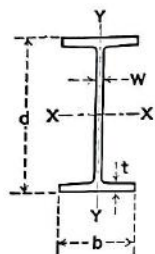
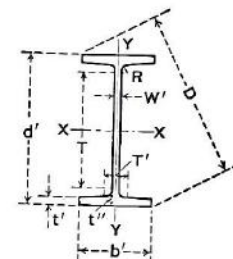


BETHLEHEM
WIDE FLANGE SHAPESDIMENSIONS AND
PROPERTIES FOR DESIGNINGBETHLEHEM
WIDE FLANGE SHAPES
APPROXIMATE DIMENSIONS
FOR DETAILING

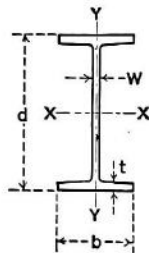
Section Number and Nominal Size	Weight per Foot	Area of Section	Depth of Section	Flange		Web Thickness	AXIS X-X			AXIS Y-Y		
				Width	Thickness		I	S	r	I'	S'	r'
	Lb.	In. ²	In.	b	t	W	In. ⁴	In. ³	In.	In. ⁴	In. ³	In.
*36" WF (B 36a) 36 x 16½	300	88.17	36.72	16.655	1.680	.945	20290.2	1105.1	15.17	1225.2	147.1	3.73
	280	82.32	36.50	16.595	1.570	.885	18819.3	1031.2	15.12	1127.5	135.9	3.70
	260	76.56	36.24	16.555	1.440	.845	17233.8	951.1	15.00	1020.6	123.3	3.65
	245	72.03	36.06	16.512	1.350	.802	16092.2	892.5	14.95	944.7	114.4	3.62
	230	67.73	35.88	16.475	1.260	.765	14988.4	835.5	14.88	870.9	105.7	3.59
*36" WF (B 36) 36 x 12	194	57.11	36.48	12.117	1.260	.770	12103.4	663.6	14.56	355.4	58.7	2.49
	182	53.54	36.32	12.072	1.180	.725	11281.5	621.2	14.52	327.7	54.3	2.47
	170	49.98	36.16	12.027	1.100	.680	10470.0	579.1	14.47	300.6	50.0	2.45
	160	47.09	36.00	12.000	1.020	.653	9738.8	541.0	14.38	275.4	45.9	2.42
	150	44.16	35.84	11.972	.940	.625	9012.1	502.9	14.29	250.4	41.8	2.38
*33" WF (B 33a) 33 x 15¾	240	70.52	33.50	15.865	1.400	.830	13585.1	811.1	13.88	874.3	110.2	3.52
	220	64.73	33.25	15.810	1.275	.775	12312.1	740.6	13.79	782.4	99.0	3.48
	200	58.79	33.00	15.750	1.150	.715	11048.2	669.6	13.71	691.7	87.8	3.43
*33" WF (B 33) 33 x 11½	152	44.71	33.50	11.565	1.055	.635	8147.6	486.4	13.50	256.1	44.3	2.39
	141	41.51	33.31	11.535	.960	.605	7442.2	446.8	13.39	229.7	39.8	2.35
	130	38.26	33.10	11.510	.855	.580	6699.0	404.8	13.23	201.4	35.0	2.29
*30" WF (B 30a) 30 x 15	210	61.78	30.38	15.105	1.315	.775	9872.4	649.9	12.64	707.9	93.7	3.38
	190	55.90	30.12	15.040	1.185	.710	8825.9	586.1	12.57	624.6	83.1	3.34
	172	50.65	29.88	14.985	1.065	.655	7891.5	528.2	12.48	550.1	73.4	3.30
*30" WF (B 30) 30 x 10½	132	38.83	30.30	10.551	1.000	.615	5753.1	379.7	12.17	185.0	35.1	2.18
	124	36.45	30.16	10.521	.930	.585	5347.1	354.6	12.11	169.7	32.3	2.16
	116	34.13	30.00	10.500	.850	.564	4919.1	327.9	12.00	153.2	29.2	2.12
	108	31.77	29.82	10.484	.760	.548	4461.0	299.2	11.85	135.1	25.8	2.06

*These shapes have flange slope of 5 per cent, and flange thicknesses tabulated are average thicknesses.

Section Number and Nominal Size	Weight per Foot	Depth (Nominal) of Section	Flange			Web Thickness (Nominal)	Tangent	Distance (Nominal)	Diagonal Dimension (Nominal)	Radius of Fillet (Root)	Slope Inside Flange
			Width (Nominal)	Thickness (Nominal) at Toe	Thickness (Nominal) at Root						
	Lb.	In.	b'	t'	t''	W'	T	T'	D	R	Per Cent
*36" WF (B 36a) 36 x 16½	300	36¾	16½	1½	1¾	15/16	31½	2¾	40¾	.95	5.0
	280	36½	16½	1¾	1¾	¾	31½	2½	40¾	.95	5.0
	260	36¼	16½	1¼	1½	¾	31½	2½	39¾	.95	5.0
	245	36	16½	1½	1½	15/16	31½	2½	39¾	.95	5.0
	230	35¾	16½	1½	1½	¾	31½	2½	39½	.95	5.0
*36" WF (B 36) 36 x 12	194	36½	12½	1½	1½	15/16	32¼	2½	38½	.75	5.0
	182	36¾	12½	1	1½	¾	32¼	2½	38½	.75	5.0
	170	36¾	12	15/16	1¼	15/16	32¼	2½	38½	.75	5.0
	160	36	12	¾	1½	15/16	32¼	2½	38	.75	5.0
	150	35¾	12	15/16	1½	¾	32¼	2½	37½	.75	5.0
*33" WF (B 33a) 33 x 15¾	240	33½	15¾	1½	1½	¾	28½	2½	37½	.90	5.0
	220	33¼	15¾	1½	1½	15/16	28½	2½	36¾	.90	5.0
	200	33	15¾	15/16	1½	¾	28½	2½	36¾	.90	5.0
*33" WF (B 33) 33 x 11½	152	33½	11½	15/16	1½	¾	29¾	1½	35½	.70	5.0
	141	33¼	11½	15/16	1½	¾	29¾	1½	35¼	.70	5.0
	130	33¾	11½	15/16	1	¾	29¾	1½	35½	.70	5.0
*30" WF (B 30a) 30 x 15	210	30¾	15½	1½	1½	15/16	25¼	2½	34	.85	5.0
	190	30¾	15	1	1½	¾	25¼	2½	33¾	.85	5.0
	172	29¾	15	¾	1¼	15/16	25¼	2¼	33½	.85	5.0
*30" WF (B 30) 30 x 10½	132	30¼	10½	¾	1½	¾	26¾	1½	32½	.65	5.0
	124	30¾	10½	15/16	1½	¾	26¾	1½	31½	.65	5.0
	116	30	10½	¾	1	¾	26¾	1½	31¼	.65	5.0
	108	29¾	10½	¾	¾	¾	26¾	1½	31½	.65	5.0

*These shapes have flange slope of 5 per cent.

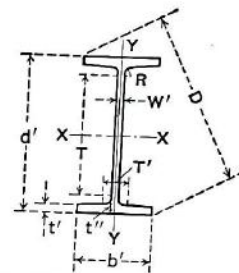
BETHLEHEM
WIDE FLANGE SHAPES
DIMENSIONS AND
PROPERTIES FOR DESIGNING



Section Number and Nominal Size	Weight per Foot	Area of Section	Depth of Section	Flange		Web Thickness	AXIS X-X			AXIS Y-Y		
				Width	Thick-ness		I	S	r	I'	S'	r'
				b	t		In. ⁴	In. ³	In.	In. ⁴	In. ³	In.
*27" WF (B 27a)	177	52.10	27.31	14.090	1.190	.725	6728.6	492.8	11.36	518.9	73.7	3.16
27 x 14	160	47.04	27.08	14.023	1.075	.658	6018.6	444.5	11.31	458.0	65.3	3.12
	145	42.68	26.88	13.965	.975	.600	5414.3	402.9	11.26	406.9	58.3	3.09
*27" WF (B 27)	114	33.53	27.28	10.070	.932	.570	4080.5	299.2	11.03	149.6	29.7	2.11
27 x 10	102	30.01	27.07	10.018	.827	.518	3604.1	266.3	10.96	129.5	25.9	2.08
	94	27.65	26.91	9.990	.747	.490	3266.7	242.8	10.87	115.1	23.0	2.04
*24" WF (B 24b)	160	47.04	24.72	14.091	1.135	.656	5110.3	413.5	10.42	492.6	69.9	3.23
24 x 14	145	42.62	24.49	14.043	1.020	.608	4561.0	372.5	10.34	434.3	61.8	3.19
	130	38.21	24.25	14.000	.900	.565	4009.5	330.7	10.24	375.2	53.6	3.13
*24" WF (B 24a)	120	35.29	24.31	12.088	.930	.556	3635.3	299.1	10.15	254.0	42.0	2.68
24 x 12	110	32.36	24.16	12.042	.855	.510	3315.0	274.4	10.12	229.1	38.0	2.66
	100	29.43	24.00	12.000	.775	.468	2987.3	248.9	10.08	203.5	33.9	2.63
*24" WF (B 24)	94	27.63	24.29	9.061	.872	.516	2683.0	220.9	9.85	102.2	22.6	1.92
24 x 9	84	24.71	24.09	9.015	.772	.470	2364.3	196.3	9.78	88.3	19.6	1.89
	76	22.37	23.91	8.985	.682	.440	2096.4	175.4	9.68	76.5	17.0	1.85
*21" WF (B 21b)	142	41.76	21.46	13.132	1.095	.659	3403.1	317.2	9.03	385.9	58.8	3.04
21 x 13	127	37.34	21.24	13.061	.985	.588	3017.2	284.1	8.99	338.6	51.8	3.01
	112	32.93	21.00	13.000	.865	.527	2620.6	249.6	8.92	289.7	44.6	2.96
*21" WF (B 21a)	96	28.21	21.14	9.038	.935	.575	2088.9	197.6	8.60	109.3	24.2	1.97
21 x 9	82	24.10	20.86	8.962	.795	.499	1752.4	168.0	8.53	89.6	20.0	1.93
*21" WF (B 21)	73	21.46	21.24	8.295	.740	.455	1600.3	150.7	8.64	66.2	16.0	1.76
21 x 8 1/4	68	20.02	21.13	8.270	.685	.430	1478.3	139.9	8.59	60.4	14.6	1.74
	62	18.23	20.99	8.240	.615	.400	1326.8	126.4	8.53	53.1	12.9	1.71

*These shapes have flange slope of 5 per cent, and flange thicknesses tabulated are average thicknesses.

BETHLEHEM
WIDE FLANGE SHAPES
APPROXIMATE DIMENSIONS
FOR DETAILING



Section Number and Nominal Size	Weight per Foot	Depth (Nominal) of Section	Flange			Web Thickness (Nominal)	Tangent Web (Nominal)	Distance (Nominal)	Diagonal Dimension (Nominal)	Radius of Fillet (Root)	Slope Inside Flange
			Width (Nominal)	Thick-ness (Nominal) at Toe	Thick-ness (Nominal) at Root						
			b'	t'	t''		T	T'	D	R	Per Cent
*27" WF (B 27a)	177	27 1/4	14 1/8	1	1 3/8	3/4	23	2 1/4	30 3/4	.80	5.0
27 x 14	160	27 1/8	14	7/8	1 1/4	11/16	23	2 3/16	30 1/2	.80	5.0
	145	26 7/8	14	13/16	1 1/8	5/8	23	2 1/8	30 3/8	.80	5.0
*27" WF (B 27)	114	27 1/4	10 1/8	13/16	1 1/16	9/16	24	1 11/16	29 1/8	.60	5.0
27 x 10	102	27 1/8	10	11/16	15/16	1/2	24	1 11/16	28 7/8	.60	5.0
	94	26 7/8	10	5/8	7/8	1/2	24	1 3/4	28 3/4	.60	5.0
*24" WF (B 24b)	160	24 3/4	14 1/8	15/16	1 5/16	11/16	20 3/4	2	28 1/2	.70	5.0
24 x 14	145	24 1/2	14	7/8	1 3/16	9/8	20 3/4	1 15/16	28 1/4	.70	5.0
	130	24 1/4	14	3/4	1 1/16	9/16	20 3/4	1 7/8	28	.70	5.0
*24" WF (B 24a)	120	24 1/4	12 1/8	13/16	1 1/16	9/16	20 7/8	1 15/16	27 1/8	.65	5.0
24 x 12	110	24 1/8	12	11/16	1	1/2	20 7/8	1 3/4	27	.65	5.0
	100	24	12	5/8	15/16	1/2	20 7/8	1 11/16	26 7/8	.65	5.0
*24" WF (B 24)	94	24 1/4	9	3/4	1	1/2	21 3/8	1 7/8	25 7/8	.50	5.0
24 x 9	84	24 1/8	9	11/16	7/8	1/2	21 3/8	1 7/8	25 3/4	.50	5.0
	76	23 7/8	9	9/16	13/16	7/16	21 3/8	1 3/8	25 3/8	.50	5.0
*21" WF (B 21b)	142	21 1/2	13 3/8	15/16	1 1/4	13/16	17 3/4	1 7/8	25 1/4	.65	5.0
21 x 13	127	21 1/4	13	13/16	1 1/8	9/16	17 3/4	1 13/16	25	.65	5.0
	112	21	13	11/16	1	9/16	17 3/4	1 3/4	24 3/4	.65	5.0
*21" WF (B 21a)	96	21 1/8	9	13/16	1 1/16	9/16	18	1 5/8	23	.55	5.0
21 x 9	82	20 7/8	9	11/16	15/16	1/2	18	1 1/16	22 3/4	.55	5.0
*21" WF (B 21)	73	21 1/4	8 3/4	9/8	1 3/16	1/2	18 5/8	1 3/8	22 7/8	.50	5.0
21 x 8 1/4	68	21 1/8	8 1/4	9/16	3/4	7/16	18 5/8	1 3/8	22 3/4	.50	5.0
	62	21	8 1/4	1/2	11/16	3/8	18 5/8	1 3/8	22 3/8	.50	5.0

*These shapes have flange slope of 5 per cent.