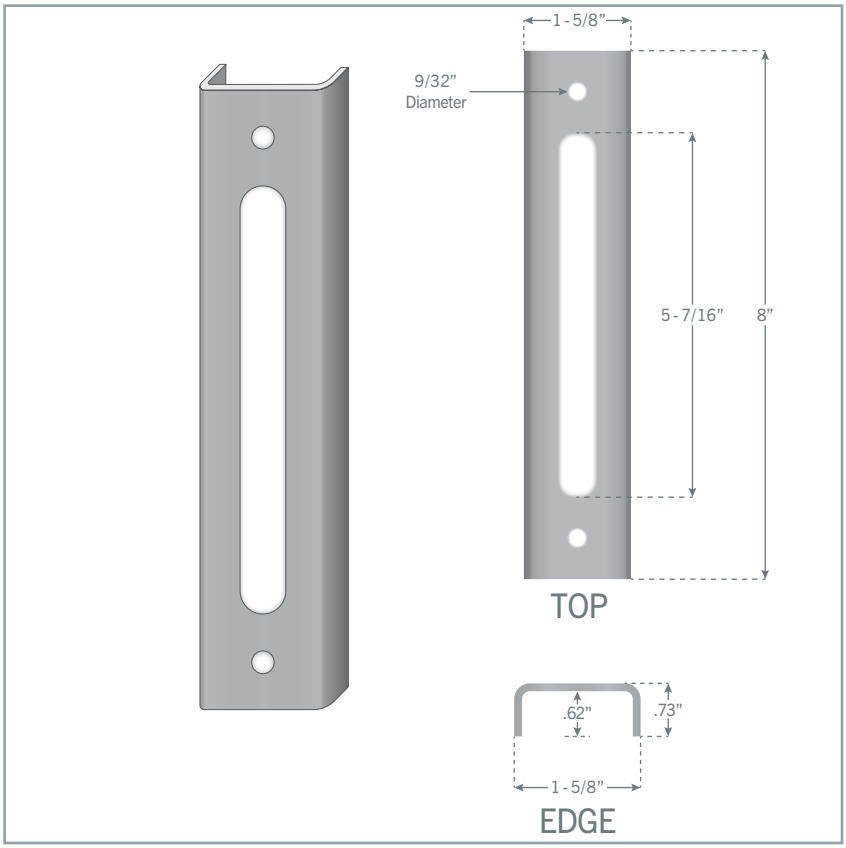
STEEL SUPPLY

OFFICE
35 Pine Drive
Cold Spring Harbor, NY 11724

FACTORY
109 Kean Street
West Babylon, NY 11704

MASONRY ANCHORS
300 SLOTTED CHANNEL



DESCRIPTION

The #300 Slotted Channel is used to anchor masonry to structural steel members. When welded, they provide a 5 - 7/16" long 9/16" wide slot. This slot accepts Type A, B, or C standard inserts, though any custom designed insert can be made to order.

The #300 Slotted Channel and Masonry Insert create a secure connection while still allowing movement between the masonry and steel.

9/32" diameter holes allowing for connection with powder actuated fasteners (2 per pc.)

Overall Dimensions:
Length 8"
Width 1 - 5/8"

Slot Dimensions:
Length 5 - 7/16"
Width 9/16"
(Allows for 5" Travel)

Material Options:
- Mill Galvanized
- Carbon Steel, Plain Finish
- Carbon Steel, Hot Dip Galvanized
- Stainless Steel

100 pieces per carton

Compatible Inserts:
- Type A, Type B, and Type C

TECHNICAL CERTIFICATION

MATERIAL

#300 Mill Galvanized (ASTM A1008)
#300 Plain Finish (ASTM A1008M)

Yield:
20,000 p.s.i. min. to 40,000 p.s.i. max.

#310-SS Stainless Steel Type 304 (ASTM A480 / ASTM A666)

Yield:
30,000 p.s.i. min.

Tensile Strength:
75,000 p.s.i.

GALVANIZING

#310-MG Mill Galvanized: ASTM A653/A653M (0.6 oz/ft^2)
#310-HDG Hot Dip Galvanized: ASTM A153 (1.5 oz/ft^2)

MORE INFORMATION

www.thesteelsupplyco.com
Phone: 631-385-7273 Fax: 631-385-7274 • info@thesteelsupplyco.com

300 Slotted Channel

Pull Testing

Tensile and yield strength test results are shown on the previous page. Beyond this pull tests were performed to determine an estimate of the load that would produce failure. This test simulates some of the working conditions of the Slotted Channel Masonry Anchor.

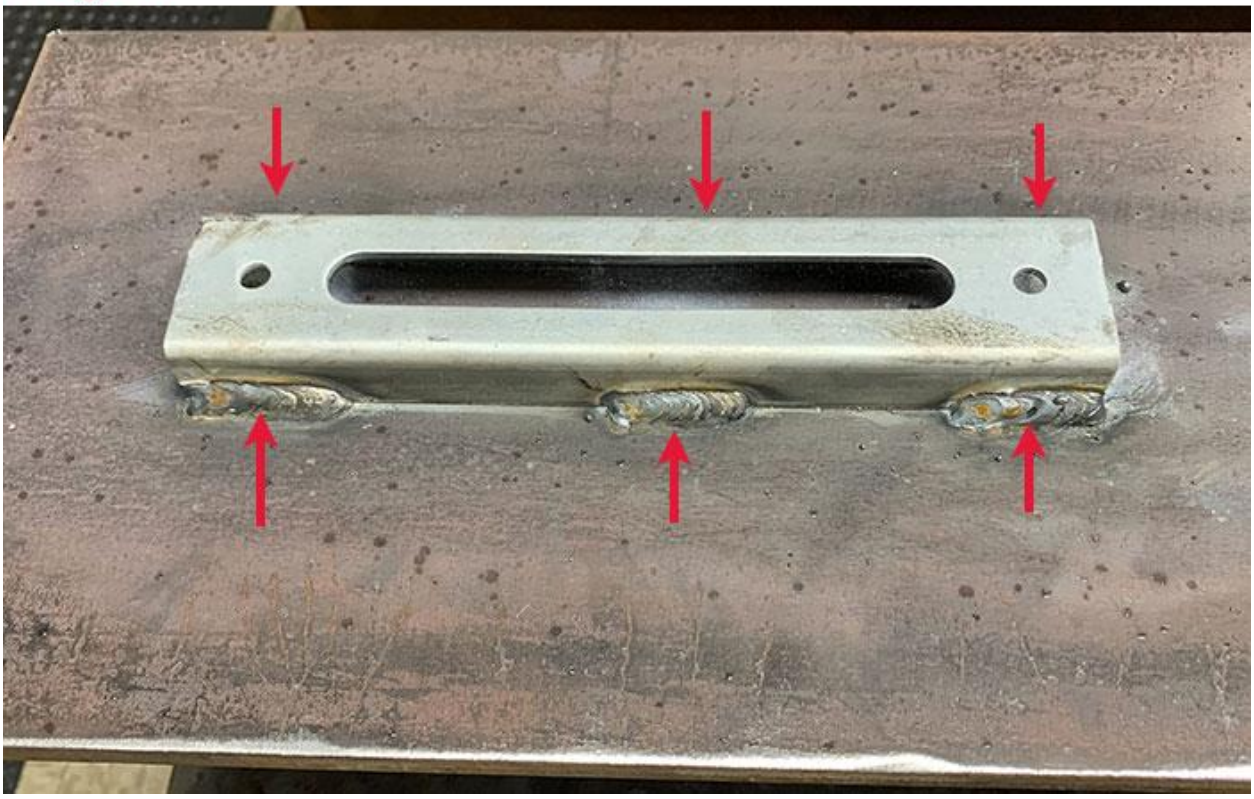
#300 Slotted Channel works in conjunction with an insert to secure masonry to a steel structure. Insert types can be found on our website;

https://www.thesteelsupplyco.com/slotted-channel

The standard Slotted Channel should be connected to the I-Beam with 6 welds as shown in Fig. 1.

The fabricator can elect to employ 4 welds, fig.2. The Slotted Channel will remain secure to the I-Beam however under enough pressure the center could begin to flex and contribute to failure of the insert. Fig. 3.

Fig. 1



Note: In all cases instructions for welding shown on the shop drawings should be followed.

Fig. 2

Fig. 3

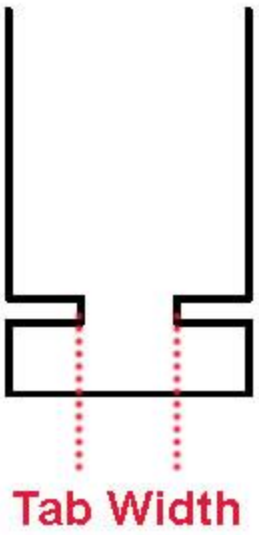
The inserts used in this test were actual stock, Type B. They were clamped from above and located in the center of the slot, where the Slotted Channel would be the most vulnerable. Fig. 4.

Shown in figure 4 is insert Type B # 351-10. It is 12 gauge steel x 1-1/4" wide. More significant than the overall width is the tab width. Per the illustration in Fig. 4a, sample tab width ranged from 0.460" to 0.500" wide.

Pressure was applied gradually at a 90° angle as shown and increased until failure occurred.

Fig. 4

Fig. 4a



The result was that as the pressure increased the area of the insert at the tab began to elongate.

Fig. 5, left image, shows the insert pulled up so it is in full contact with the underside of the slotted channel. The image on the right displays the gap caused by elongation as the upward pressure increases. What cannot be seen in figure 5 is that the tab below the slot begins to deform and become wedge shaped. Figure 6 shows the collapsed tabs.

Fig. 5

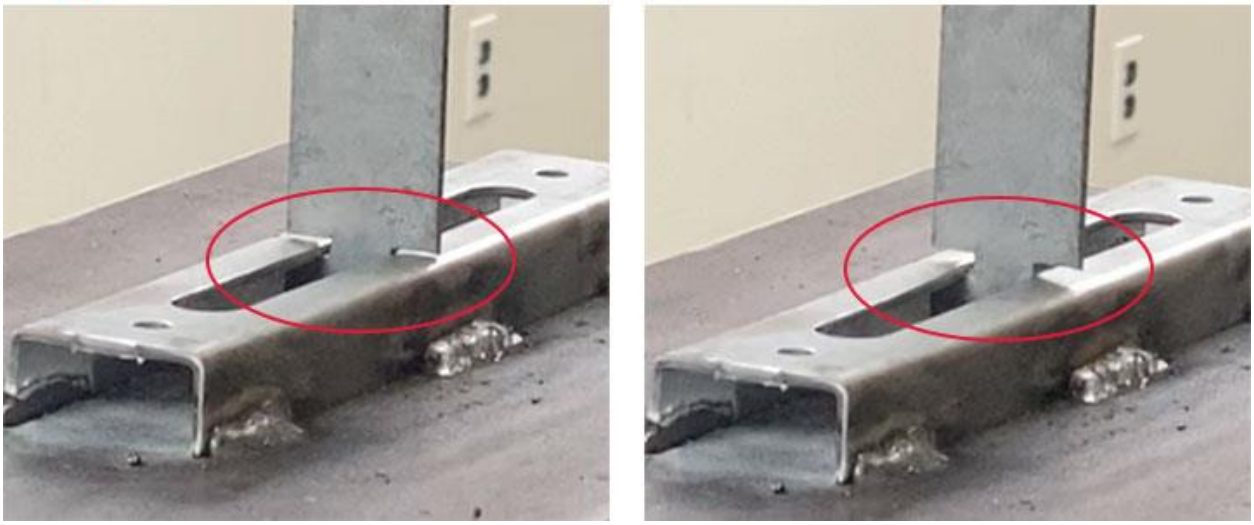


Fig. 6

Returning to the pull test, figure 7 shows the tabs, that began perpendicular to the underside of the slotted channel, are now flexing inward and forming a wedge shape. This lowers the surface area providing resistance and the insert begins to compromise the edges of the slot. Eventually the tabs twist or bend enough that that insert can pass through the slot completely.

The 6 weld Slotted Channel test, represented in the graph, Figure 8, shows the force that was applied and the point at which the Insert Tabs collapsed and resistance dropped off.

The 4 weld Slotted Channel test is shown in Figure 9.

Note the peak load;

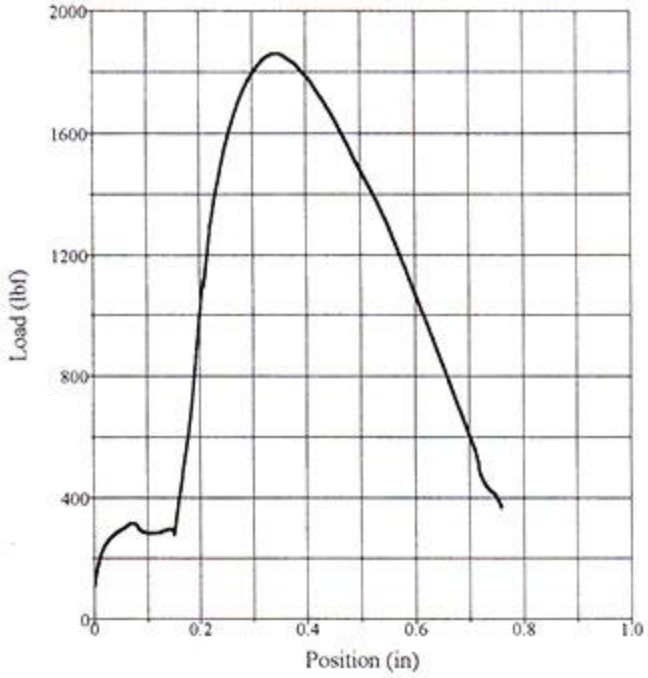
#300 Slotted Channel 6 Weld	**Peak Load**	**1,860 lbf**
#300 Slotted Channel 4 Weld	**Peak Load**	**1,715 lbf**

Both samples were from the same heat and manufacturing batch, so it is assumed there is consistency between the two. During the 4 Weld Test, only very minimal separation is visible from the sub straight. There are enough other variables, such as tab width and insert position that it cannot be determined what factors caused the 4 Weld to fail with 8% less tension. However the use of a mid-point weld should eliminate potential deflection.

This is presented for information purposes only. The Fabricator should follow all shop drawing and engineering instructions.

Fig. 7

Fig. 8 6 Weld

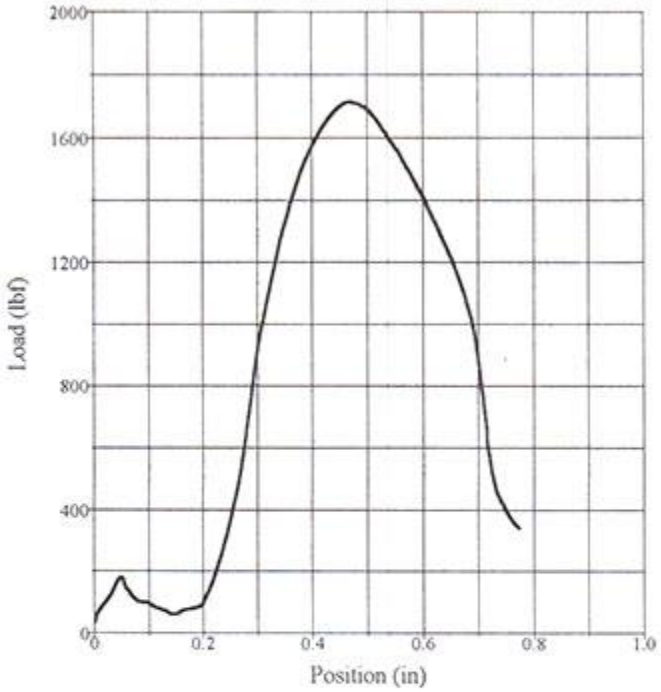


Test Results	
Width:	**0.5000** in
Thickness:	**0.1000** in
Area:	**0.0500** in²
Tensile Strength:	**37200** psi
Peak Load:	**1860** lbf
Total Elongation:	**0.0000** %
Pretest Punch Length:	**2** in
Posttest Punch Length:	**2** in

Test Summary

Counter:	**60552**
Elapsed Time:	**00:03:02**
Job Number:	**A50471**
Specimen Identification:	**#300 Slotted Channel 6 Weld**
Procedure Name:	**Tensile Strength Only_Flat**
Start Date:	**03/17/2020**
Start Time:	**10:45:35 AM**
End Date:	**03/17/2020**
End Time:	**10:48:37 AM**
Workstation:	**Long Island**
Tested By:	**NICHOLAS**

Fig. 9 4 Welds



Test Results

Width:	**0.5000** in
Thickness:	**0.1000** in
Area:	**0.0500** in²
Tensile Strength:	**34300** psi
Peak Load:	**1715** lbf
Total Elongation:	**0.0000** %
Pretest Punch Length:	**2** in
Posttest Punch Length:	**2** in

Test Summary

Counter:	**60551**
Elapsed Time:	**00:03:05**
Job Number:	**A50471**
Specimen Identification:	**#300 Slotted Channel 4 Weld**
Procedure Name:	**Tensile Strength Only_Flat**
Start Date:	**03/17/2020**
Start Time:	**10:23:31 AM**
End Date:	**03/17/2020**
End Time:	**10:26:36 AM**
Workstation:	**Long Island**
Tested By:	**NICHOLAS**

Note the load was applied direct at 90° and this remained consistent with no other movement taking place. In true field conditions there would most likely be force exerted vertically or horizontally that would also affect these results.

Additional information and Video Clips of these tests can be found on our website;

https://www.thesteelsupplyco.com/slotted-channel