

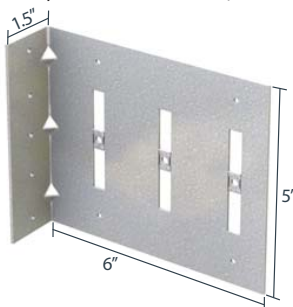
MasterClip™ VLB

Bypass Slab

Material Composition

ASTM A1003/A1003M Structural Grade 50 (340) Type H, ST50H (ST340H): 50ksi (340MPa) minimum yield strength, 65ksi (450MPa) minimum tensile strength, 68mil minimum thickness (14 gauge, 0.0713" design thickness) with ASTM A653/A653M G90 (Z275) hot dipped galvanized coating.

The attachment of MasterClip™ to the primary structure may be made with a PAF, screw/bolt anchors or weld and is dependent upon the base material (steel or concrete) and the design configuration.



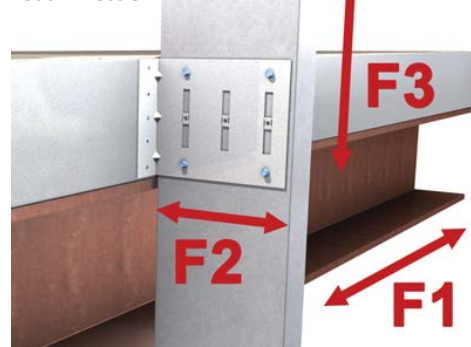
US Patents #8,181,419, #8,683,770 & Pending

MasterClip VLB Allowable Loads

MasterClip™ VLB, Recommended Allowable Load (lbs), For VERTICAL DEFLECTION: F1 & F2

| Stud | | F1 Load Direction | F2 Load Direction | |
|-----------------------------|----------------------|------------------------------------|-----------------------------|-----------------------------|
| Thickness Mils (ga) | Yield Strength (ksi) | w/2-3 #12 Screws Patterns 1 & 2 | w/2 #12 Screws Pattern 1 | w/3 #12 Screws Pattern 2 |
| 33 (20) | 33 | 95 | 377 | 565 |
| 33 (20) | 50 | 138 | 544 | 817 |
| 43 (18) | 33 | 124 | 561 | 841 |
| 43 (18) | 50 | 179 | 810 | 1,215 |
| 54 (16) | 33 | 156 | 789 | 1,183 |
| 54 (16) | 50 | 225 | 1,139 | 1,567 |
| 68 (14) | 50 | 227 | 1,567 | 1,567 |
| 97 (12) | 50 | 227 | 1,567 | 1,567 |
| Maximum Allowable Clip Load | | 227 | 1,567 | |

Load Direction

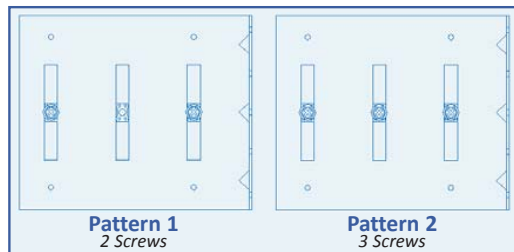


MasterClip™ VLB, Recommended Allowable Load (lbs), For RIGID CONNECTION: F1, F2 & F3

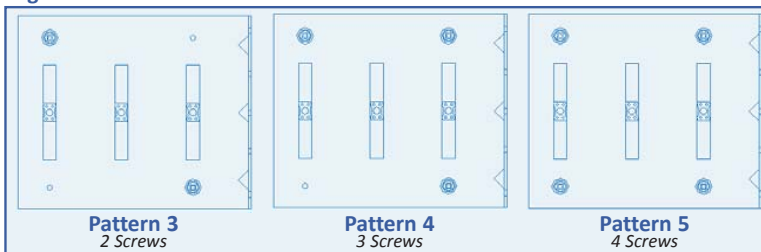
| Stud | | F1 Load Direction | F2 Load Direction | | | F3 Load Direction | | |
|-----------------------------|----------------------|------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Thickness Mils (ga) | Yield Strength (ksi) | w/3-4 #12 Screws Patterns 4 & 5 | w/2 #12 Screws Pattern 3 | w/3 #12 Screws Pattern 4 | w/4 #12 Screws Pattern 5 | w/2 #12 Screws Pattern 3 | w/3 #12 Screws Pattern 4 | w/4 #12 Screws Pattern 5 |
| 33 (20) | 33 | 191 | 376 | 565 | 752 | 251 | 377 | 503 |
| 33 (20) | 50 | 275 | 544 | 817 | 1,089 | 362 | 544 | 727 |
| 43 (18) | 33 | 248 | 560 | 841 | 1,120 | 373 | 561 | 749 |
| 43 (18) | 50 | 359 | 810 | 1,215 | 1,620 | 539 | 810 | 1,082 |
| 54 (16) | 33 | 312 | 788 | 1,183 | 1,576 | 524 | 789 | 1,053 |
| 54 (16) | 50 | 450 | 1,138 | 1,709 | 1,954 | 757 | 1,139 | 1,521 |
| 68 (14) | 50 | 536 | 1,610 | 1,954 | 1,954 | 1,071 | 1,610 | 1,792 |
| 97 (12) | 50 | 536 | 1,698 | 1,954 | 1,954 | 1,129 | 1,698 | 1,792 |
| Maximum Allowable Clip Load | | 536 | 1,954 | | | 1,792 | | |

****Important notes for MasterClip VLB Allowable Load tables continued on next page.**

Vertical Deflection Screw Patterns



Rigid Connection Screw Patterns



Notes:

- Allowable load tables incorporate eccentric loading of fasteners. Values with welded connection may increase.
- Fasten within $\frac{3}{4}$ " from the angle heel (centerline of the $1\frac{1}{2}$ " leg) to minimize eccentric load transfer.
- Fasteners attaching clip to structure should be installed symmetrically around the center line of the clip. The allowable load of the clip may be reduced if fasteners are not installed symmetrically.
- Guide holes in the $1\frac{1}{2}$ " leg measure 0.141" in diameter.
- Total vertical deflection of up to 2" (1" up and 1" down).
- Allowable loads have not been increased for wind, seismic, or other factors.
- MasterClip VLB resists horizontal and vertical loads when used as a rigid connector.
- Loads listed reflect force in a single direction. When multiple loads react on the connection, it is the responsibility of the designer to check the interaction of forces.
- Torsional effects are considered on screw group for F3 allowable loads. It is assumed that half of the torsional moment is taken by the connection to the structure and half is taken by the connection to the stud.
- Design loads consider loads on the clip and #12 screw fasteners to the stud web.
- (3) #12 screws are provided with each connector to be used for either vertical deflection connector or rigid connector step bushing. Load requirements don't always justify use of all screws provided.
- Three slots are standard in 6" and higher web depths to accommodate construction tolerances. Use of a 3rd screw and bushing is dependent upon load configuration.

Nomenclature

MasterClip VLB is currently available in one size for use with 6" stud depths and is designated *MasterClip™ VLB600*.

Example: 6" stud.

Designate: *MasterClip™ VLB600*

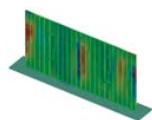
Example Details



MasterClip™ VLB used for Vertical Deflection



MasterClip™ VLB used as Rigid Connection



MasterClip VLB Series
Blast and Seismic Design data



The Steel Network, Inc.