

# Metal Framing – ZI12-158

1 5/8" x 1 5/8" Channel

Standard finish is Pre-Galvanized (PG).

Green Painted (GN) is made to order.

Metal thickness is 12 gauge (0.105").

## ELEMENTS OF SECTION

CATALOG NUMBER	STOCK NUMBER	PUNCH	LENGTH	WEIGHT	AREA OF SECTION	AXIS X-X			AXIS Y-Y			BUNDLE QTY
						ft.	lbs./ft.	in. <sup>2</sup>	I (in. <sup>4</sup> )	S (in. <sup>3</sup> )	R (in.)	
ZI12-158	5201210000	Solid	10	1.89	0.583	0.188	0.203	0.581	0.257	0.316	0.680	500
	5201010000	HS										500
	5201110000	FS										500
	—	P										—
ZI12-158 BTB	5211110000	HS/BTB*	10	3.78	1.166	0.920	0.566	0.910	0.514	0.632	0.680	250
ZI12-158	5201220000	Solid	20	1.89	0.583	0.188	0.203	0.581	0.257	0.316	0.680	500
	5201020000	HS										500
	5201120000	FS										500
	—	P										—
ZI12-158 BTB	5211120000	HS/BTB*	20	3.78	1.166	0.920	0.566	0.910	0.514	0.632	0.680	300

I: Moment of inertia

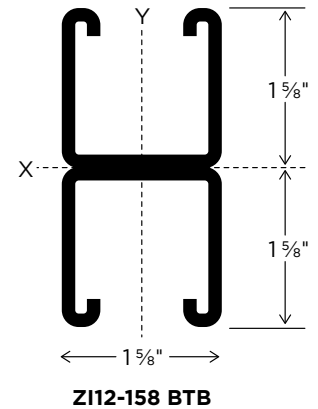
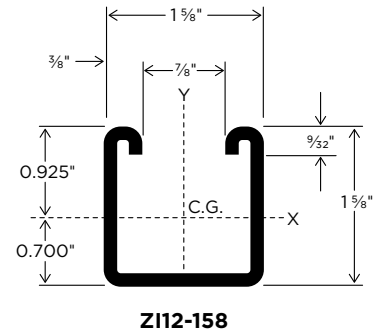
S: Section modulus

R: Radius of gyration

\*BTB is welded back to back

## BEAM AND COLUMN LOADS DATA

CATALOG NUMBER	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD AT STRESS OF 25,000 PSI	DEFLECTION AT STRESS OF 25,000 PSI	UNIFORM LOAD WHEN MAXIMUM DEFLECTION = SPAN/240	MAXIMUM ALLOWABLE LOAD OF COLUMN
	in.	lbs.	in.	lbs.	lbs.
ZI12-158	18	2213	0.031	2213	11300
	24	1680	0.055	1680	9700
	30	1340	0.086	1340	8850
	36	1125	0.125	1125	8600
	42	950	0.168	950	7550
	48	855	0.225	757	6720
	60	690	0.356	484	5800
	72	555	0.594	336	4970
	84	490	0.693	247	4250
	96	433	0.915	189	3500
	120	335	1.382	121	2100
	ZI12-158 BTB	18	6530	0.018	6530
24		4895	0.033	4895	21800
30		3800	0.050	3800	21500
36		3100	0.070	3100	21000
42		2700	0.097	2700	20600
48		2300	0.124	2300	19900
60		1930	0.203	1930	17950
72		1560	0.284	1560	15940
84		1360	0.393	1210	14750
96		1200	0.438	926	12650
120		953	0.680	593	8000

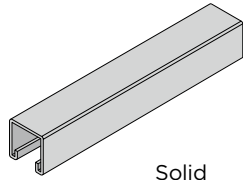


**Beam Loads:** Loads listed are uniformly distributed; for loads concentrated at center of span, multiply uniform load at table by 0.5 and multiply the deflection by 0.8. When deflection is not a factor, use stress of 25,000 psi. When deflection is a factor, use deflection of SPAN/240.

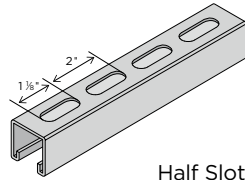
All weights and dimensions shown are subject to commercial tolerances.

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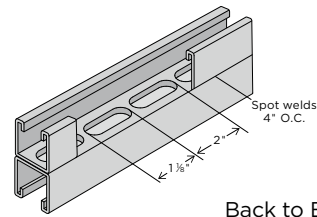
## Punching Options



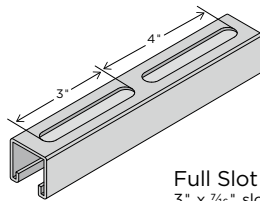
Solid



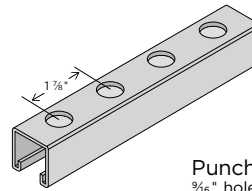
Half Slot (HS)  
1 1/4" x 3/16" slots punched  
on 2" centers



Back to Back (BTB)  
Back to back channel with  
standard half-slots



Full Slot (FS)  
3" x 3/16" slots punched  
on 4" centers



Punch (P)  
3/16" holes punched  
on 1 1/2" centers

### Material Specifications and Finishes

**Carbon Steel**— Structural grade steel sheet coil that has been melted and rolled at the steel mill to conform to ASTM A1011 SS GR 33 (Hot Rolled) and ASTM A653 SS GR 33 (Galvanized). These ASTM specifications require the mechanical properties to be a minimum of 33 ksi yield and 52 ksi tensile. Additionally, the mechanical properties of the incoming steel are further increased in the actual rollforming process. This is sometimes referred to as “work hardening.”

**Stainless Steel**— Chromium-nickel austenitic steel sheet coil that has been melted, rolled and annealed at the steel mill to conform to ASTM A240 Type 304. Generally, stainless steel has a higher yield and tensile than carbon steel produced to GR 33. The mechanical properties of the incoming steel (stainless) tend not to increase as much as carbon steel in the rollforming process. Strut produced from stainless steel offers superior protection in harsh and corrosive environments.

**PL**— Plain. Plain strut does not have any protective coating other than the residual mill oil and rolling lubricant that is applied in the rollforming process. Using bare strut in any application where it may be exposed to corrosion is not recommended.

**PG**— Pre-Galvanized, also known as Hot-Dip Mill Galvanized or Mill Galvanized, is produced at the steel mills. Coils of carbon steel weighing up to 40 tons are unwound and passed (continuously) through a vessel containing molten zinc. This vessel is commonly referred to as a “Galvanizing Pot” or “Zinc Pot.” The molten zinc alloys itself to the base metal (carbon steel) and is then cooled in a uniform manner and reformed back into a coil. The amount of zinc applied to the base metal used for manufacturing ZI-Strut meets all specifications of ASTM G90, which requires 0.9 oz. minimum per square foot of base metal. The nominal coating weight for G90 is 1.25 oz. per square foot. Prior to rewinding the pre-galvanized coil, a chromate coating (chem treat) and/or a light coating of rolling oil may be applied to prevent oxidation.

**GN**— Green Painted. Plain strut is thoroughly cleaned to remove all residual mill oils and rolling lubricants. The cleaned strut is then pre-treated with a phosphoric coating for additional corrosion resistance and improved paint adherence. From here, a high grade of polyester powder paint is electrostatically applied. The strut is then placed on an overhead conveyor and is cycled through a curing oven for 20 minutes at 400°F (204°C). Upon completion of this process, the paint is chemically bonded to the base steel.\*

Note: Specifications subject to change without notice.

\*Zekelman Industries reserves the right to substitute alternate paint systems that will be of equal or superior quality to the system described above.

## SUBMITTAL INFORMATION

PROJECT: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE: \_\_\_\_\_

ENGINEER: \_\_\_\_\_ SPECIFICATION REFERENCE: \_\_\_\_\_ SYSTEM TYPE: \_\_\_\_\_

LOCATIONS: \_\_\_\_\_ COMMENTS: \_\_\_\_\_

ZI-031924