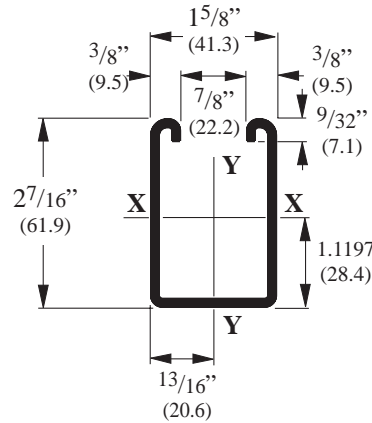
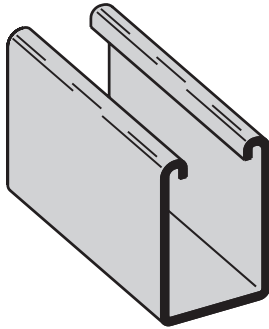


# B12 CHANNEL & COMBINATIONS

## B12

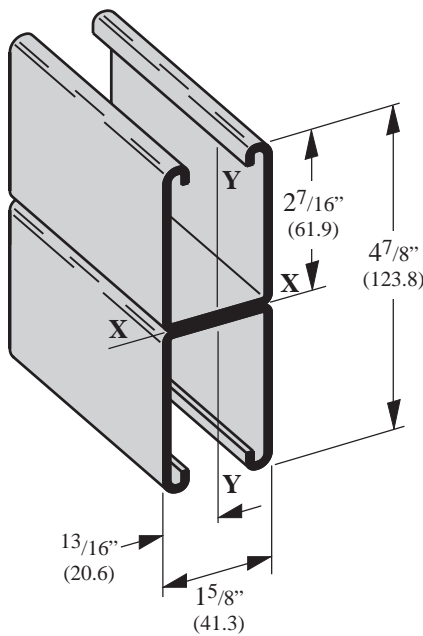
- Thickness: 12 Gauge (2.6 mm)
- Standard lengths: 10' (3.05 m) & 20' (6.09 m)
- Standard finishes: Plain, Dura-Green, Pre-Galvanized, Hot-Dipped Galvanized, Aluminum
- Weight: 2.47 Lbs./Ft. (3.67 kg/m)



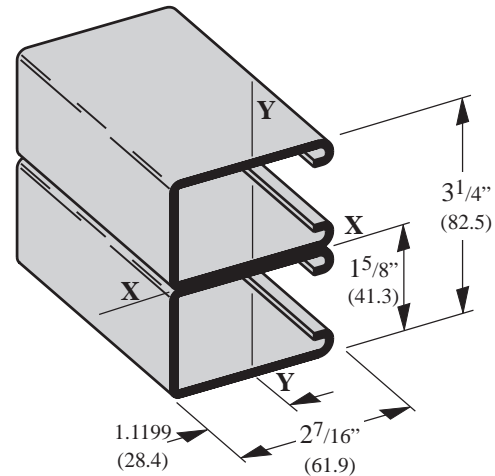
### SECTION PROPERTIES

Channel	Weight		Areas of Section		Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)		X - X Axis				Y - Y Axis			
											Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)			
	lbs./ft.	kg/m	sq. in.	cm <sup>2</sup>	in. <sup>4</sup>	cm <sup>4</sup>	in. <sup>3</sup>	cm <sup>3</sup>	in.	cm	in. <sup>4</sup>	cm <sup>4</sup>	in. <sup>3</sup>	cm <sup>3</sup>	in.	cm		
<b>B12</b>	2.484	(3.70)	.731	(4.71)	.5349	(22.26)	.4061	(6.65)	.856	(2.17)	.3377	(14.06)	.4156	(6.81)	.680	(1.73)		
<b>B12A</b>	4.969	(7.40)	1.462	(9.43)	2.9036	(120.86)	1.1915	(19.52)	1.409	(3.58)	.6756	(28.12)	.8315	(13.63)	.680	(1.73)		

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



**B12A**  
Wt. 4.94 Lbs./Ft. (7.35 kg/m)



**B12B**  
Wt. 4.94 Lbs./Ft. (7.35 kg/m)

## Dura-Green® and Dura-Copper® Epoxy Coatings

Dura-Green and Dura-Copper epoxy coatings are water borne epoxy coatings applied to B-Line products by a precisely controlled cathodic electro-deposition process. This process is accomplished using a conveyor to transport channel and fittings through several cleaning, phosphatizing and application stages prior to being baked (See diagram below).

This custom-designed paint system is used for painting all channels, channel combinations, slotted angle, and fittings.

Samples are selected on a routine basis for Salt Spray (fog) testing to verify the quality of the finish. These tests are performed in accordance with ASTM B117-73 and evaluated and related according to ASTM D1654079 (Tables 1 & 2).

The Dura-Green and Dura-Copper Epoxy coatings have been tested and listed by Underwriters Laboratories in accordance with “Standard for Surface Metal Raceway

and Fittings, UL5” and “Standard for Pipe Hanger Equipment for Fire Protection Service, UL203” and meets or exceeds all requirements of Federal Specification TT-C-490B Paragraph 3.

Due to Dura-Green’s organically based composition, it seats itself into porous surfaces more completely and efficiently than zinc coatings. As these porous caverns are filled along the material profile, the outer finished surface demonstrates an increased smooth uniform plane which produces considerably less off-gasing when tested.

B-Line’s Dura-Green channel meets or exceeds 100 level clean room standards. This was confirmed by testing the channel in accordance with Boeing (PCL) Standards, which are more stringent and complete than ASTM E595-93. Dura-Green was found to be a superior finish, due in part to its proven application process.

### PVC Coating

Another of the corrosion resistant coatings offered by B-Line is PVC (polyvinyl chlo-

ride), applied over steel or aluminum channel and fittings. The PVC coating process begins by cleaning the product thoroughly. A bonding coat is applied to the part and then preheated to a temperature above the melting point of the coating powder. The product is then passed through a fluidized bed of vinyl plastic powder where the powder particles melt, adhere and flow out to form a smooth continuous coating. The thickness is controlled by the base metal temperature and the immersion time in the bed. It is then post-heated to complete the fusion of the outer surfaces.

The standard coating thickness of B-Line’s PVC coated products is 15 mils (.380 mm), plus or minus 5 mils (.125 mm). Since the chemistry, not the thickness of vinyl plastic PVC determines longevity, a coating of 10 to 20 mils (.250 to .500 mm) is more than adequate. If the corrosive conditions are such that the plasticizers are leached out, a thicker coating will do little to extend the life of a coated product.

For certain environments, a plastisol dipped PVC coating is available on request.

PVC coating depends totally on the concept of encapsulation attached to the base metal by a bonding agent. If any hole or discontinuity occurs, the corrosive action can undercut the base metal to a point where all that remains is the PVC.

In the event of field cuts or any other damage to the coating, a liquid PVC patch, available from B-Line, must be applied to maintain the integrity of the coating. After the installation is complete, a thorough inspection should be performed to assure the absence of voids, pinholes, or cuts.

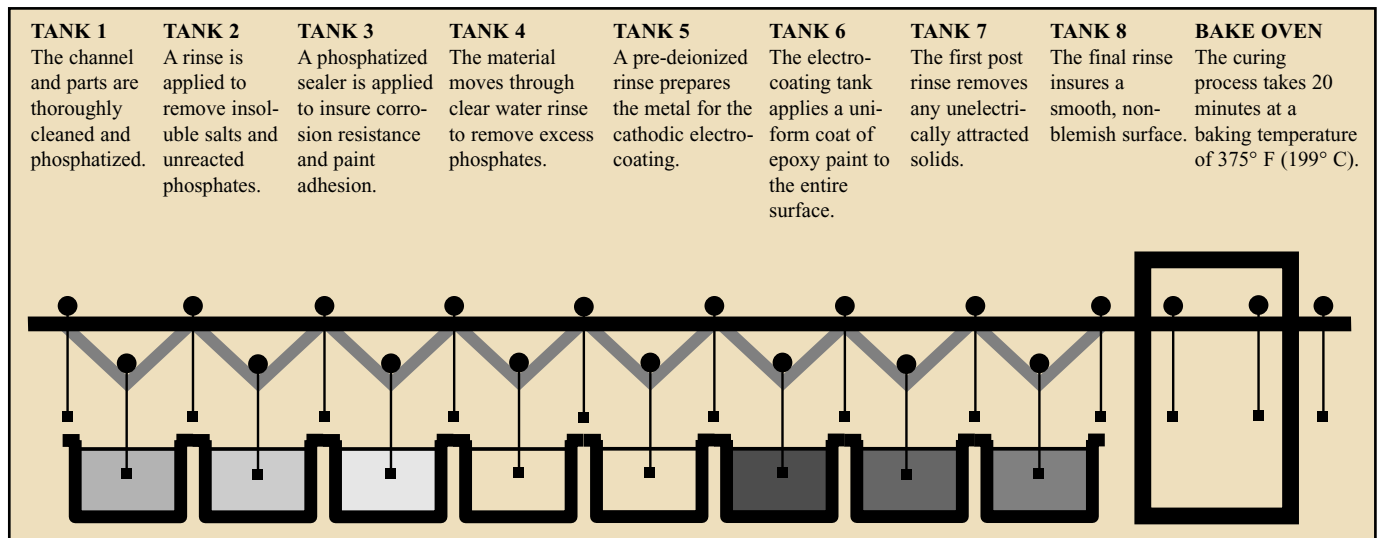
## SALT SPRAY TEST RESULTS

Type of Finish	Unscribed 5% Failure (1)	Scribed 1/8” (3.2) Creepage from Scribe (1)
B-Line Epoxy <sup>(2)</sup>	612 Hours	312 Hours
Mill Galv. (Pre-Galv.) G90	192 Hours	288 Hours
Perma-Green	438 Hours	231 Hours
Zinc Chromate	36 Hours	96 Hours
Industry Green (Range)	10 to 36 Hours	4 to 30 Hours

(1) All salt spray (fog) tests conducted in accordance with ASTM B117-73 and evaluated and rated according to ASTM D1654-79 Tables 1 & 2. Tests are performed and certified by an independent testing laboratory.

(2) Dura-Green and Dura-Copper finishes meet or exceed all requirements of Federal Specification TT-C-490B Paragraph 3.

## DURA-GREEN®/DURA-COPPER® EPOXY COATING PROCESS



# METAL FRAMING CHANNELS

## Channel

B-Line's metal framing channel is cold formed on our modern rolling mills from 12 Ga. (2.6), 14 Ga. (1.9), and 16 Ga. (1.5) low carbon steel strips. A continuous slot with inturned lips provides the ability to make attachments at any point.

## Lengths

Standard lengths are 10' (3.05m) and 20' (6.09m) with length tolerance of +1/8" (+3.2mm). Custom lengths are available upon request.

## Slots

B-Line's slotted series of channels offer full flexibility. A variety of pre-punched slot patterns eliminate the need for precise field measuring for hole locations. Slots offer wide adjustments in the alignment and bolt sizing.

## Holes

A variety of pre-punched 9/16" (14.3 mm) diameter hole patterns are available in B-Line channels. These hole patterns provide an economical alternative to costly field drilling required for many applications.

## Knockouts

When used with series B217-20 Closure Strips, B-Line's knockout channels can be used to provide an economical U.L. listed surface raceway. Channels are furnished with 7/8" (22.2 mm) knockouts on 6" (152 mm) centers, allowing for perfect fixture alignment on spans up to 20' (6.09 m).

## Materials & Finishes\*

### Steel: Plain

12 Ga. (2.6), 14 Ga. (1.9) and 16 Ga. (1.5)

### Steel: Pre-galvanized

12 Ga. (2.6), 14 Ga. (1.9) and 16 Ga. (1.5)

Finish Code	Finish	Specification
PLN	Plain	ASTM A570 Gr. 33
GRN	Dura-Green	TT-C-490 B
GALV	Pre-Galvanized	ASTM A653 SS Gr. 33
HDG	Hot-Dipped Galvanized	ASTM A123
SS4	Stainless Steel Type 304	ASTM A240
SS6	Stainless Steel Type 316	ASTM A240
AL	Aluminum	Aluminum 6063-T6

\*Unless otherwise noted.

## Design Load

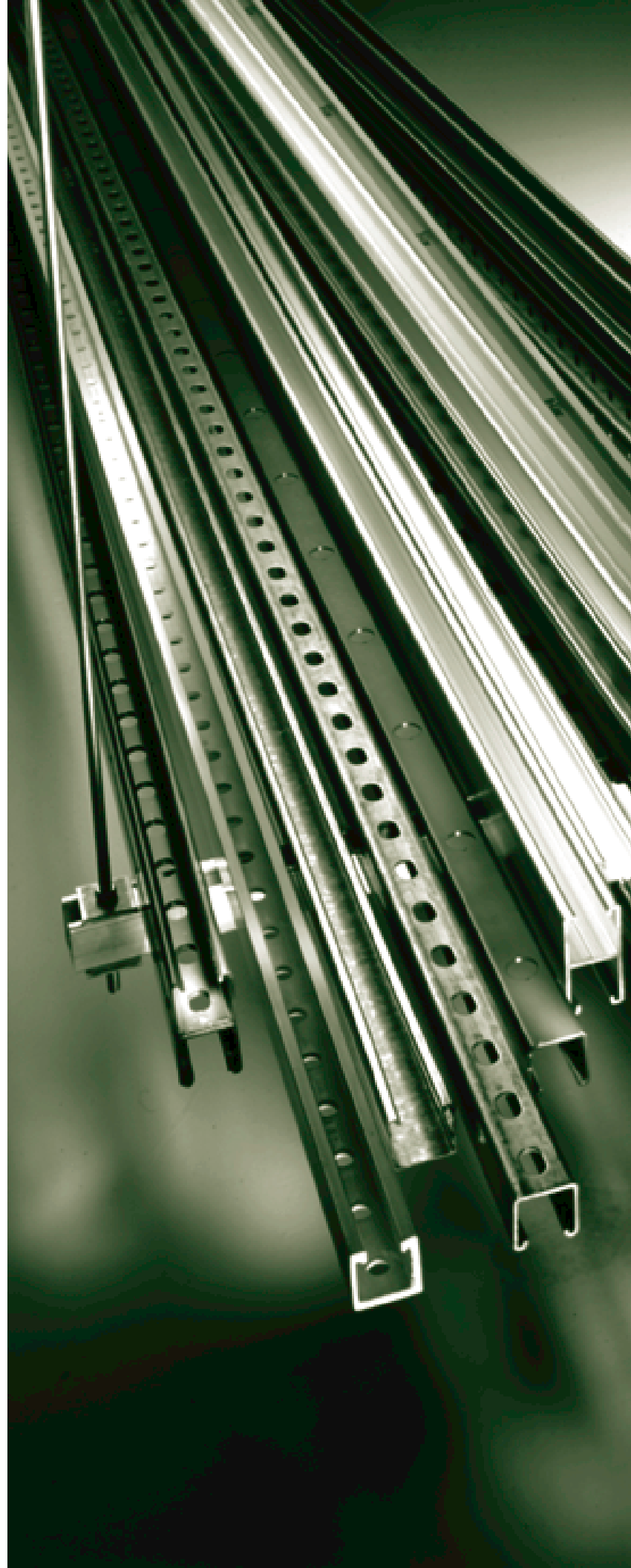
The design loads given for strut beam loads are based on a simple beam condition using an allowable stress of 25,000 psi. This allowable stress results in a safety factor of 1.68. This is based upon virgin steel minimum yield strength of 33,000 psi cold worked during rolling to an average yield stress of 42,000 psi.

## Welding

Weld spacing is maintained between 2 1/2 inches (63.5 mm) and 3 inches (76.2 mm) on center. Through high quality control testing of welded channels and continuous monitoring of welding equipment, B-Line provides the most consistent combination channels available today.

## Metric

Metric dimensions are shown in parentheses. Unless noted, all metric dimensions are in millimeters.



## SELECTION CHART

for Channels, Materials and Hole Patterns

Channel Type	Channel Dimensions				Material & Thickness *				Channel Hole Pattern **				
	Height		Width		Steel	Alum.	Stainless Steel		SH 9/16" x 7/8" slots on 2" centers	S 13/32" x 3" slots	H17/8 9/16" diameter holes	TH 9/16" diameter on 1 7/8" centers	KO6 7/8" diameter knockouts
							Type 304	Type 316					
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>						
<b>B11</b>	3 1/4"	(82.5)	1 5/8"	(41.3)	12 Ga.	-	-	-	<u>1</u>	<u>1</u>	<u>1</u>	-	<u>1</u>
<b>B12</b>	2 7/16"	(61.9)	1 5/8"	(41.3)	12 Ga.	.105	-	-	<u>1 2</u>	<u>1</u>	<u>1 2</u>	-	<u>1 2</u>
<b>B22</b>	1 5/8"	(41.3)	1 5/8"	(41.3)	12 Ga.	.105	12 Ga.	12 Ga.	<u>1 2 3 4</u>	<u>1 3</u>	<u>1 2 3</u>	<u>1</u>	<u>1 2</u>
<b>B24</b>	1 5/8"	(41.3)	1 5/8"	(41.3)	14 Ga.	.080	14 Ga.	14 Ga.	<u>1 2 3 4</u>	<u>1</u>	<u>1 2 3</u>	-	<u>1 2</u>
<b>B26</b>	1 5/8"	(41.3)	1 5/8"	(41.3)	16 Ga.	-	-	-	<u>1</u>	<u>1</u>	<u>1</u>	-	<u>1</u>
<b>B32</b>	1 3/8"	(34.9)	1 5/8"	(41.3)	12 Ga.	-	12 Ga.	-	<u>1 3</u>	<u>1</u>	<u>1 3</u>	-	<u>1</u>
<b>B42</b>	1"	(25.4)	1 5/8"	(41.3)	12 Ga.	-	12 Ga.	-	<u>1 3</u>	<u>1</u>	<u>1 3</u>	-	<u>1</u>
<b>B52</b>	1 3/16"	(20.6)	1 5/8"	(41.3)	12 Ga.	-	12 Ga.	-	<u>1</u>	<u>1</u>	<u>1</u>	-	<u>1</u>
<b>B54</b>	1 3/16"	(20.6)	1 5/8"	(41.3)	14 Ga.	.080	14 Ga.	14 Ga.	<u>1 2 3 4</u>	<u>1</u>	<u>1 2 3 4</u>	-	<u>1 2</u>
<b>B56</b>	1 3/16"	(20.6)	1 5/8"	(41.3)	16 Ga.	-	-	-	<u>1</u>	<u>1</u>	<u>1</u>	-	<u>1</u>
<b>B62</b>	1 3/16"	(20.6)	1 3/16"	(20.6)	18 Ga.	-	-	-	-	-	-	-	-
<b>B72</b>	1 3/32"	(10.3)	1 3/16"	(20.6)	18 Ga.	-	-	-	-	-	-	-	-
<b>E7016</b>	3/4"	(19.0)	5/8"	(15.9)	16 Ga.	-	-	-	-	-	-	-	-

The selection has been prepared to provide a reference for available channel, materials and hole patterns. Material types available for various hole patterns are defined by numbers 1 thru 4.

Some stainless steel channels with hole patterns are available on special order only.

\*Metric equivalent for thicknesses shown in chart.

12 Ga. = 2.6 mm                      18 Ga. = 1.2 mm

14 Ga. = 1.9 mm                      .105 = 2.6 mm

16 Ga. = 1.5 mm                      .080 = 2.0 mm

\*\*1 - Steel

2 - Aluminum

3 - Type 304 Stainless Steel

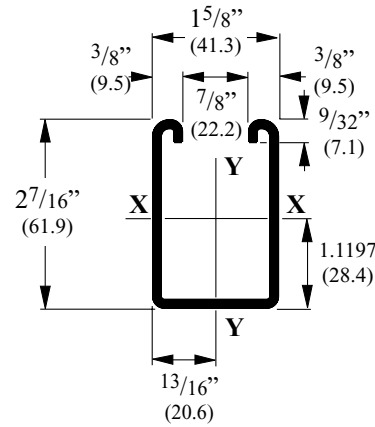
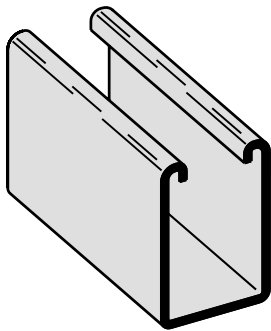
4 - Type 316 Stainless Steel

Properties may vary due to commercial tolerances of the material.

Channel Part Numbering			
Example:			
<b>B22 SH SS4 120</b>			
Channel Type	Hole Patterns	Material/Finish	Length
B11	SH	GRN	120
B12	S	GALV	240
B22	H178	HDG	
B24	TH	SS4	
B26	K06	SS6	
B32		AL	
B42			
B52			
B54			
B56			
B62			
B72			
E7016			

## B12

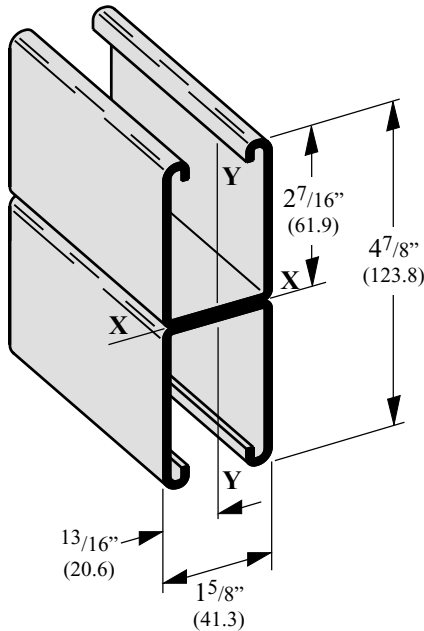
- Thickness: 12 Gauge (2.6 mm)
- Standard lengths: 10' (3.05 m) & 20' (6.09 m)
- Standard finishes: Plain, Dura-Green, Pre-Galvanized, Hot-Dipped Galvanized, Aluminum
- Weight: 2.47 Lbs./Ft. (3.67 kg/m)



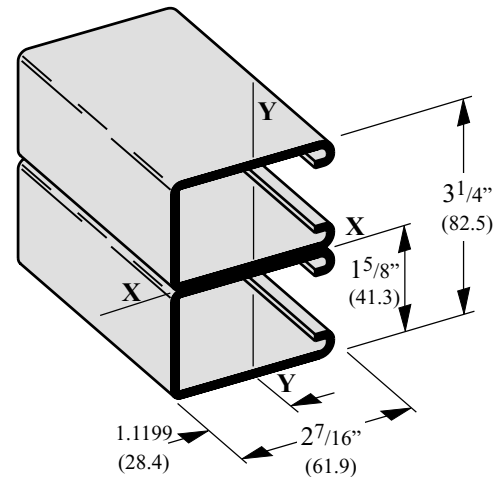
### SECTION PROPERTIES

Channel	Weight lbs./ft. kg/m	Areas of Section		Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)		Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)	
		sq. in.	cm <sup>2</sup>	in. <sup>4</sup>	cm <sup>4</sup>	in. <sup>3</sup>	cm <sup>3</sup>	in.	cm	in. <sup>4</sup>	cm <sup>4</sup>	in. <sup>3</sup>	cm <sup>3</sup>	in.	cm
<b>B12</b>	2.484 (3.70)	.731 (4.71)	.5349 (22.26)	.4061 (6.65)	.856 (2.17)	.3377 (14.06)	.4156 (6.81)	.680 (1.73)							
<b>B12A</b>	4.969 (7.40)	1.462 (9.43)	2.9036 (120.86)	1.1915 (19.52)	1.409 (3.58)	.6756 (28.12)	.8315 (13.63)	.680 (1.73)							

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



**B12A**  
Wt. 4.94 Lbs./Ft. (7.35 kg/m)



**B12B**  
Wt. 4.94 Lbs./Ft. (7.35 kg/m)