg/m	t mm	T mm	r ₁ mm	r ₂ mm	A cm ²	C _y cm	I _x cm ⁴	I _y cm ⁴	r _x cm	r _y cm	Z _x cm ³	Z _y cm ⁴
50x25x5	3.86	5.0	6.0	6	3	4.92	0.81	16.8	2.49	1.85	0.71	6.73	1.48
75x40x5	6.92	5.0	7.0	8	4	8.82	1.27	75.9	12.4	2.93	1.19	20.2	4.54
100x50x5	9.36	5.0	7.5	8	4	11.9	1.55	189	26.9	3.99	1.50	37.8	7.82
125x65x6	13.40	6.0	8.0	8	4	17.1	1.94	425	65.5	4.99	1.96	68.0	14.4
150x75x6.5	18.60	6.5	10.0	10	5	23.7	2.31	864	122	6.04	2.27	115	23.6
150x75x9	24.00	9.0	12.5	15	7.5	30.5	2.31	1060	151	5.90	2.22	141	29.1
180x75x7	21.40	7.0	10.5	11	5.5	27.2	2.15	1380	137	7.12	2.24	154	25.5
200x80x7.5	24.60	7.5	11.0	12	6	31.3	2.24	1950	177	7.89	2.38	195	30.8
200x90x8	30.30	8.0	13.5	14	7	38.7	2.77	2490	286	8.02	2.72	249	45.9
230x80x8	28.40	8.0	12.0	13	6.5	36.1	2.15	2900	200	8.96	2.35	252	34.2
250x90x9	34.60	9.0	13.0	14	7	44.1	2.42	4180	306	9.74	2.63	335	46.5
250x90x11	40.20	11.0	14.5	17	8.5	51.2	2.39	4690	342	9.47	2.58	375	51.7
300x90x9	38.10	9.0	12.0	14	7	48.6	2.23	6440	325	11.5	2.59	429	48.0
300x90x10	43.80	10.0	15.5	19	9.5	55.7	2.33	7400	373	11.5	2.59	494	56.0
300x90x12	48.60	12.0	16.0	19	9.5	61.9	2.28	7870	379	11.3	2.48	525	56.4
380x100x10.5	54.50	10.5	16.0	18	9	69.4	2.41	14500	557	14.5	2.83	762	73.3
380x100x13	62.00	13.0	16.5	18	9	79.0	2.29	15600	584	14.1	2.72	822	75.8
380x100x13	67.30	13.0	20.0	24	12	85.7	2.25	17600	655	14.3	2.76	926	87.8

Note : The flange thickness is measured at the centre of the flange

CHANNELS (Imperial Units)



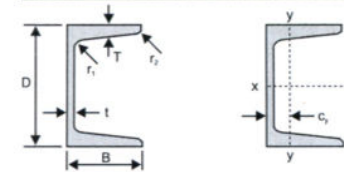
TAPERED FLANGE

Designation Size	Mass Per Metre		Depth Of Section	Width Of Section	Thickness Web Flange		Area Of Section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus		Plastic Modulus	
in x in	lb/ft	kg/m	D	B	t	T	A	C _y	I _x	I _y	r _x	r _y	Z _x	Z _y	S _x	S _y
3x1 1/2	4.5	6.7	76.2	38.1	5.1	6.8	8.62	1.12	75.1	10.1	2.95	1.08	19.71	3.78	23.7	7.5
4x2	7	10.42	101.6	50.8	6.1	7.6	13.16	1.41	206	27.7	3.95	1.48	40.51	7.64	48.7	14.9
5x2 1/2	10	14.90	127.0	63.5	6.4	9.2	18.79	1.82	477	64.7	5.04	1.88	75.1	14.5	89.1	27.7
6x3	12	17.88	152.4	76.2	6.4	9.0	22.48	2.04	838	109	6.11	2.24	110	20	129	38.3
6x3 1/2	16	23.84	152.4	88.9	7.1	11.6	30.02	2.67	1154	210	6.20	2.66	151.4	34.5	177	63.7
7x3	14	20.84	177.8	76.2	6.6	10.3	26.39	2.05	1329	129	7.10	2.25	149.5	23.6	176	45.3

(British Channels)

Note : The flange thickness is measured at the centre of the flange

CHANNELS (Imperial Units)

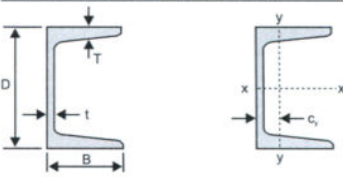


TAPERED FLANGE

Designation Size	Mass Per Metre		Depth Of Section	Width Of Section	Thickness Web Flange		Area Of Section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus		Plastic Modulus	
in x in	lb/ft	kg/m	D	B	t	T	A	C _y	I _x	I _y	r _x	r _y	Z _x	Z _y	S _x	S _y
3x1 3/8	4.1	6.1	76.2	35.0	4.3	6.9	7.81	1.06	69.11	8.0	2.98	1.01	18.14	3.27	21.7	6.4
3x1 1/2	5	7.4	76.2	37.0	6.6	6.9	9.48	1.06	76.58	9.6	2.85	1.01	20.1	3.65	24.9	7.36
3x1 5/8	6	8.90	76.2	40.0	9	6.9	11.30	1.13	86.37	12.1	2.76	1.03	22.67	4.2	28.7	8.8
4x1 5/8	5.4	8.00	101.6	40.0	4.7	7.5	10.30	1.15	160.3	13.8	3.97	1.16	31.56	4.89	37.8	9.4
4x1 3/4	7.2	10.80	101.6	43.0	8.2	7.5	13.70	1.13	190.8	17.4	3.72	1.12	37.56	5.48	47	11.3
5x1 3/4	6.7	10.40	127.0	47.0	4.8	8.1	12.70	1.29	332.4	24.3	5.01	1.36	52.34	7.19	61.8	14.1
5x1 7/8	9	13.00	127.0	48.0	8.3	8.1	17.00	1.21	371.3	27.4	4.66	1.27	58.47	7.65	73.1	15.3
6x1 7/8	8.2	12.20	152.4	48.0	5.1	8.7	15.50	1.26	548.4	29.2	5.94	1.37	72	8.3	85.6	16.1
6x2	10.5	15.60	152.4	51.0	8	8.7	19.90	1.24	630	36	5.63	1.35	82.68	9.36	103	18.7
6x2 1/8	13	19.30	152.4	54.0	11.1	8.7	24.70	1.28	720.8	42.4	5.41	1.31	94.359	10.3	121	22.1
7x2 1/8	9.8	14.60	177.8	53.0	5.3	9.3	18.50	1.36	895.5	42.7	6.94	1.52	100.7	10.9	120	21.1
7x2 1/4	12.25	18.20	177.8	55.0	8	9.3	23.20	1.31	1007	49.2	6.59	1.46	113.3	11.8	140	23.4
7x2 1/4	14.75	22.00	177.8	58.0	10.6	9.3	27.90	1.33	1143	56.8	6.39	1.42	128.6	12.7	163	27
8x2 1/4	11.5	17.10	203.0	57.0	5.6	9.9	21.80	1.44	1340	53.8	7.86	1.57	132	12.6	156	27.6
8x2 3/8	13.7	20.50	203.0	59.0	7.7	9.9	26.10	1.39	1490	62	7.57	1.54	147	13.7	177	30
8x2 1/2	18.5	27.90	203.0	64.0	12.4	9.9	35.50	1.43	1820	81.7	7.15	1.51	179	16.4	226	35.9
9x2 3/8	13.4	19.90	228.6	61.0	5.9	10.5	25.40	1.50	1991	76.1	8.86	1.73	174.2	16.7	208	31.9
9x2 1/2	15	22.00	228.6	63.0	7.2	10.5	28.10	1.49	2132	85.3	8.66	1.73	186.5	17.8	226	34.3
9x2 5/8	20	30.00	228.6	67.0	11.4	10.5	37.90	1.47	2544	103	8.19	1.65	222.5	19.8	282	41
10x2 5/8	15.3	22.80	254.0	65.0	6.1	11.1	29.00	1.58	2770	91.2	9.81	1.78	218	18.5	257	40.3
10x2 3/4	20	30.00	254.0	69.0	9.6	11.1	37.90	1.53	3260	114	9.29	1.74	257	21.2	315	46.5
10x2 7/8	25	37.00	254.0	73.0	13.4	11.1	47.40	1.56	3790	138	8.93	1.70	298	24	377	52.6
10x3	30	45.00	254.0	76.0	17.1	11.1	56.90	1.63	4270	158	8.68	1.67	336	26.5	434	57.4
12x3	20.7	30.80	305.0	74.0	7.2	12.7	39.30	1.74	5340	157	11.70	2.00	350	27.7	415	60.2
12x3	25	37.00	305.0	77.0	9.8	12.7	47.40	1.70	5970	183	11.20	1.97	391	30.5	477	66
12x3 1/8	30	45.00	305.0	80.0	13	12.7	56.90	1.70	6720	209	10.90	1.92	441	33.2	551	72.1
15x3 3/8	33.9	50.40	381.0	86.0	10.2	16.5	64.30	1.99	13100	334	14.30	2.28	688	50.5	825	107
15x3 1/2	40	60.00	381.0	89.0	13.2	16.5	76.10	1.97	14400	379	13.80	2.24	756	54.7	934	115
15x3 3/4	50	74.00	381.0	94.0	18.2	16.5	94.80	2.02	16700	454	13.30	2.19	877	61.5	1120	130

(American Standard Channels)

CHANNELS (Imperial Units)

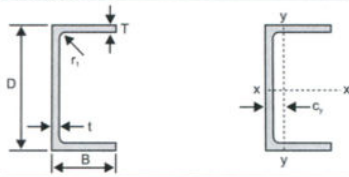


TAPERED FLANGE

Designation Size	Mass Per Metre		Depth Of Section	Width Of Section	Thickness Web Flange		Area Of Section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus		Plastic Modulus	
	lb/ft	kg/m	D	B	t	T	A	C _y	I _x	I _y	r _x	r _y	Z _x	Z _y	S _x	S _y
in x in			mm	mm	mm	mm	cm ²	cm	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	cm ³	cm ³
6x2 1/2	12	17.90	152.0	63.0	7.9	9.5	22.80	1.63	773	69.8	5.83	1.75	101.7	15.1	123	29.6
6x3	15.1	22.50	152.0	74.0	8	12.1	28.60	2.18	1033	134	6.01	2.16	135.9	25.8	162	49.7
6x3 1/2	15.3	22.80	152.0	88.0	8.6	9.8	29.00	2.31	1050	178	6.01	2.48	138.2	27.9	164	55.2
6x3	16.3	24.30	152.0	76.0	9.5	12.1	30.90	2.17	1081	147	5.91	2.17	142.2	27.2	171	53.3
6x3 1/2	18	26.80	152.0	88.0	9.6	12.1	34.10	2.53	1223	219	5.99	2.54	160.9	35.4	192	68.7
7x3 1/2	19.1	28.40	178.0	87.0	8.9	127.0	36.20	2.46	1797	230	7.05	2.52	201.9	37.4	239	72.2
7x3 5/8	22.7	33.80	178.0	91.0	12.8	12.7	43.00	2.42	1973	271	6.77	2.51	221.7	40.8	271	80.9
8x1 7/8	8.5	12.60	203.0	47.0	4.5	7.9	16.10	1.07	971.2	27.1	7.77	1.30	95.69	7.53	115	14.5
8x3	18.7	27.80	203.0	75.0	9	12.7	35.50	1.99	2171	160	7.83	2.13	213.9	29.3	258	56.8
8x3	20	29.80	203.0	76.0	10.2	12.7	37.90	1.97	2261	167	7.72	2.10	222.7	29.8	271	58.7
8x3 1/2	21.4	31.80	203.0	87.0	9.5	13.3	40.50	2.36	2555	251	7.94	2.49	251.7	40	300	78
8x3 1/2	22.8	33.90	203.0	88.0	10.8	13.3	43.2	2.33	2645	262	7.83	2.46	260.6	40.7	314	80.3
9x3 1/2	23.9	35.60	229.0	87.0	10.2	14.0	45.30	2.29	3547	275	8.84	2.46	309.8	43.2	373	83.8
9x3 1/2	25.4	37.80	229.0	88.0	11.4	14.0	48.20	2.26	3670	286	8.73	2.44	320.5	43.9	389	86.3
10x1 1/2	8.4	12.50	254.0	38.0	4.3	7.1	15.90	0.71	1354	14.1	9.20	0.94	106.6	4.59	132	9.14
10x3 3/8	22	33.00	254.0	84.0	7.4	14.6	41.60	2.30	4310	255	10.13	2.46	339.4	42.2	397	81.3
10x3 3/8	25	37.00	254.0	86.0	9.7	14.0	47.40	2.25	4543	285	9.81	2.46	357.7	45.3	430	86.5
10x4	28.5	42.40	254.0	100.0	10.8	614.6	54.00	2.58	5257	433	9.87	2.83	414	59	496	114
10x4 1/8	33.6	50.00	254.0	104.0	145	14.6	63.70	2.55	5750	498	9.52	2.80	452.8	63.8	558	126
10x4 3/8	41.1	61.20	254.0	110.0	20.2	14.6	78.10	2.59	6550	582	9.17	2.73	515.8	69.2	654	146
12x1 1/2	10.6	15.80	305.0	38.0	4.8	7.8	20.00	0.69	2338	15.9	10.78	0.89	153.3	5.08	196	10.8
12x3 5/8	31	46.00	305.0	93.0	9.4	17.8	58.90	2.61	8292	436	12.00	2.74	543.7	65	661	129
12x3 3/4	35	52.00	305.0	96.0	11.8	17.8	66.20	2.55	8998	487	11.67	2.71	590.1	68.7	726	138
12x3 7/8	40	60.00	305.0	98.0	15	17.8	76.10	2.48	9732	526	11.33	2.63	638.2	71.5	798	146
12x4	45	67.00	305.0	102.0	18	17.8	85.02	2.53	10510	597	11.10	2.65	689	77.5	873	161
12x4 1/8	50	74.00	305.0	105.0	21.2	17.8	94.80	2.59	11140	664	10.87	2.65	730.7	83.5	939	175
13x4	31.8	47.30	330.0	102.0	9.5	15.5	60.30	2.58	9986	500	12.87	2.88	605.2	65.1	739	136
13x4 1/8	35	52.00	330.0	103.0	11.4	15.5	66.40	2.50	10500	526	12.58	2.82	636.1	67	786	140
13x4 1/8	40	60.00	330.0	106.0	14.2	15.5	76.01	2.45	11470	576	12.27	2.75	694.9	70.2	870	150
13x4 3/8	50	74.00	330.0	112.0	20	15.5	94.80	2.52	12990	708	11.74	2.74	787.4	81	1016	175
18x4	42.7	63.50	457.0	100.0	11.4	15.9	81.30	2.11	23040	535	16.88	2.57	1008	67.4	1263	141
18x4	45.8	68.20	457.0	102.0	12.7	15.9	87.10	2.12	24010	576	16.64	2.58	1051	70.9	1330	149
18x4 1/8	51.9	77.20	457.0	104.0	15.2	15.9	98.70	2.10	26090	611	16.29	2.49	1142	73.2	1463	159
18x4 1/8	85	86.00	457.0	107.0	17.8	15.9	110.00	2.14	27850	682	16.00	2.50	1219	79.3	1587	173

(American Standard Channels)

CHANNELS



PARALLEL FLANGE

Designation Size	Mass Per Metre	Thickness Web	Flange	Root Radius	Depth Between Fillets	Area Of Section	Centre Of Gravity	Ratios For Local Bckling		Second Moment Of Area	
DxB	kg/m	t	T	r ₁	d	A	C _y	Flange	Web	Axis x-x	Axis y-y
		mm	mm	mm	mm	cm ²	cm	B/t	d/t	cm ⁴	cm ⁴
100x50	10.2	5.0	8.5	9	65.0	13.0	1.73	5.88	13.0	208	32.3
125x65	14.8	5.5	9.5	12	82.0	18.8	2.25	6.84	14.9	483	80.0
150x75	17.9	5.5	10.0	12	106	22.8	2.58	7.50	19.3	861	131
150x90	23.9	6.5	12.0	12	102	30.4	3.30	7.50	15.7	1162	253
180x75	20.3	6.0	10.5	12	135	25.9	2.41	7.14	22.5	1370	146
180x90	26.1	6.5	12.5	12	131	33.2	3.17	7.20	20.2	1817	277
200x75	23.4	6.0	12.5	12	151	29.9	2.48	6.00	25.2	1963	170
200x90	29.7	7.0	14.0	12	148	37.9	3.12	6.43	21.1	2523	314
230x75	25.7	6.5	12.5	12	181	32.7	2.30	6.00	27.8	2748	181
230x90	32.2	7.5	14.0	12	178	41.0	2.92	6.43	23.7	3518	334
250x90	35.5	8.0	15.0	12	220	45.2	2.86	6.00	27.5	4510	364
260x75	27.6	7.0	12.0	12	212	35.1	2.10	6.25	30.3	3619	185
260x90	34.8	8.0	14.0	12	208	44.4	2.74	6.43	26.0	4728	353
300x90	41.4	9.0	15.5	12	245	52.7	2.60	5.81	27.2	7218	404
300x100	45.5	9.0	16.5	15	237	58.0	3.05	6.06	26.3	8229	568
380x100	54.0	9.5	17.5	15	315	68.7	2.79	5.71	33.2	15030	643
430x100	64.4	11.0	19.0	15	362	82.1	2.62	5.26	32.9	21940	722

Designation Size	Mass Per Metre	Radius Of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant
DxB	kg/m	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	u	x	H	J
		cm	cm	cm ³	cm ³	cm ³	cm ³			dm ⁶	cm ⁴
100x50	10.2	4.00	1.58	41.5	9.89	48.9	17.5	0.942	10.0	0.000491	2.53
125x65	14.8	5.07	2.06	77.3	18.8	89.9	33.2	0.942	11.1	0.00194	4.72
150x75	17.9	6.15	2.40	115	26.6	132	47.2	0.946	13.1	0.00467	6.10
150x90	23.9	6.18	2.89	155	44.4	179	76.9	0.936	10.8	0.00890	11.8
180x75	20.3	7.27	2.38	152	28.8	176	51.8	0.946	15.3	0.00754	7.34
180x90	26.1	7.40	2.89	202	47.4	232	83.5	0.949	12.8	0.0141	13.3
200x75	23.4	8.11	2.39	196	33.8	227	60.6	0.956	14.8	0.0107	11.1
200x90	29.7	8.16	2.89	252	53.4	291	94.5	0.954	12.9	0.0197	18.3
230x75	25.7	9.17	2.35	239	34.8	278	63.2	0.947	17.3	0.0153	11.8
230x90	32.2	9.27	2.86	306	55.0	355	98.9	0.950	15.1	0.0279	19.3
250x90	35.5	9.99	2.84	361	59.3	421	107	0.948	15.5	0.0359	23.8
260x75	27.6	10.1	2.30	278	34.4	328	62.0	0.932	20.5	0.0203	11.7
260x90	34.8	10.3	2.82	364	56.3	425	102	0.942	17.2	0.0379	20.6
300x90	41.4	11.7	2.77	481	63.1	568	114	0.934	18.4	0.0581	28.8
300x100	45.5	11.9	3.13	549	81.7	641	148	0.944	17.0	0.0813	36.8
380x100	54.0	14.8	3.06	791	89.2	933	161	0.932	21.2	0.150	45.7
430x100	64.4	16.3	2.97	1020	97.9	1222	176	0.917	22.5	0.219	63.0