

## Finishes and Materials

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### Finishes on Steel

#### Bare (Suffix BC)

#### Pregalvanized (Suffix PGC)

A zinc coating is applied to the steel coil at the mill prior to fabrication. Once the material is worked by roll-forming, cutting, or punching, minimal protection is provided for raw edges. This weakness is typical with precoated material and affects the channel section around holes, extreme ends, and the edges of the U-shape lips. Superstrut® pregalvanized material is in conformance with ASTM A-525/G-90 specification standards, representing 0.90 oz. of zinc per square foot of steel. This finish is often referred to as “mill galvanized.”

#### Electrogalvanized (Suffix EGC)

Often referred to as “zinc plated” or “electroplated zinc,” the steel and 0.5 mils of zinc are bonded by an electrolysis process. Electrogalvanizing is most commonly applied to small fittings, hardware, and threaded products.

#### GoldGalv® (No Suffix)

Gold coloured zinc dichromate is applied over the zinc, producing a chemically bonded non porous barrier for protection from moisture and air. This extends the protective life of the zinc, and provides an excellent base for paint, if desired. The GoldGalv® hardware finish also provides a low electrical resistance when grounding of the system is required. Superstrut® channel and fittings are plated after fabrication, so there are no unprotected edges from cutting or punching. Where field cutting is necessary or scratches occur due to construction handling, you still have the sacrificial protection of the plated zinc to minimize the corrosion of raw edges and prevent spreading.

#### Hot-Dipped Galvanized (Suffix HDGC)

The material is zinc coated after fabrication providing total product protection on all surfaces. The fabricated channel or fitting is suspended and then dipped into tanks of hot zinc for a prolonged period, creating a coherent bond. The result is superior corrosion resistance as compared to pregalvanized material. Hot-dipped galvanizing is not recommended for threaded products, considering the zinc coating thickness will often disrupt the threads. Superstrut® hot-dipped galvanized is in conformance with ASTM Specifications A-123 (formerly A-386) and A-153. Superstrut channels maintain a minimum 1.5 oz. of zinc per square foot of steel or 2.5 mils (ASTM A-123, Thickness Grade 65). This finish is also referred to as “Hot-dipped galvanized after fabrication”.

#### Epoxy Powder Coated — Green, Grey or White (Suffix GR, GY or WH)

Epoxy powder resins are applied electrostatically to the steel after fabrication. Once the material is completely covered with the powder-form epoxy, it proceeds through a 400°F (204°C) baking process for ten minutes, creating a chemical bond. This results in a minimum of 1.5 mil thickness of epoxy coating providing excellent resistance to chipping or peeling.

### Special Materials

#### Aluminum (Suffix ALC)

Superstrut® channel is available in aluminum. Fittings in HDG finish or fiberglass material are suggested for fastening products.

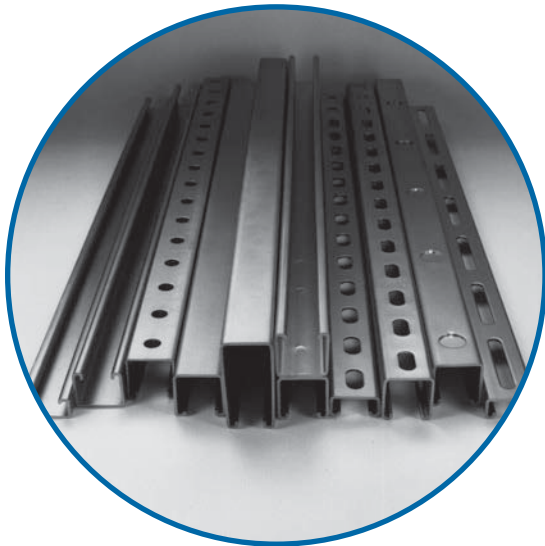
#### Stainless Steel (Suffix SS)

Superstrut® channel is supplied in Type 316 (T316L) stainless steel. All fittings and accessories are in 316SS (SS6). Contact your Regional Sales Office for availability.

**Thomas & Betts reserves the right to change material and finish specifications without notice, to improve its products.**

## Channels and Concrete Inserts

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### Channels

#### Material

Steel channels are cold-roll formed from strip steel. Aluminum and Fiberglass channels are extruded profiles.

#### Material Thickness

All Series 1200	12 gauge material
All Series 1400	14 gauge material
All Series 1600	16 gauge ribbed material

#### Standard Lengths

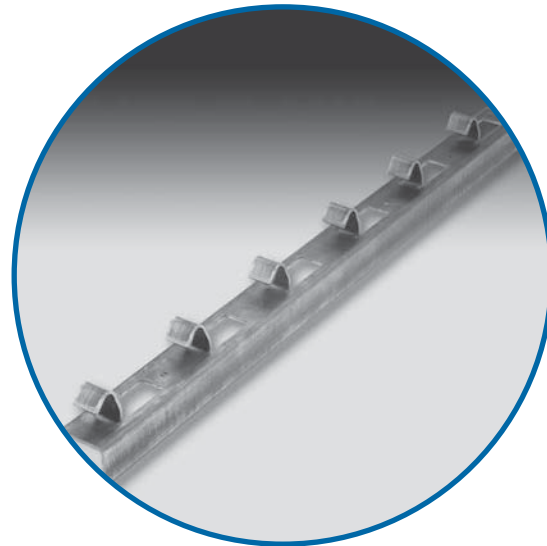
Standard lengths for channels are 10 ft. and 20 ft. with a tolerance of +1/8 in. Special lengths can be requested; however, minimum quantities may apply. Channels are sold per foot.

### Warning

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**Load tables, charts, and design criteria provided in this catalogue are intended as guides only. Selection of proper product, support spacing, erection, and placement are the responsibility of the user.**

**When improperly used as tools of erection, pipe hanger products have occasionally failed. To avoid an accident, the user is cautioned to use the product only as it was intended.**



### Concrete Inserts

#### Material

Superstrut continuous insert channel is manufactured from 12 gauge hot rolled strip steel in two basic sizes as follows:

#### Cat. No. A302

1-5/8 in. x 1-5/8 in. 7/8 in. slot

#### Cat. No. C302

1-5/8 in. x 1-3/8 in. 7/8 in. slot

#### Standard Lengths

Standard lengths are 10 ft. and 20 ft. Product is supplied with foam filler and end caps to prevent concrete from seeping into channel.

#### Application

For casting into concrete walls, floors or ceilings to provide for attachment anywhere along the continuous slot.

#### Design Data

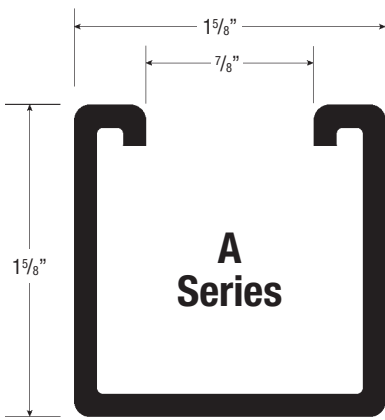
Load ratings as shown have a safety factor of 3 in 3000 lb. hard rock concrete. Where sound concrete does not exist, the load ratings shall not apply.

GoldGalv® hardware finish is standard for all Superstrut Concrete insert products. This is a multi-process finish of electro-plated zinc, followed by gold coloured zinc dichromate to give excellent corrosion resistance and a superior paint base.

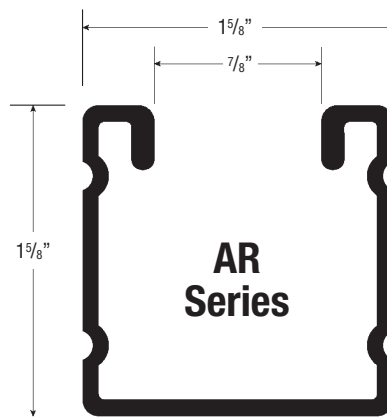
For more information on load design, see page A57 for Engineering Data and Specifications.

## Channels and Concrete Inserts

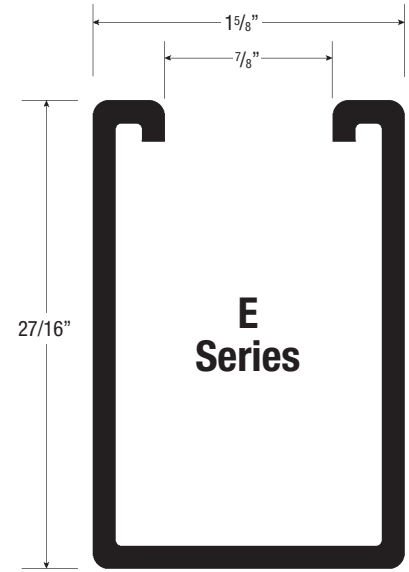
**Channels at Full Scale**  
Available in 10 and 20 foot length



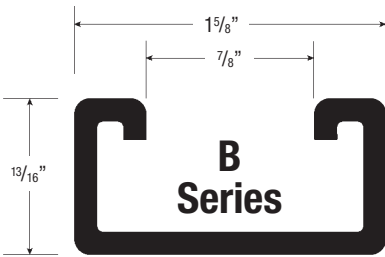
**A Series**  
A1200 12 gauge  
A1400 14 gauge



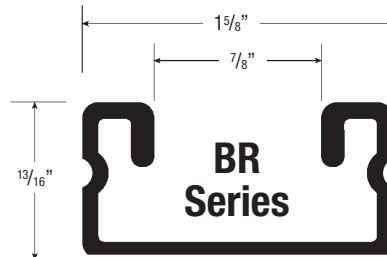
**AR Series**  
16 gauge only



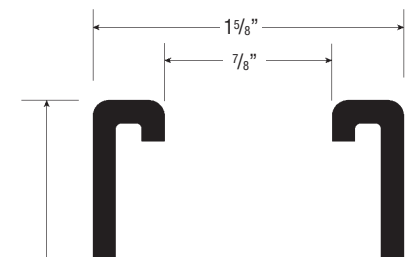
**E Series**  
E1200 12 gauge



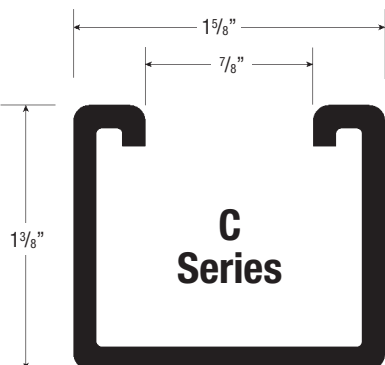
**B Series**  
B1200 12 gauge  
B1400 14 gauge



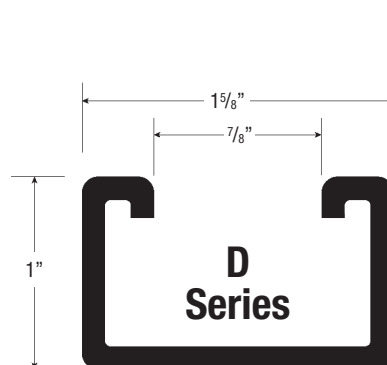
**BR Series**  
16 gauge only



**H Series**  
H1200 12 gauge



**C Series**  
C1200 12 gauge



**D Series**  
D1200 12 gauge

## Channels and Concrete Inserts

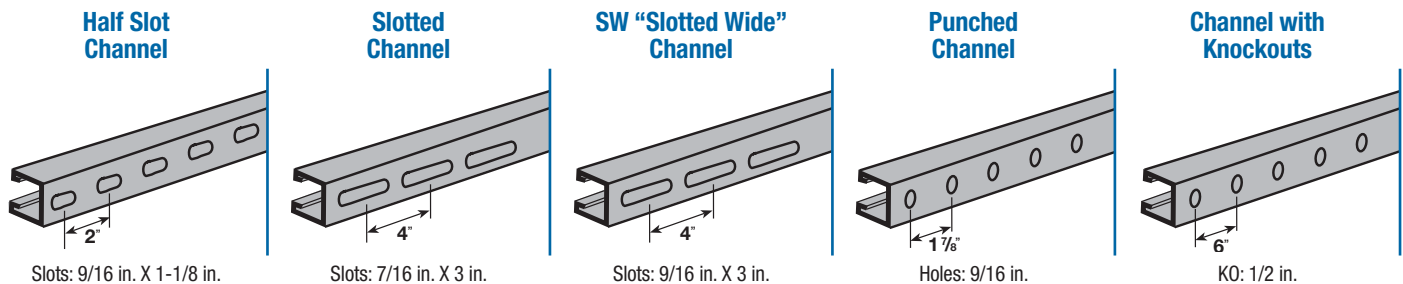
### Channel Selection Chart

CHANNEL	HOLE CONFIGURATIONS					LENGTH	FINISH ON STEEL						SPECIAL MATERIALS			
	HS	S	SW	P	KO		ft.	B(C)	PG(C)	EG(C)	GoldGalv®	HDG(C)	GR(C),GY(C),WH(C)	AL(C)	T316L	SS6(C)
A1200						10 or 20										
A1400						10 or 20										
AR1600						10 or 20										
B1200						10 or 20										
B1400						10 or 20										
BR1600						10 or 20										
C1200						10 or 20										
D1200						10 or 20										
E1200						10 or 20										
H1200						10 or 20										

### Legend

EXAMPLES	HOLE CONFIGURATION		FINISH ON STEEL		SPECIAL MATERIALS	
	Suffix		Suffix		Suffix	
<b>A120010PG</b> Plain channel, 10 ft., pre- galvanized finish	<b>blank</b>	Plain, no holes	<b>BC</b>	Bare	<b>AL</b>	Aluminum
	<b>HS</b>	Half slot	<b>PGC</b>	Pre-galvanized	<b>SS6 (C)</b>	Stainless Steel Type 316
<b>B1400P10</b> Punched channel, 10 ft., GoldGalv® finish	<b>S</b>	Slotted	<b>EGC</b>	Electrogalvanized	<b>T316L</b>	Stainless Steel Type 316L
	<b>SW</b>	Slotted wide	<b>Blank</b>	GoldGalv®		
	<b>P</b>	Punched	<b>HDGC</b>	Hot dipped galvanized		
<b>E1200HS20HDG</b> Half slot channel, 20 ft. hot dipped galvanized	<b>KO</b>	Knockout	<b>GR,GY,WH</b>	Epoxy paint in green (GR), grey (GY), or white (WH)		
		Standard offering		A minimum order quantity may apply		

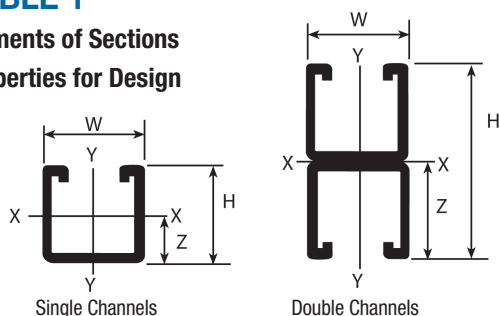
### Hole Configuration



## Engineering Data & Specifications

### Design Data – Metal Framing Channel

**TABLE 1**  
Elements of Sections  
Properties for Design



**Nominal Thickness (inches)**

- 12 ga = 0.105
- 14 ga = 0.075
- 16 ga = 0.060

LEGEND	
<b>I</b>	Moment of inertia
<b>S</b>	Section Modulus
<b>r</b>	Radius of Gyration
<b>Z</b>	Nominal Axis
<b>A</b>	Area

Section Member	WT. lb./ft.	H (in.)	W (in.)	A (in.) <sup>2</sup>	X-X AXIS				Y-Y AXIS		
					I (in.) <sup>4</sup>	S (in.) <sup>3</sup>	r (in.)	Z (in.)	I (in.) <sup>4</sup>	S (in.) <sup>3</sup>	r (in.)
<b>Single Channel</b>											
A1200	1.90	1.625	1.625	0.557	0.192	0.212	0.587	0.719	0.237	0.292	0.652
B1200	1.28	0.813	1.625	0.381	0.031	0.063	0.283	0.331	0.137	0.168	0.600
C1200	1.70	1.375	1.625	0.500	0.121	0.155	0.492	0.595	0.205	0.252	0.640
D1200	1.44	1.000	1.625	0.424	0.053	0.092	0.356	0.403	0.159	0.196	0.616
E1200	2.47	2.438	1.625	0.726	0.529	0.399	0.853	1.112	0.335	0.413	0.679
<b>Double Channel</b>											
A1202	3.80	3.250	1.625	1.114	0.948	0.583	0.992	1.625	0.474	0.584	0.652
B1202	2.56	1.626	1.625	0.762	0.147	0.181	0.439	0.813	0.274	0.337	0.600
C1202	3.40	2.750	1.625	1.000	0.595	0.433	0.772	1.375	0.409	0.504	0.640
D1202	2.88	2.000	1.625	0.847	0.257	0.257	0.552	1.090	0.319	0.393	0.616
E1202	4.94	4.876	1.625	1.450	2.854	1.171	1.402	2.438	0.672	0.827	0.680
<b>Double Channel</b>											
H1202	6.10	6.500	1.625	1.794	6.273	1.930	1.870	3.250	0.871	1.072	0.697
A1402	2.80	3.250	1.625	0.801	0.668	0.411	0.913	1.625	0.367	0.452	0.677
B1402	1.94	1.626	1.625	0.560	0.112	0.138	0.447	0.813	0.206	0.254	0.607

**TABLE 2**

### Maximum Pullout and Slip Loads for Steel Channel and Channel Nuts

Channel Nuts Size / Thread	Channel All Series	Pull Out Strength		Slip Resistance		Torque	
		lb.	kN	lb.	kN	lb.	kN
1/4 - 20	A1200 B1200 C1200 D1200 E1200 H1200	600	2.7	300	1.3	6	8
5/16 - 18		800	3.6	500	2.2	11	15
3/8 - 16		1000	4.4	800	3.6	19	25
1/2 - 13		2000	8.9	1500	6.7	50	70
5/8 - 11		2500	11.1	1500	6.7	100	135
3/4 - 10		2500	11.1	1700	7.6	125	170
1/4 - 20	A1400	600	2.7	300	1.3	6	8
5/16 - 18		800	3.6	400	1.8	11	15
3/8 - 16		1000	4.4	750	3.3	19	25
1/2 - 13	B1400	1400	6.2	1000	4.4	50	70

For aluminum channel the pull out load is calculated by multiplying the appropriate data by 50%. For slip resistance multiply by 75%.

### Maximum Pullout and Slip Loads for Fiber Glass Channel and Channel Nuts

Channel Nuts Size / Thread	Channel All Series	Pull Out Strength		Slip Resistance		Torque	
		lb.	kN	lb.	kN	lb.	kN
1/4 - 20	-	-	-	-	-	-	-
5/16 - 18	-	-	-	-	-	-	-
3/8 - 16	A1200	300	1.3	150	0.6	200	22.6
1/2 - 13	D1200	300	1.3	150	0.6	200	22.6

## Engineering Data & Specifications

### Design Data – Metal Framing Channel

#### TABLE 3

##### Design loads for channel used as beam or column

##### BEAM LOADS

Table 3 contains simple beam, uniformly-distributed loads calculated at 25,000 psi material stress. Beam loads are based on channel being loaded across the x-x axis. Loads are also listed at reduced deflections for long spans.

##### Maximum loads at 25,000 psi stress

Maximum allowable deflections and maximum uniform loads for all spans at 25,000 psi material stress.

##### Reduced load for all 1/180 Span Deflection

For moderate deflections on the longer spans, reduced loads are listed which will produce a deflection equal to 1/180 of the span. When maximum loads do not induce deflections exceeding 1/180 x the span length reduced loads are not required.

##### Reduced load for 1/360 Span Deflection

For very slight deflections on the longer spans, reduced loads are listed which will produce a deflection equal to 1/360 of the span. When maximum loads do not induce deflections exceeding 1/360 x the span length reduced loads are not required.

##### Concentrated loads

To obtain values for concentrated loads from Table 3, multiply uniform load by 0.5 and deflection by 1.25.

##### Slotted, Punched, or KO Channel

Reduce load rating by 5%.

##### Long span deep beams

Support in a manner to prevent rotation at supports and tie between supports to prevent twist.

##### COLUMN LOADS

Allowable column loads given are for uniform axial loading with pinned ends. For eccentric loading or other end conditions reduce allowable loads according to standard engineering practice.

##### DYNAMIC LOADS

Allowable dynamic loads may be calculated by dividing the static loads shown in Table 3, by 2.08.

Maximum beam and column loading for special materials is multiplied with the following factors:

Channel Type	Beam Type	Column Load
Stainless Steel	1	1
Aluminum	0.33	0.33

##### Warning

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## Engineering Data & Specifications

### Design Data – Metal Framing Channel

TABLE 3 (cont'd.)

Single Channel										
Cat. No.	Depth (in.)	Ga.	Maximum Uniform		1/180 Span		1/360 Span		Col. Load	
			Load	Defl.	Load	Defl.	Load	Defl.		
<b>12 in. Beam or Column</b>										
A1200	1-5/8	12	3,534	0.014	0.067	0.033			10,533	
B1200	13/16		1,050	0.026					6,683	
C1200	1-3/8		2,584	0.016					9,345	
D1200	1		1,538	0.022					8,670	
E1200	2-7/16		6,650	0.010					13,830	
H1200	3-1/4		10,583	0.008					17,106	
A1400	1-5/8	14	2,434	0.015	0.067	0.033			7,575	
B1400	13/16		850	0.028					4,950	
<b>18 in. Beam or Column</b>										
A1200	1-5/8	12	2,355	0.033	0.100	0.050			10,2100	
B1200	13/16		700	0.059					6,058	
C1200	1-3/8		1,723	0.038					8,970	
D1200	1		1,025	0.052					7,930	
E1200	2-7/16		4,434	0.023					13,482	
H1200	3-1/4		7,055	0.016					16,693	
A1400	1-5/8	14	1,623	0.031	0.100	0.050	453		7,334	
B1400	13/16		566	0.063					4,150	
<b>24 in. Beam or Column</b>										
A1200	1-5/8	12	1,766	0.058	0.133	0.067			9,842	
B1200	13/16		525	0.105					333	5,315
C1200	1-3/8		1,291	0.066					8,545	
D1200	1		769	0.087					490	7,050
E1200	2-7/16		3,325	0.039					13,082	
H1200	3-1/4		5,291	0.030					16,277	
A1400	1-5/8	14	1,216	0.056	0.133	0.067	258		7,058	
B1400	13/16		425	0.110					4,000	
<b>30 in. Beam or Column</b>										
A1200	1-5/8	12	1,414	0.089	0.167	0.083			9,419	
B1200	13/16		420	0.164					266	4,465
C1200	1-3/8		1,034	0.104					1,040	8,060
D1200	1		0.615	0.129					389	6,650
E1200	2-7/16		2,660	0.063					12,640	
H1200	3-1/4		4,234	0.046					15,698	
A1400	1-5/8	14	974	0.088	0.167	0.083	165		6,753	
B1400	13/16		340	0.172					3,420	

When no numbers are shown, use the maximum uniform load. Deflections are given in inches; loads in lb.

Double Channel										
Cat. No.	Depth (in.)	Ga.	Maximum Uniform		1/180 Span		1/360 Span		Col. Load	
			Load	Defl.	Load	Defl.	Load	Defl.		
<b>12 in. Beam or Column</b>										
A1202	3-1/4	12		0.008						21,177
B1202	1-5/8	12	3,016	0.016			0.067		0.033	14,110
C1202	2-3/4	12		0.010						18,990
D1202	2	12		0.012						18,312
E1202	4-7/8	12		0.005						27,623
H1202	6-1/2	12		0.004						34,210
A1402	3-1/4	14		0.008			0.067		0.033	15,250
B1402	1-5/8	14	2,300	0.016						10,390
<b>18 in. Beam or Column</b>										
A1202	3-1/4	12		0.018						20,609
B1202	1-5/8	12	2,011	0.036			0.100		0.050	13,440
C1202	2-3/4	12	4,811	0.021						18,470
D1202	2	12		0.028						17,942
E1202	4-7/8	12		0.013						16,926
H1202	6-1/2	12		0.009						33,390
A1402	3-1/4	14		0.018			0.100		0.050	14,867
B1402	1-5/8	14	1,534	0.036						9,910
<b>24 in. Beam or Column</b>										
A1202	3-1/4	12	4,858	0.031			0.133		0.067	19,974
B1202	1-5/8	12	1,509	0.064						12,670
C1202	2-3/4	12	3,609	0.038						17,890
D1202	2	12	2,680	0.042						17,160
E1202	4-7/8	12		0.021						26,143
H1202	6-1/2	12		0.016						32,435
A1402	3-1/4	14	3,425	0.033			0.133		0.067	14,426
B1402	1-5/8	14	1,150	0.064						9,350
<b>30 in. Beam or Column</b>										
A1202	3-1/4	12	3,886	0.049			0.167		0.083	19,261
B1202	1-5/8	12	1,206	0.100						11,803
C1202	2-3/4	12	2,886	0.059						17,230
D1202	2	12	2,128	0.084						16,480
E1202	4-7/8	12	7,806	0.034						25,259
H1202	6-1/2	12		0.025						31,395
A1402	3-1/4	14	2,740	0.050			0.167		0.083	13,937
B1402	1-5/8	14	920	0.100						8,730