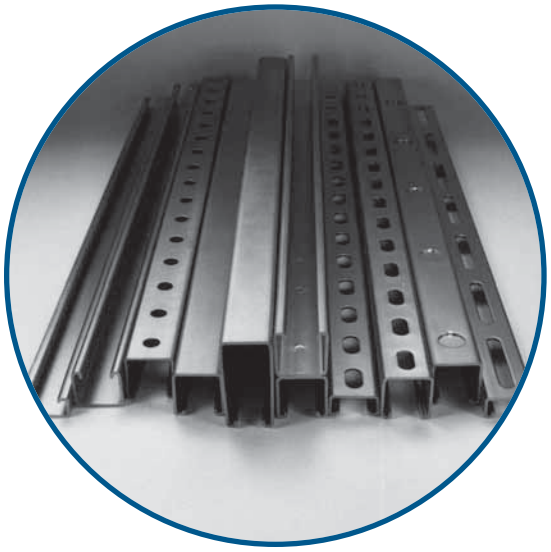
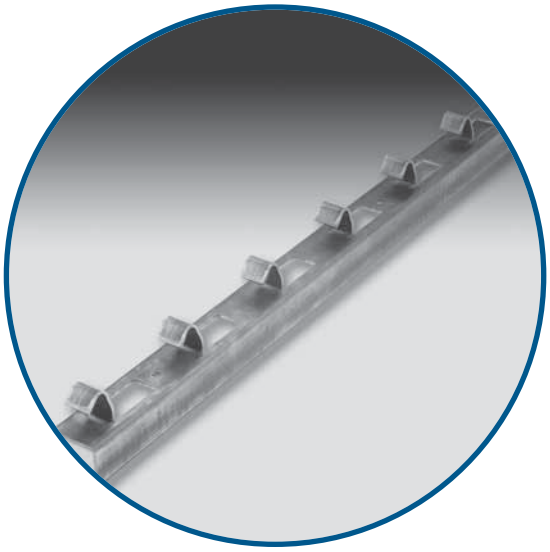
Channels and Concrete Inserts





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

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.

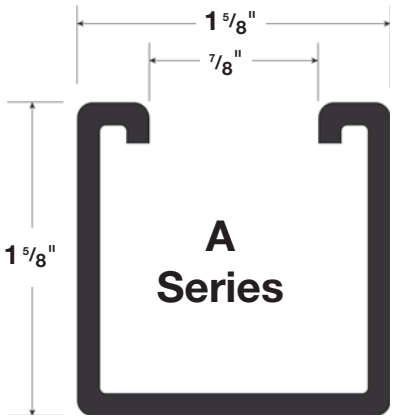
GoldGalv® hardware finish is standard for all Superstrut Concrete insert products. This is a multi-process finish of electro-plated zinc, followed by gold coloured zinc dichromate to give excellent corrosion resistance and a superior paint base.

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

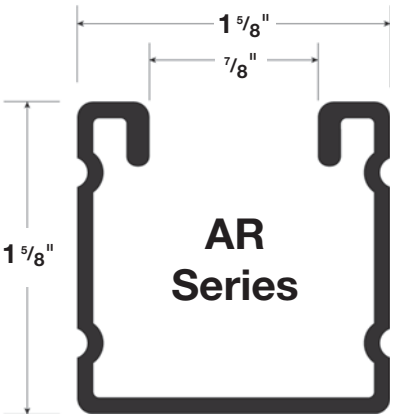
Channels and Concrete Inserts

Channels at Full Scale

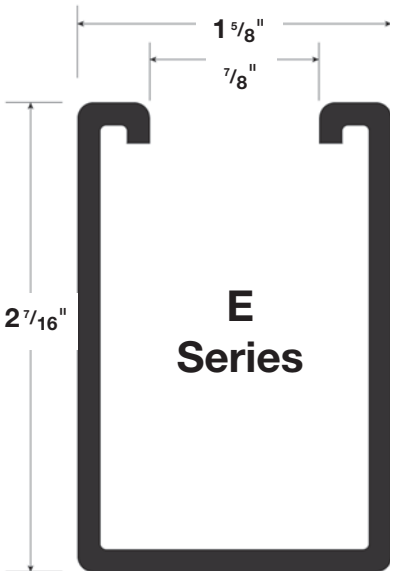
Available in 10 and 20 foot length



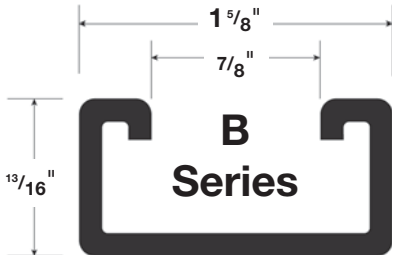
A1200 12 gauge
A1400 14 gauge



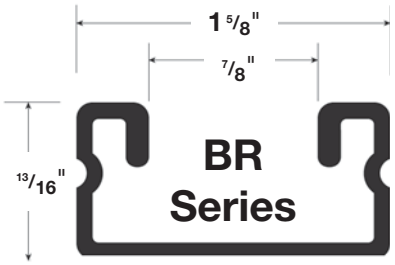
16 gauge only



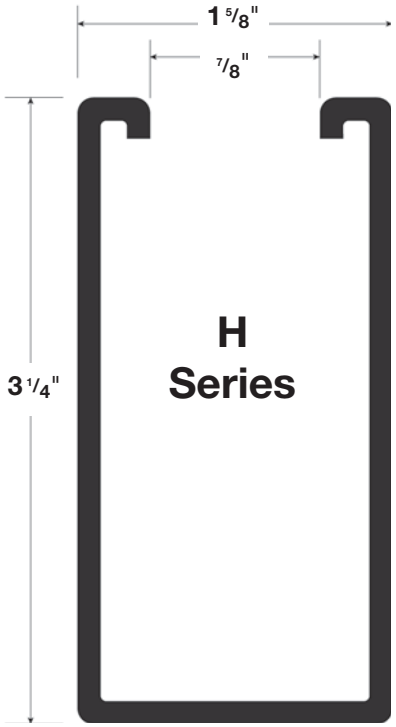
E1200 12 gauge



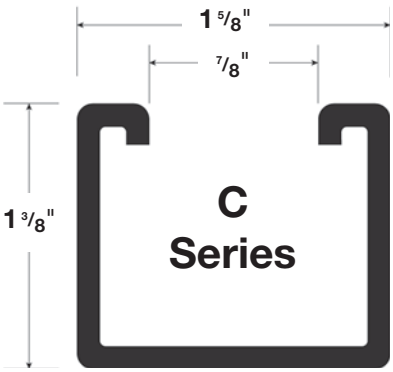
B1200 12 gauge
B1400 14 gauge



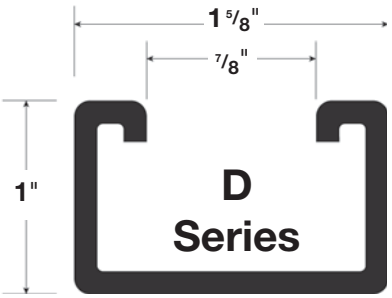
16 gauge only



H1200 12 gauge



C1200 12 gauge



D1200 12 gauge

Channels and Concrete Inserts

Channel Selection Chart

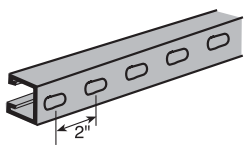
CHANNEL	HOLE CONFIGURATIONS					LENGTH	FINISH ON STEEL						SPECIAL MATERIALS			
Series	HS	S	SW	P	KO	ft.	BC	PG(C)	EG(C)	GoldGalv®	HDG(C)	GR,GY,WH	PV(C)	AL(C)	T316L	SS6(C)
A1200	■	■	■	■	■	10 or 20		■	■	■	■		■	■	■	■
A1400	■	■	■	■	■	10 or 20		■	■	■	■					
AR1600	■	■	■	■	■	10 or 20		■								
B1200	■	■	■	■	■	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	
A120010PG Plain channel, 10 ft., pre-galvanized finish	Suffix		Suffix		Suffix	
B1400P10 Punched channel, 10 ft., GoldGalv® finish	blank	Plain, no holes	BC	Bare	AL	Aluminum
E1200HS20HDG Half slot channel, 20 ft. hot dipped galvanized	HS	Half slot	PGC	Pre-galvanized	SS6 (C)	Stainless Steel Type 316
	S	Slotted	EGC	Electrogalvanized	T316L	Stainless Steel Type 316L
	SW	Slotted wide	Blank	GoldGalv®		
	P	Punched	HDGC	Hot dipped galvanized		
	KO	Knockout	GR,GY,WH	Epoxy paint in green (GR), grey (GY), or white (WH)		
	■	Standard offering	■	A minimum order quantity may apply		

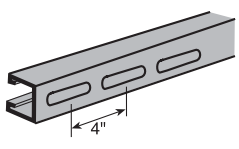
Hole Configuration

Half Slot Channel



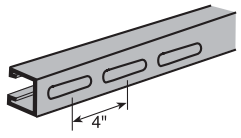
Slots: 9/16 in. X 1-1/8 in.

Slotted Channel



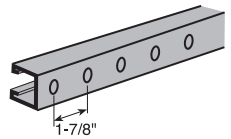
Slots: 7/16 in. X 3 in.

SW "Slotted Wide" Channel



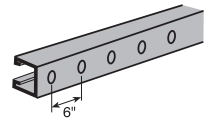
Slots: 9/16 in. X 3 in.

Punched Channel



Holes: 9/16 in.

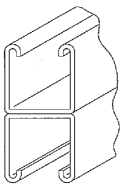
Channel with Knockouts



KO: 1/2 in.

Channels and Concrete Inserts

Welded Combinations



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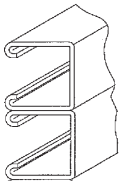
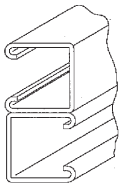


02A



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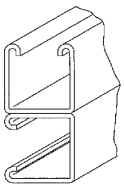
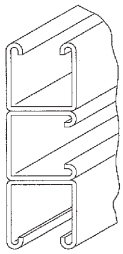


02C



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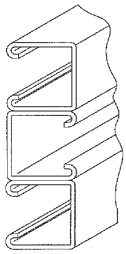
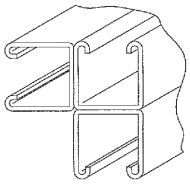
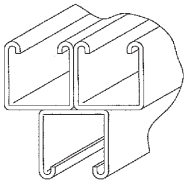


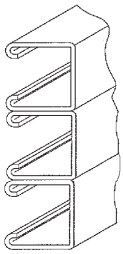
03B



03C



03D



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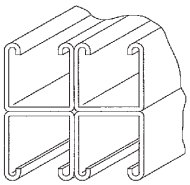


04

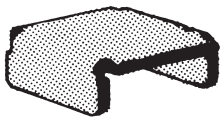
EXAMPLES

Two A1200 channels back to back are ordered as A1202.
Two A1200 channels back to side are ordered as A1202C.

Back to back steel channel is riveted at every 4 inches. Aluminum back to back channel are extruded profiles. All other combinations are spot welded at every 4 inches.

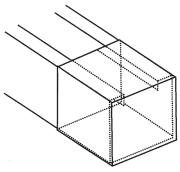
End Caps and Closure Strips

A804 End Cap



Cat. No.	For Channel	Wt./C lb.
A804EG	A1200	10
	A1400 AR1600	10
B804EG	B1400 BR1600	5
C804EG	C1200	8
E804EG	E1200	15
H804	H1200	20

Safety End Cap



1-5/8 in. x 1-5/8 in. White Plastisol.

Cat. No.	For Channel	Wt./C lb.
A804NEOPWH	A1200 AR1600	1.75
	A1400	
B804NEOPWH	B1200 BR1600	5
H804NEOPWH	H1200	2

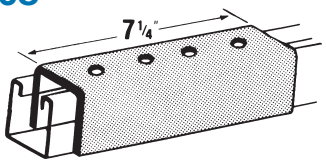
A2431 End Cap

For A1200 Channel

Available in GoldGalv® or Electrogalvanized (EG).

Wt./C 16 lb.

A208



A208HDGC

A208EG

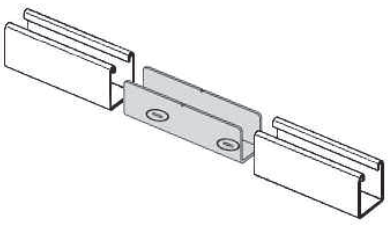
Does not include stud nut or bolts.

A208

A208SS6C

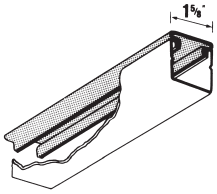
For A and AR Series channel. Wt./C 275 lb.

A213 Inside Joiner



For A1200 Series only.

Available only in GoldGalv® finish.



AB844PGC

Pre-Galvanized Closure Strip

AB844PCGY

Plastic Closure Strip

Colour: Grey

AB844PC

Plastic Closure Strip

Colour: Gold

For all channel. Standard lenghts 10 ft.

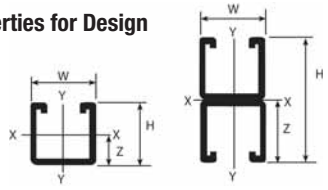
Engineering Data & Specifications

Design Data – Metal Framing Channel

TABLE 1

Elements of Sections

Properties for Design



Single Channels

Double Channels

Nominal Thickness (inches)

12 ga = 0.105

14 ga = 0.075

16 ga = 0.060

LEGEND

I - Moment of inertia
S - Section Modulus
r - Radius of Gyration
Z - Nominal Axis
A - Area

Section Member	WT. lb./ft.	H (in.)	W (in.)	A (in.)²	X-X AXIS I (in.)⁴	X-X AXIS S (in.)³	X-X AXIS r (in.)	X-X AXIS Z (in.)	Y-Y AXIS I (in.)⁴	Y-Y AXIS S (in.)³	Y-Y AXIS r (in.)
Single Channel											
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
H1200	3.05	3.250	1.625	0.897	1.100	0.635	1.107	1.507	0.436	0.536	0.697
A1400	1.40	1.625	1.625	0.401	0.134	0.146	0.577	0.707	0.184	0.226	0.677
B1400	0.97	0.813	1.625	0.280	0.024	0.051	0.295	0.338	0.103	0.127	0.607
Double Channel											
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
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	Pull Out Strenght		Slip Resistance		Torque	
	All Series	lb.	kN	lb.	kN	lb.	kN
1/4 - 20	A1200	600	2.7	300	1.3	6	8
5/16 - 18	B1200	800	3.6	500	2.2	11	15
3/8 - 16	C1200	1000	4.4	800	3.6	19	25
1/2 - 14	D1200	2000	8.9	1500	6.7	50	70
5/8 - 11	E1200	2500	11.1	1500	6.7	100	135
3/4 - 10	H1200	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	B1400	1000	4.4	750	3.3	19	25
1/2 - 14		1400	6.2	1000	4.4	50	70
1/4 - 20	AR1600	600	2.7	300	1.3	6	8
5/16 - 18		800	3.6	400	1.8	11	15
3/8 - 16	BR1600	1000	4.4	750	3.3	19	25
1/2 - 14		1000	4.4	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	Pull Out Strenght		Slip Resistance		Torque	
	All Series	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

Finishes and Materials

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 ASTMA-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.

Bare (suffix BC) is available upon request.