

SPECIAL LIGHT  
STRUCTURAL  
BEAMS

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ILLINOIS STEEL COMPANY  
CHICAGO, ILLINOIS

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SPECIAL LIGHT  
STRUCTURAL  
BEAMS

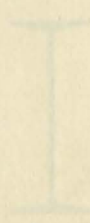


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ILLINOIS STEEL COMPANY  
CHICAGO, ILLINOIS

ILLINOIS STEEL COMPANY

SPECIAL LIGHT  
STRUCTURAL  
BEAMS

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CHICAGO, ILLINOIS

First Edition, May 1st, 1914.

ILLINOIS STEEL COMPANY

ILLINOIS STEEL COMPANY

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## INTRODUCTORY

During the past few years there has been a demand, from Engineers, Architects, and other users of structural material, for lighter "I" Beam Sections than the present American Standard Minimum Sections. This demand was caused by a desire to bring about better economy in the designing of buildings and other structural work, where the depth and rigidity of the American Standard Beams were desired but where their full strength was not required by the specified loading.

In order to take care of this demand, we have developed a series of Special Light Structural Beams which we are now prepared to roll for the trade.

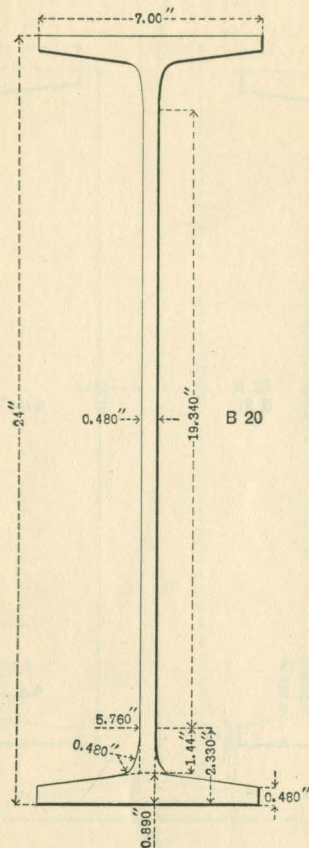
In developing these sections we have slightly departed from the range in depth of the American Standard "I" Beam Sections, in that we have introduced a Beam 21 inches in depth. This was done to make the range in the depth of the beams in the Light Beam Series more uniform than in the American Standard Beam Series.

The dimensions and the properties of these beams are shown on the following pages.

For convenience in designing, we have also added tables showing the properties and carrying capacities of the American Standard "I" Beams rolled by us.

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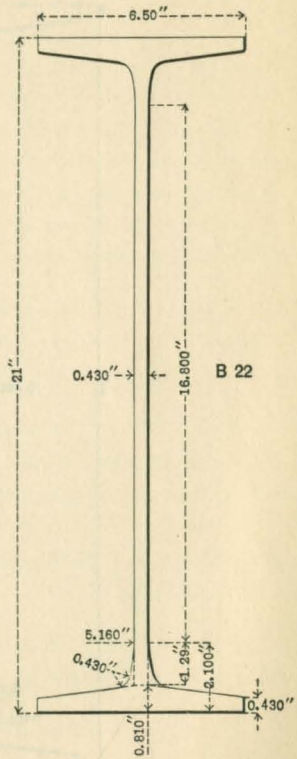
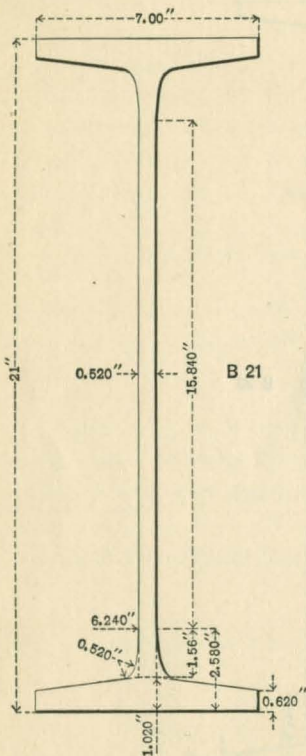
SPECIAL LIGHT STRUCTURAL BEAMS



Section Index	Depth of Beam, Inches	Weight per Foot, Pounds	Flange Width, Inches		Web Thickness, Inches	
			Decimal	Fractional	Decimal	Fractional
B 20	24	71.0	7.00	7	• 0.480	$\frac{11}{16}$

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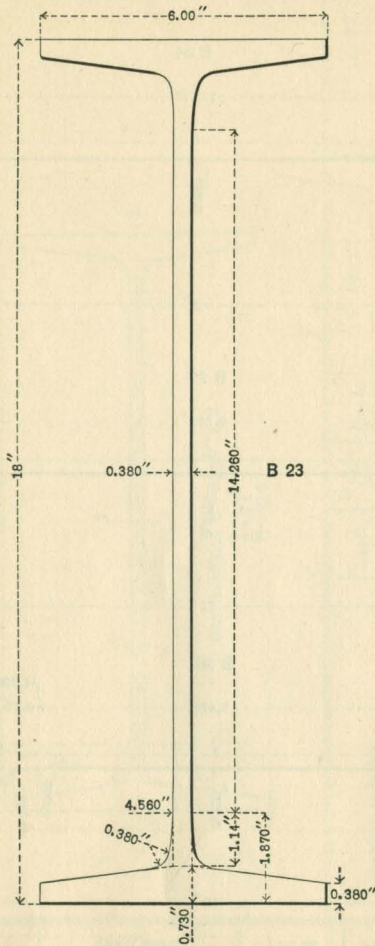
SPECIAL LIGHT STRUCTURAL BEAMS—Continued



Section Index	Depth of Beam, Inches	Weight per Foot, Pounds	Flange Width, Inches		Web Thickness, Inches	
			Decimal	Fractional	Decimal	Fractional
B 21	21	75.0	7.00	7	0.520	$\frac{11}{16}$
B 22	21	58.0	6.50	$6\frac{1}{2}$	0.430	$\frac{7}{16}$

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SPECIAL LIGHT STRUCTURAL BEAMS—Continued



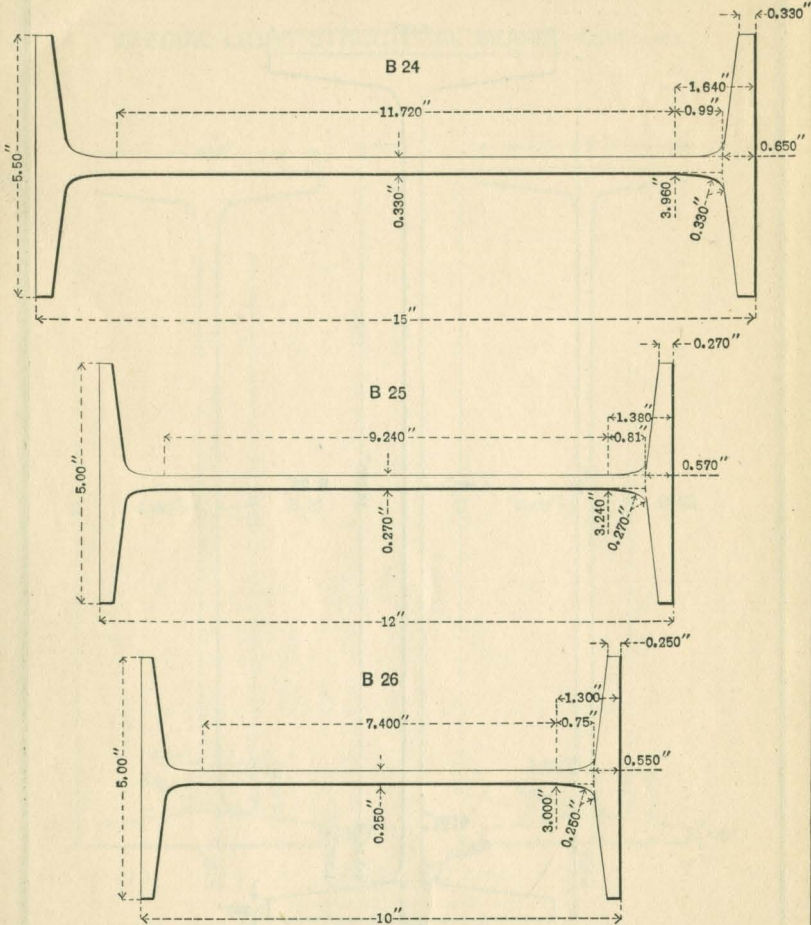
Section Index	Depth of Beam, Inches	Weight per Foot, Pounds	Flange Width, Inches		Web Thickness, Inches	
			Decimal	Fractional	Decimal	Fractional
B 23	18	46.0	6.00	6	0.380	$\frac{3}{8}$



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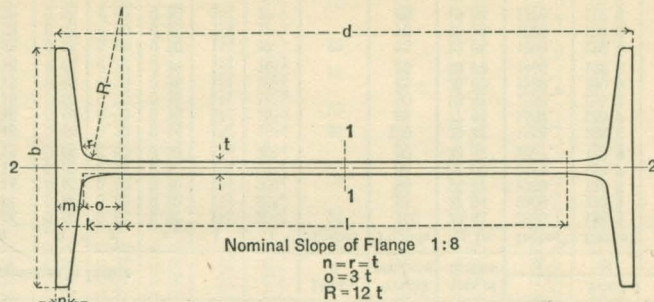
## SPECIAL LIGHT STRUCTURAL BEAMS—Concluded

1914



Section Index	Depth of Beam, Inches	Weight per Foot, Pounds	Flange Width, Inches		Web Thickness, Inches	
			Decimal	Fractional	Decimal	Fractional
B 24	15	35.0	5.50	5½	0.330	⅓
B 25	12	25.0	5.00	5	0.270	⅙
B 26	10	22.0	5.00	5	0.250	¼

## DIMENSIONS AND PROPERTIES OF SPECIAL LIGHT STRUCTURAL BEAMS

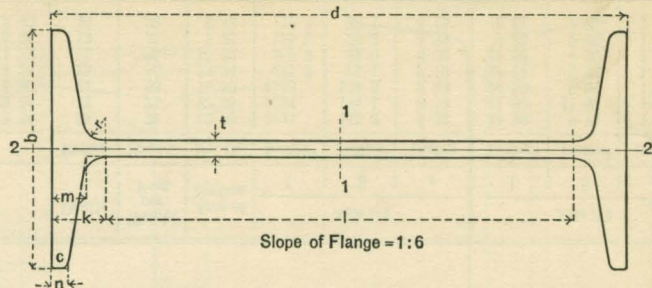


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ILLINOIS STEEL COMPANY

Section Index	Dimensions in Inches									Depth, d Inches	Weight per Foot Pounds	Area of Section Sq. In.	Axis 1-1			Axis 2-2		
	b	t	m	n	o	R	r	k	l				I	S	r	I	S	r
													Inches <sup>4</sup>	Inches <sup>3</sup>	Inches	Inches <sup>4</sup>	Inches <sup>3</sup>	Inches
B-20	7.00	0.48	0.89	0.48	1.44	5.76	0.48	2.33	19.34	24	71	20.88	1815.	151.2	9.32	33.98	9.71	1.26
B 21	7.00	0.52	1.02	0.62	1.56	6.24	0.52	2.58	15.84	21	75	22.05	1624.	145.1	8.32	41.90	11.97	1.38
B 22	6.50	0.43	0.81	0.43	1.29	5.16	0.43	2.10	16.80	21	58	16.90	1143.	108.8	8.22	24.50	7.54	1.20
B 23	6.00	0.38	0.73	0.38	1.14	4.56	0.38	1.87	14.26	18	46	13.34	675.7	75.1	7.12	17.14	5.71	1.13
B 24	5.50	0.33	0.65	0.33	0.99	3.96	0.33	1.64	11.72	15	35	10.22	367.9	49.0	6.00	11.56	4.20	1.06
B 25	5.00	0.27	0.57	0.27	0.81	3.24	0.27	1.38	9.24	12	25	7.35	175.5	29.2	4.89	7.30	2.92	1.00
B 26	5.00	0.25	0.55	0.25	0.75	3.00	0.25	1.30	7.40	10	22	6.42	110.3	22.1	4.15	6.87	2.75	1.03

## DIMENSIONS AND PROPERTIES OF AMERICAN STANDARD BEAMS



Section Index	Dimensions in Inches								Depth, d Inches	Weight per Foot Pounds	Area of Section Sq. In.	Axis 1-1			Axis 2-2		
	b	t	m	n	r	c	k	l				I	S	r	I	S	r
												Inches <sup>4</sup>	Inches <sup>3</sup>	Inches	Inches <sup>4</sup>	Inches <sup>3</sup>	Inches
B 1	7.25	0.75	1.14	0.60	0.60	0.30	1 <sup>5</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>4</sub>	24	100	29.41	2380.	198.3	9.00	48.6	13.4	1.28
	7.19	0.69	1.14	0.60	0.60	0.30	1 <sup>5</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>4</sub>		95	27.94	2309.	192.4	9.09	47.1	13.1	1.30
	7.13	0.63	1.14	0.60	0.60	0.30	1 <sup>5</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>4</sub>		90	26.47	2238.	186.5	9.20	45.7	12.8	1.31
	7.07	0.57	1.14	0.60	0.60	0.30	1 <sup>5</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>4</sub>		85	25.00	2168.	180.7	9.31	44.4	12.6	1.33
	7.00	0.50	1.14	0.60	0.60	0.30	1 <sup>5</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>4</sub>		80	23.32	2087.	173.9	9.46	42.9	12.3	1.36
B 2	7.28	0.88	1.18	0.65	0.70	0.36	1 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>2</sub>	20	100	29.41	1656.	165.6	7.50	52.7	14.5	1.34
	7.21	0.81	1.18	0.65	0.70	0.36	1 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>2</sub>		95	27.94	1607.	160.7	7.58	50.8	14.1	1.35
	7.14	0.74	1.18	0.65	0.70	0.36	1 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>2</sub>		90	26.47	1558.	155.8	7.67	49.0	13.7	1.36
	7.06	0.66	1.18	0.65	0.70	0.36	1 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>2</sub>		85	25.00	1509.	150.9	7.77	47.3	13.4	1.37
	7.00	0.60	1.18	0.65	0.70	0.36	1 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>2</sub>		80	23.73	1466.	146.6	7.86	45.8	13.1	1.39
B 3	6.40	0.65	1.03	0.55	0.60	0.30	1 <sup>1</sup> / <sub>2</sub>	17	20	75	22.06	1269.	126.9	7.58	30.3	9.5	1.17
	6.33	0.58	1.03	0.55	0.60	0.30	1 <sup>1</sup> / <sub>2</sub>	17		70	20.59	1220.	122.0	7.70	29.0	9.2	1.19
	6.25	0.50	1.03	0.55	0.60	0.30	1 <sup>1</sup> / <sub>2</sub>	17		65	19.08	1170.	117.0	7.83	27.9	8.9	1.21
B 4	6.26	0.72	0.92	0.46	0.56	0.28	1 <sup>3</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>4</sub>	18	70	20.59	921.2	102.4	6.69	24.6	7.9	1.09
	6.18	0.64	0.92	0.46	0.56	0.28	1 <sup>3</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>4</sub>		65	19.12	881.5	97.9	6.79	23.5	7.6	1.11
	6.10	0.56	0.92	0.46	0.56	0.28	1 <sup>3</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>4</sub>		60	17.65	841.8	93.5	6.91	22.4	7.3	1.13
	6.00	0.46	0.92	0.46	0.56	0.28	1 <sup>3</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>4</sub>		55	15.93	795.6	88.4	7.07	21.2	7.1	1.15
B 5	6.77	1.18	1.28	0.81	0.91	0.49	2	11	15	100	29.41	900.5	120.1	5.53	51.0	15.1	1.31
	6.68	1.09	1.28	0.81	0.91	0.49	2	11		95	27.94	872.9	116.4	5.59	48.4	14.5	1.32
	6.58	0.99	1.28	0.81	0.91	0.49	2	11		90	26.47	845.4	112.7	5.65	45.9	14.0	1.32
	6.48	0.89	1.28	0.81	0.91	0.49	2	11		85	25.00	817.8	109.0	5.72	43.6	13.5	1.32
	6.40	0.81	1.28	0.81	0.91	0.49	2	11		80	23.81	795.5	106.1	5.78	41.8	13.1	1.32

B 6	6.29	0.88	1.04	0.59	0.69	0.35	1 $\frac{1}{8}$	11 $\frac{3}{4}$	15	75	22.06	691.2	92.2	5.60	30.7	9.8	1.18
	6.19	0.78	1.04	0.59	0.69	0.35	1 $\frac{1}{8}$	11 $\frac{3}{4}$		70	20.59	663.7	88.5	5.68	29.0	9.4	1.19
	6.10	0.69	1.04	0.59	0.69	0.35	1 $\frac{1}{8}$	11 $\frac{3}{4}$		65	19.12	636.1	84.8	5.77	27.4	9.0	1.20
	6.00	0.59	1.04	0.59	0.69	0.35	1 $\frac{1}{8}$	11 $\frac{3}{4}$		60	17.67	609.0	81.2	5.87	26.0	8.7	1.21
B 7	5.75	0.66	0.83	0.41	0.51	0.25	1 $\frac{1}{4}$	12 $\frac{1}{2}$	15	55	16.18	511.0	68.1	5.62	17.1	5.9	1.02
	5.65	0.56	0.83	0.41	0.51	0.25	1 $\frac{1}{4}$	12 $\frac{1}{2}$		50	14.71	483.4	64.5	5.73	16.0	5.7	1.04
	5.55	0.46	0.83	0.41	0.51	0.25	1 $\frac{1}{4}$	12 $\frac{1}{2}$		45	13.24	455.9	60.8	5.87	15.1	5.4	1.07
	5.50	0.41	0.83	0.41	0.51	0.25	1 $\frac{1}{4}$	12 $\frac{1}{2}$		42	12.48	441.8	58.9	5.95	14.6	5.3	1.08
B 8	5.61	0.82	0.86	0.46	0.56	0.28	1 $\frac{3}{8}$	9 $\frac{1}{4}$	12	55	16.18	321.0	53.5	4.45	17.5	6.2	1.04
	5.49	0.70	0.86	0.46	0.56	0.28	1 $\frac{3}{8}$	9 $\frac{1}{4}$		50	14.71	303.4	50.6	4.54	16.1	5.9	1.05
	5.37	0.58	0.86	0.46	0.56	0.28	1 $\frac{3}{8}$	9 $\frac{1}{4}$		45	13.24	285.7	47.6	4.65	14.9	5.6	1.06
	5.25	0.46	0.86	0.46	0.56	0.28	1 $\frac{3}{8}$	9 $\frac{1}{4}$		4	11.84	269.0	44.8	4.77	13.8	5.3	1.08
B 9	5.09	0.44	0.74	0.35	0.45	0.21	1 $\frac{1}{8}$	9 $\frac{3}{4}$	12	35	10.29	228.3	38.0	4.71	10.1	4.0	0.99
	5.00	0.35	0.74	0.35	0.45	0.21	1 $\frac{1}{8}$	9 $\frac{3}{4}$		31.5	9.26	215.8	36.0	4.83	9.5	3.8	1.01
B 10	5.10	0.75	0.67	0.31	0.41	0.19	1	8	10	40	11.76	158.7	31.7	3.67	9.5	3.7	0.90
	4.95	0.60	0.67	0.31	0.41	0.19	1	8		35	10.29	146.4	29.3	3.77	8.5	3.4	0.91
	4.81	0.46	0.67	0.31	0.41	0.19	1	8		30	8.82	134.2	26.8	3.90	7.7	3.2	0.93
	4.66	0.31	0.67	0.31	0.41	0.19	1	8		25	7.37	122.1	24.4	4.07	6.9	3.0	0.97
B 11	4.77	0.73	0.63	0.29	0.39	0.17	1	7	9	35	10.29	111.8	24.8	3.29	7.3	3.1	0.84
	4.61	0.57	0.63	0.29	0.39	0.17	1	7		30	8.82	101.9	22.6	3.40	6.4	2.8	0.85
	4.45	0.41	0.63	0.29	0.39	0.17	1	7		25	7.35	91.9	20.4	3.54	5.7	2.5	0.88
	4.33	0.29	0.63	0.29	0.39	0.17	1	7		21	6.31	84.9	18.9	3.67	5.2	2.4	0.90
B 12	4.27	0.54	0.58	0.27	0.37	0.16	7 $\frac{7}{8}$	6 $\frac{1}{4}$	8	25.5	7.50	68.4	17.1	3.02	4.8	2.2	0.80
	4.18	0.45	0.58	0.27	0.37	0.16	7 $\frac{7}{8}$	6 $\frac{1}{4}$		23	6.76	64.5	16.1	3.09	4.4	2.1	0.81
	4.09	0.36	0.58	0.27	0.37	0.16	7 $\frac{7}{8}$	6 $\frac{1}{4}$		20.5	6.03	60.6	15.2	3.17	4.1	2.0	0.82
	4.00	0.27	0.58	0.27	0.37	0.16	7 $\frac{7}{8}$	6 $\frac{1}{4}$		18	5.33	56.9	14.2	3.27	3.8	1.9	0.84
B 13	3.87	0.46	0.53	0.25	0.35	0.15	7 $\frac{7}{8}$	5 $\frac{1}{4}$	7	20.0	5.88	42.2	12.1	2.68	3.2	1.7	0.74
	3.76	0.35	0.53	0.25	0.35	0.15	7 $\frac{7}{8}$	5 $\frac{1}{4}$		17.5	5.15	39.2	11.2	2.76	2.9	1.6	0.76
	3.66	0.25	0.53	0.25	0.35	0.15	7 $\frac{7}{8}$	5 $\frac{1}{4}$		15.0	4.42	36.2	10.4	2.86	2.7	1.5	0.78
B 14	3.58	0.48	0.49	0.23	0.33	0.14	3 $\frac{3}{4}$	4 $\frac{1}{2}$	6	17.25	5.07	26.2	8.7	2.27	2.4	1.3	0.68
	3.45	0.35	0.49	0.23	0.33	0.14	3 $\frac{3}{4}$	4 $\frac{1}{2}$		14.75	4.34	24.0	8.0	2.35	2.1	1.2	0.69
	3.33	0.23	0.49	0.23	0.33	0.14	3 $\frac{3}{4}$	4 $\frac{1}{2}$		12.25	3.61	21.8	7.3	2.46	1.9	1.1	0.72
B 15	3.29	0.50	0.44	0.21	0.31	0.13	3 $\frac{3}{4}$	3 $\frac{1}{2}$	5	14.75	4.34	15.2	6.1	1.87	1.7	1.0	0.63
	3.15	0.36	0.44	0.21	0.31	0.13	3 $\frac{3}{4}$	3 $\frac{1}{2}$		12.25	3.60	13.6	5.5	1.94	1.5	0.92	0.63
	3.00	0.21	0.44	0.21	0.31	0.13	3 $\frac{3}{4}$	3 $\frac{1}{2}$		9.75	2.87	12.1	4.8	2.05	1.2	0.82	0.65
B 16	2.88	0.41	0.40	0.19	0.29	0.11	5 $\frac{5}{8}$	2 $\frac{3}{4}$	4	10.5	3.09	7.1	3.6	1.52	1.0	0.70	0.57
	2.81	0.34	0.40	0.19	0.29	0.11	5 $\frac{5}{8}$	2 $\frac{3}{4}$		9.5	2.79	6.8	3.4	1.55	0.93	0.66	0.58
	2.73	0.26	0.40	0.19	0.29	0.11	5 $\frac{5}{8}$	2 $\frac{3}{4}$		8.5	2.50	6.4	3.2	1.59	0.85	0.62	0.58
	2.66	0.19	0.40	0.19	0.29	0.11	5 $\frac{5}{8}$	2 $\frac{3}{4}$		7.5	2.21	6.0	3.0	1.64	0.77	0.58	0.59
B 17	2.52	0.36	0.35	0.17	0.27	0.10	5 $\frac{5}{8}$	1 $\frac{3}{4}$	3	7.5	2.21	2.9	1.9	1.15	0.60	0.48	0.52
	2.42	0.26	0.35	0.17	0.27	0.10	5 $\frac{5}{8}$	1 $\frac{3}{4}$		6.5	1.91	2.7	1.8	1.19	0.53	0.44	0.52
	2.33	0.17	0.35	0.17	0.27	0.10	5 $\frac{5}{8}$	1 $\frac{3}{4}$		5.5	1.63	2.5	1.7	1.23	0.46	0.40	0.53

# ILLINOIS STEEL COMPANY

## SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in feet	Section Number												
	B 1					B 20	B 21	B 22	B 2				
	Depth in Inches												
	24					24	21	21	20				
	Pounds per Foot												
	100	95	90	85	80	71	75	58	100	95	90	85	80
4									353.6				
5	361.9								353.2	324.0	294.8		
6	352.5	332.6	302.9					180.6	294.3	285.6	276.9	265.2	240.0
7	302.2	293.2	284.2	273.6	240.0	230.0	218.4	165.9	252.3	244.8	237.7	229.9	223.4
8	264.4	256.6	248.7	240.9	231.9	201.7	193.5	145.1	220.7	214.2	207.7	201.1	195.5
9	235.0	228.0	221.1	214.1	206.1	179.3	172.0	129.0	196.2	190.4	184.6	178.8	173.8
10	211.5	205.2	199.0	192.7	185.5	161.3	154.8	116.1	176.6	171.4	166.1	160.9	156.4
11	192.3	186.6	180.9	175.2	168.7	146.7	140.7	105.6	160.5	155.8	151.0	146.3	142.2
12	176.3	171.0	165.8	160.6	154.6	134.4	129.0	96.8	147.2	142.8	138.5	134.1	130.3
13	162.7	157.9	153.1	148.2	142.7	124.1	119.1	89.3	135.8	131.8	127.8	123.8	120.3
14	151.1	146.6	142.1	137.6	132.5	115.2	110.6	82.9	126.1	122.4	118.7	114.9	111.7
15	141.0	136.8	132.6	128.5	123.7	107.6	103.2	77.4	117.7	114.2	110.8	107.3	104.3
16	132.2	128.3	124.4	120.4	116.0	100.8	96.8	72.6	110.4	107.1	103.8	100.6	97.7
17	124.4	120.7	117.0	113.4	109.1	94.9	91.1	68.3	103.9	100.8	97.7	94.1	92.0
18	117.5	114.0	110.5	107.1	103.1	89.6	86.0	64.5	98.1	95.2	92.3	89.4	86.9
19	111.3	108.0	104.7	101.4	97.6	84.9	81.5	61.1	92.9	90.2	87.4	84.7	82.3
20	105.8	102.6	99.5	96.3	92.8	80.7	77.4	58.1	88.3	85.7	83.1	80.5	78.2
21	100.7	97.7	94.7	91.8	88.3	76.8	73.7	55.3	84.1	81.6	79.1	76.6	74.5
22	96.1	93.3	90.4	87.6	84.3	73.3	70.4	52.8	80.3	77.9	75.5	73.1	71.1
23	92.0	89.2	86.5	83.8	80.7	70.1	67.3	50.5	76.8	74.5	72.2	70.0	68.0
24	88.1	85.5	82.9	80.3	77.3	67.2	64.5	48.4	73.6	71.4	69.2	67.0	65.2
25	84.6	82.1	79.6	77.1	74.2	64.5	61.9	46.4	70.6	68.5	66.5	64.4	62.6
26	81.4	78.9	76.5	74.1	71.4	62.1	59.5	44.7	67.9	65.9	63.9	61.9	60.2
27	78.3	76.0	73.7	71.4	68.7	59.8	57.3	43.0	65.4	63.5	61.5	59.6	57.9
28	75.3	73.3	71.1	68.8	66.3	57.6	55.3	41.5	63.1	61.2	59.3	57.5	55.9
29	72.9	70.8	68.6	66.4	64.0	55.6	53.4	40.0	60.9	59.1	57.3	55.5	53.9
30	70.5	68.4	66.3	64.2	61.8	53.8	51.6	38.7	58.9	57.1	55.4	53.6	52.1
31	68.2	66.2	64.2	62.2	59.8	52.0	49.9	37.5	57.0	55.3	53.6	51.9	50.5
32	66.1	64.1	62.2	60.2	58.0	50.4	48.4	36.3	55.2	53.6	51.9	50.3	48.9
33	64.1	62.2	60.3	58.4	56.2	48.9	46.9	35.2	53.5	51.9	50.4	48.8	47.4
34	62.2	60.4	58.5	56.7	54.6	47.5	45.5	34.2	51.9	50.4	48.9	47.3	46.0
35	60.4	58.6	56.8	55.1	53.0	46.1	44.2	33.2	50.5	49.0	47.5	46.0	44.7
36	58.8	57.0	55.3	53.5	51.5	44.8	43.0	32.3	49.1	47.6	46.2	44.7	43.4
37	57.2	55.5	53.8	52.1	50.1	43.6	41.8	31.4	47.7	46.3	44.9	43.5	42.3
38	55.7	54.0	52.4	50.7	48.8	42.5	40.7	30.6	46.5	45.1	43.7	42.3	41.2
39	54.2	52.6	51.0	49.4	47.6	41.4	39.7	29.8	45.3	43.9	42.6	41.3	40.1
40	52.9	51.3	49.7	48.2	46.4	40.3	38.7	29.0	44.1	42.8	41.5	40.2	39.1
41	51.6	50.1	48.5	47.0	45.3	39.3	37.8	28.3	43.1	41.8	40.5	39.2	38.1
42	50.4	48.9	47.4	45.9	44.2	38.4	36.9	27.6	42.0	40.8	39.6	38.3	37.2
43	49.2	47.7	46.3	44.8	43.1	37.5	36.0	27.0					
44	48.1	46.6	45.2	43.8	42.2	36.7	35.2	26.4					
45	47.0	45.6	44.2	42.8	41.2	35.9							
46	46.0	44.6	43.3	41.9	40.3	35.1							
47	45.0	43.7	42.3	41.0	39.5	34.3							
48	44.1	42.8	41.5	40.1	38.7	33.6							
49	43.2	41.9	40.6	39.3	37.9	32.9							
50	42.3	41.0	39.8	38.5	37.1	32.3							

# ILLINOIS STEEL COMPANY

## SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in feet	Section Number												
	B 3			B 4			B 23			B 5			
	Depth in Inches												
	20			18			18			15			
	Pounds per Foot												
	75	70	65	70	65	60	55	46	100	95	90	85	80
1													
2													
3									354.0	327.0			
4				258.8	229.3	199.8			320.2	310.4	297.0	267.0	243.0
5	259.6	230.0		218.4	208.9	199.5	165.6	136.8	256.1	248.3	240.4	232.6	226.3
6	225.6	216.8	200.0	182.0	174.1	166.3	157.1	133.5	213.5	206.9	200.4	193.8	188.6
7	193.3	185.9	178.2	156.0	149.2	142.5	134.7	114.4	183.0	177.4	171.8	166.2	161.6
8	169.2	162.6	155.9	136.5	130.6	124.7	117.9	100.1	160.1	155.2	150.3	145.4	141.4
9	150.4	144.6	138.6	121.3	116.1	110.9	104.8	89.0	142.3	137.9	133.6	129.2	125.7
10	135.3	130.1	124.7	109.2	104.5	99.8	94.3	80.1	128.1	124.1	120.2	116.3	113.1
11	123.0	118.3	113.4	99.3	95.0	90.7	85.7	72.8	116.4	112.8	109.3	105.7	102.9
12	112.8	108.4	104.0	91.0	87.1	83.1	78.6	66.7	106.7	103.4	100.2	96.9	94.3
13	104.1	100.1	96.0	84.0	80.4	76.7	72.5	61.6	98.5	95.5	92.5	89.5	87.0
14	96.7	92.9	89.1	78.0	74.6	71.3	67.3	57.2	91.5	88.7	85.9	83.1	80.8
15	90.2	86.7	83.2	72.8	69.6	66.5	62.9	53.4	85.4	82.7	80.2	77.5	75.4
16	84.6	81.3	78.0	68.2	65.3	62.4	58.9	50.1	80.0	77.6	75.1	72.7	70.7
17	79.6	76.5	73.4	64.2	61.5	58.7	55.5	47.1	75.3	73.0	70.7	68.4	66.6
18	76.3	72.3	69.3	60.7	58.0	55.4	52.4	44.5	71.1	69.0	66.8	64.6	62.9
19	71.2	68.5	65.7	57.5	55.0	52.5	49.6	42.1	67.4	65.3	63.3	61.2	59.5
20	67.7	65.1	62.4	54.6	52.2	49.9	47.1	40.0	64.0	62.1	60.1	58.2	56.6
21	64.4	62.0	59.4	52.0	49.7	47.5	44.9	38.1	61.0	59.1	57.2	55.4	53.9
22	61.5	59.1	56.7	49.6	47.5	45.3	42.9	36.4	58.2	56.4	54.6	52.9	51.4
23	58.8	56.6	54.2	47.5	45.4	43.4	41.0	34.8	55.7	54.0	52.3	50.6	49.2
24	56.4	54.2	52.0	45.5	43.5	41.6	39.3	33.4	53.4	51.7	50.1	48.5	47.1
25	54.1	52.0	49.9	43.7	41.8	39.9	37.7	32.0	51.2	49.7	48.1	46.5	45.2
26	52.1	50.0	48.0	42.0	40.2	38.4	36.3	30.8	49.3	47.7	46.2	44.7	43.5
27	50.1	48.2	46.2	40.4	38.7	37.0	34.9	29.7	47.4	46.0	44.5	43.1	41.9
28	48.3	46.5	44.6	39.0	37.3	35.6	33.7	28.6	45.7	44.3	42.9	41.5	40.4
29	46.7	44.9	43.0	37.6	36.0	34.4	32.5	27.6	44.2	42.8	41.5	40.1	39.0
30	45.1	43.4	41.6	36.4	34.8	33.3	31.4	26.7	42.7	41.4	40.1	38.8	37.7
31	43.7	42.0	40.2	35.2	33.7	32.2	30.4	25.8	41.3	40.0	38.8	37.5	36.5
32	42.3	40.7	39.0	34.1	32.6	31.2	29.5	25.0	40.0	38.8	37.6	36.3	35.4
33	41.0	39.4	37.8	33.1	31.7	30.2	28.6	24.3					
34	39.8	38.3	36.7	32.1	30.7	29.3	27.7	23.6					
35	38.7	37.2	35.6	31.2	29.8	28.5	26.9	22.9					
36	37.6	36.1	34.7	30.3	29.0	27.7	26.2	22.2					
37	36.6	35.2	33.7	29.5	28.2	27.0	25.5	21.6					
38	35.6	34.2	32.8	28.7	27.5	26.3	24.8	21.1					
39	34.7	33.4	32.0										
40	33.8	32.5	31.2										
41	33.0	31.7	30.4										
42	32.2	31.0	29.7										

# ILLINOIS STEEL COMPANY

## SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in Feet	Section Number												
	B 6			B 7				B 24		B 8			
	Depth in Inches												
	15			15				15		12			
	Pounds per Foot												
	75	70	65	60	55	50	45	42	35	55	50	45	40
1													
2										197.0			
3	264.6				196.8					190.2	167.8	138.2	
4	245.8	235.2	205.8	177.0	181.7	167.4	138.0			142.7	134.8	127.0	110.4
5	196.6	188.8	180.9	173.2	145.4	137.5	129.7	123.0	99.0	114.1	107.9	101.6	95.6
6	163.8	157.3	150.8	144.4	121.1	114.6	108.1	104.8	87.2	95.1	89.9	84.7	79.7
7	140.4	134.8	129.2	123.7	103.8	98.2	92.6	89.8	74.7	81.5	77.0	72.6	68.3
8	122.9	118.0	113.1	108.3	90.8	85.9	81.0	78.5	65.4	71.3	67.4	63.5	59.8
9	109.2	104.9	100.5	96.2	80.8	76.4	72.0	69.8	58.1	63.4	59.9	56.4	53.1
10	98.3	94.4	90.5	86.6	72.7	68.8	64.8	62.8	52.3	57.1	53.9	50.8	47.8
11	89.4	85.8	82.2	78.7	66.1	62.5	58.9	57.1	47.6	51.9	49.0	46.2	43.5
12	81.9	78.7	75.4	72.2	60.6	57.3	54.0	52.4	43.6	47.6	44.9	42.3	39.8
13	75.6	72.6	69.6	66.6	55.9	52.9	49.9	48.3	40.2	43.9	41.5	39.1	36.8
14	70.2	67.4	64.6	61.9	51.9	49.1	46.3	44.9	37.4	40.8	38.5	36.3	34.2
15	65.5	62.9	60.3	57.7	48.5	45.8	43.2	41.9	34.9	38.0	36.0	33.9	31.9
16	61.4	59.0	56.5	54.1	45.4	43.0	40.5	39.3	32.7	35.7	33.7	31.7	29.9
17	57.8	55.5	53.2	50.9	42.8	40.4	38.1	37.0	30.8	33.6	31.7	29.9	28.1
18	54.6	52.4	50.3	48.1	40.4	38.2	36.0	34.9	29.1	31.7	30.0	28.2	26.6
19	51.7	49.7	47.6	45.6	38.3	36.2	34.1	33.1	27.5	30.0	28.4	26.7	25.2
20	49.2	47.2	45.2	43.3	36.3	34.4	32.4	31.4	26.2	28.5	27.0	25.4	23.9
21	46.8	44.9	43.1	41.2	34.6	32.7	30.9	29.9	24.9	27.2	25.7	24.2	22.8
22	44.7	42.9	41.1	39.4	33.0	31.3	29.5	28.6	23.8	25.9	24.5	23.1	21.7
23	42.7	41.0	39.3	37.7	31.6	29.9	28.2	27.3	22.7	24.8	23.4	22.1	20.8
24	41.0	39.3	37.7	36.1	30.3	28.6	27.0	26.2	21.8	23.8	22.5	21.2	19.9
25	39.3	37.8	36.2	34.6	29.1	27.5	25.9	25.1	20.9	22.8	21.6	20.3	19.1
26	37.8	36.3	34.8	33.3	28.0	26.4	24.9	24.2	20.1	21.9	20.7	19.5	18.4
27	36.4	35.0	33.5	32.1	26.9	25.5	24.0	23.3	19.4				
28	35.1	33.7	32.3	30.9	26.0	24.6	23.2	22.4	18.7				
29	33.9	32.5	31.2	29.9	25.1	23.7	22.4	21.7	18.0				
30	32.8	31.5	30.2	28.9	24.2	22.9	21.6	20.9	17.4				
31	31.7	30.4	29.2	27.9	23.4	22.2	20.9	20.3	16.9				
32	30.7	29.5	28.3	27.1	22.7	21.5	20.3	19.6	16.3				

# ILLINOIS STEEL COMPANY

## SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in Feet	Section Number													
	B 9			B 25			B 10			B 26			B 11	
	Depth in Inches													
	12			12			10			10			9	
	Pounds per Foot													
	35	31.5	25	40	35	30	25	22	35	30	25	21		
2				149.8	120.4				131.8	102.4	73.1			
3	104.6			112.8	104.1	91.0			88.3	80.5	72.6	52.2		
4	101.5	84.0	64.8	84.6	78.1	71.6	62.0	50.0	66.2	60.4	54.5	50.3		
5	81.2	76.7	62.4	67.7	62.5	57.2	52.1	47.1	53.0	48.3	43.6	40.3		
6	67.6	63.9	52.0	56.4	52.1	47.7	43.4	39.2	44.2	40.2	36.3	33.6		
7	58.0	54.8	44.6	48.4	44.6	40.9	37.2	33.6	37.9	34.5	31.1	28.8		
8	50.7	48.0	39.0	42.3	39.0	35.8	32.6	29.4	33.1	30.2	27.2	25.2		
9	45.1	42.6	34.7	37.6	34.7	31.8	28.9	26.1	29.4	26.8	24.2	22.4		
10	40.6	38.4	31.2	33.9	31.2	28.6	26.0	23.5	26.5	24.1	21.8	20.1		
11	36.9	34.9	28.4	30.8	28.4	26.0	23.7	21.4	24.1	22.0	19.8	18.3		
12	33.8	32.0	26.0	28.2	26.0	23.9	21.7	19.6	22.1	20.1	18.2	16.8		
13	31.2	29.5	24.0	26.0	24.0	22.0	20.0	18.1	20.4	18.6	16.8	15.5		
14	29.0	27.4	22.3	24.2	22.3	20.4	18.6	16.8	18.9	17.2	15.6	14.4		
15	27.1	25.6	20.8	22.6	20.8	19.1	17.4	15.7	17.7	16.1	14.5	13.4		
16	25.4	24.0	19.5	21.2	19.5	17.9	16.3	14.7	16.6	15.1	13.6	12.6		
17	23.9	22.6	18.4	19.9	18.4	16.8	15.3	13.8	15.6	14.2	12.8	11.8		
18	22.5	21.3	17.3	18.8	17.4	15.9	14.5	13.1	14.7	13.4	12.1	11.2		
19	21.4	20.2	16.4	17.8	16.4	15.1	13.7	12.4	13.9	12.7	11.5	10.6		
20	20.3	19.2	15.6	16.9	15.6	14.3	13.0	11.8	13.3	12.1	10.9	10.1		
21	19.3	18.3	14.9	16.1	14.9	13.6	12.4	11.2						
22	18.4	17.4	14.2	15.4	14.2	13.0	11.8	10.7						
23	17.6	16.7	13.6											
24	16.9	16.0	13.0											
25	16.2	15.3	12.5											
26	15.6	14.8	12.0											



# ILLINOIS STEEL COMPANY

## SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in Feet	Section Number									
	B 12			B 13			B 14			
	Depth in Inches									
	8			7			6			
	Pounds per Foot									
	25.5	23	20.5	18	20	17.5	15	17.25	14.75	12.25
1								57.0		
2	86.6	71.8	57.1		64.1	49.4		46.6	42.2	27.6
3	60.8	57.3	53.9	43.2	42.9	39.8	35.0	31.0	28.4	25.8
4	45.6	43.0	40.4	37.9	32.1	29.9	27.6	23.3	21.3	19.4
5	36.5	34.4	32.3	30.3	25.7	23.9	22.1	18.6	17.1	15.5
6	30.4	28.7	26.9	25.3	21.4	19.9	18.4	15.5	14.2	12.9
7	26.1	24.6	23.1	21.7	18.4	17.1	15.8	13.3	12.2	11.1
8	22.8	21.5	20.2	19.0	16.1	14.9	13.8	11.6	10.7	9.7
9	20.3	19.1	18.0	16.9	14.3	13.3	12.3	10.3	9.5	8.6
10	18.2	17.2	16.2	15.2	12.9	11.9	11.0	9.3	8.5	7.7
11	16.6	15.6	14.7	13.8	11.7	10.9	10.0	8.5	7.8	7.0
12	15.2	14.3	13.5	12.6	10.7	10.0	9.2	7.8	7.1	6.5
13	14.0	13.2	12.4	11.7	9.9	9.2	8.5	7.2	6.6	6.0
14	13.0	12.3	11.5	10.8	9.2	8.5	7.9	6.7	6.1	5.5
15	12.2	11.5	10.8	10.1	8.6	8.0	7.4			
16	11.4	10.8	10.1	9.5	8.0	7.5	6.9			
17	10.7	10.1	9.5	8.9						
18	10.1	9.6	9.0	8.4						

ILLINOIS STEEL COMPANY

SPECIAL LIGHT STRUCTURAL BEAMS

BEAMS—SAFE LOADS UNIFORMLY DISTRIBUTED IN THOUSANDS OF POUNDS

Span in Feet	Section Number									
	B-15			B-16				B-17		
	Depth in Inches									
	5			4				3		
	Pounds per Foot									
	14.75	12.25	9.75	10.50	9.50	8.50	7.50	7.50	6.50	5.50
1	50.4	35.7		32.8	27.0	21.0		21.7		
2	32.3	29.1	21.0	19.0	18.0	16.9		20.7	15.8	10.2
3	21.5	19.4	17.2	12.7	12.0	11.3	15.2	10.4	9.6	8.8
4	16.2	14.5	12.9	9.5	9.0	8.5	8.0	6.9	6.4	5.9
5	12.9	11.6	10.3	7.6	7.2	6.8	6.4	5.2	4.8	4.4
6	10.8	9.7	8.6	6.3	6.0	5.6	6.4	4.1	3.8	3.5
7	9.2	8.3	7.4	5.4	5.1	4.8	5.3	3.5	3.2	2.9
8	8.1	7.3	6.4	4.8	4.5	4.2	4.5	3.0	2.7	2.5
9	7.2	6.5	5.7	4.2	4.0	3.8	4.0	2.6	2.4	2.2
10	6.5	5.8	5.2	3.8	3.6	3.4	3.5			
11	5.9	5.3	4.7				3.2			
12	5.4	4.8	4.3							

Safe loads are based upon a maximum bending stress of 16,000 pounds per square inch and include the weight of the beam. Beams to be secured against lateral deflection. Small figures above upper horizontal lines indicate maximum loads for web resistance. Loads below lower horizontal lines produce a deflection exceeding  $\frac{1}{360}$  of span, the allowable deflection for plastered ceilings.

