

MasterClip® VLB

Bypass Slab

The Steel Network, Inc.

www.steelnetwork.com

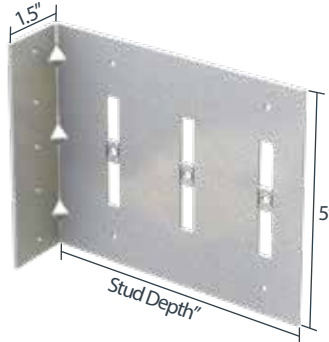
1-888-474-4876



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 VLB to the primary structure may be made with PAFs, screw/bolt anchors or weld and is dependent up the base material (steel or concrete) and the design configuration.



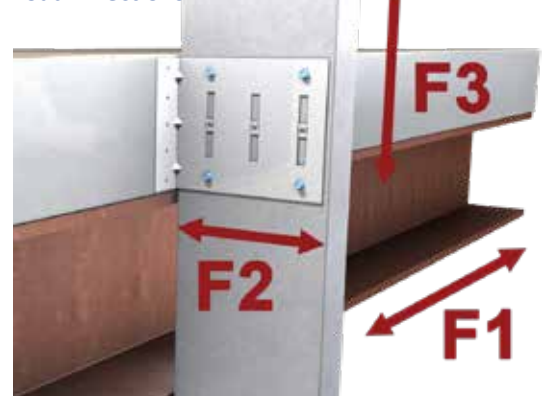
US Patents #8,181,419, #8,683,770 & #10,132,341

MasterClip VLB Allowable Loads

Rigid Connection: F1, F2, & F3 Load Directions													
Screw Patterns with #12 Screws	F1 - Load Direction						F2 - Load Direction			F3 - Load Direction			
	VLB600			VLB800			VLB600 / VLB800			VLB600		VLB800	
	2 Screws	3 Screws	4 Screws	2 Screws	3 Screws	4 Screws	2 Screws	3 Screws	4 Screws	2 Screws	3 Screws	4 Screws	3 Screws 4 Screws
33mil (20ga), 33ksi stud	95	190		95	182		376	444	752	250	363	502	310 440
33mil (20ga), 50ksi stud	138	276		138	182		544	642	1,088	362	525	726	449 636
43mil (18ga), 33ksi stud	124	248		124	182		560	661	1,120	372	540	748	462 655
43mil (18ga), 50ksi stud	179	358		179	182		810	956	1,620	539	782	1,081	668 948
54mil (16ga), 33ksi stud	156	312		156	182		788	930	1,576	524	760	1,052	650 922
54mil (16ga), 50ksi stud	225	450		182	182		1,138	1,343	1,811	757	1,098	1,519	939 1,269
68mil (14ga), 50ksi stud	284	536		182	182		1,434	1,692	1,811	954	1,384	1,792	1,183 1,269
97mil (12ga), 50ksi stud	405	536		182	182		1,434	1,692	1,811	954	1,384	1,792	1,183 1,269
Max Allowable Clip Load	536			182			1,811			1,792		1,269	

Vertical Deflection: F1 & F2 Load Directions						
Screw Patterns with #12 Screws	F1 - Load Direction				F2 - Load Direction	
	VLB600		VLB800		VLB600 & VLB800	
	2 Screws	3 Screws	2 Screws	3 Screws	2 Screws	3 Screws
33mil (20ga), 33ksi stud	95		95		376	564
33mil (20ga), 50ksi stud	138		107		544	816
43mil (18ga), 33ksi stud	124		107		560	840
43mil (18ga), 50ksi stud	179		107		810	1,215
54mil (16ga), 33ksi stud	156		107		788	1,182
54mil (16ga), 50ksi stud	225		107		1,138	1,567
68mil (14ga), 50ksi stud	259		107		1,434	1,567
97mil (12ga), 50ksi stud	259		107		1,434	1,567
Max Allowable Clip Load	259		107		1,567	

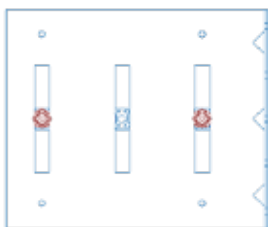
Load Directions



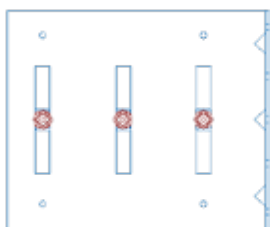
****Important notes for MasterClip VLB Allowable Load tables continued on next page.**

Vertical Deflection Screw Patterns

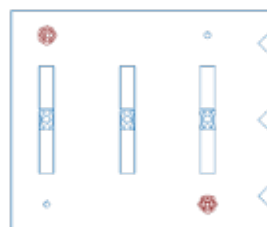
Rigid Connection Screw Patterns



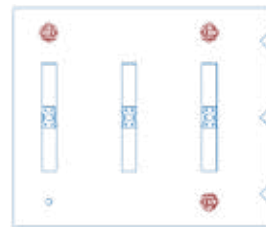
Pattern 1
2 Screws



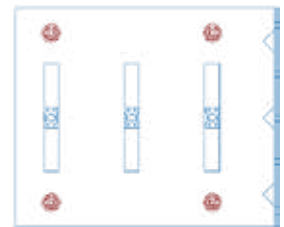
Pattern 2
3 Screws



Pattern 3
2 Screws



Pattern 4
3 Screws



Pattern 5
4 Screws

Notes:

1. MasterClip VLB resists in plane of wall (F1), horizontal (F2), and vertical (F3) loads when used as a rigid connector.
2. MasterClip VLB resists in plane of wall (F1) and horizontal (F2) loads when used as a deflection connector.
3. Allowable loads have not been increased for wind, seismic, or other factors.
4. Design loads consider loads on the clip and #12 screw fasteners to the stud web.
5. Three #12 screws are provided with each connector (based on number of integrated breakaway step bushings). Load requirements don't always require the use of all screws provided.
6. 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 requirements.
7. Total vertical deflection up to 2" (1" up and 1" down).
8. Guide holes in the 1-1/2" leg measure 0.141" in diameter.
9. Fasten within 3/4" of the angle heel (centerline of the 1-1/2" leg) to minimize eccentric load transfer.
10. Fasteners attaching clips 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.
11. Allowable load tables incorporate eccentric loading of fasteners. Values with a welded connection may increase.
12. Torsional effects are considered on the 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 screw connection to the stud.
13. 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.
14. For LRFD strengths contact TSN technical services.

Nomenclature

MasterClip VLB is designated by type (VLB), followed by stud depth in inches multiplied by 100.

Example: 6" stud.

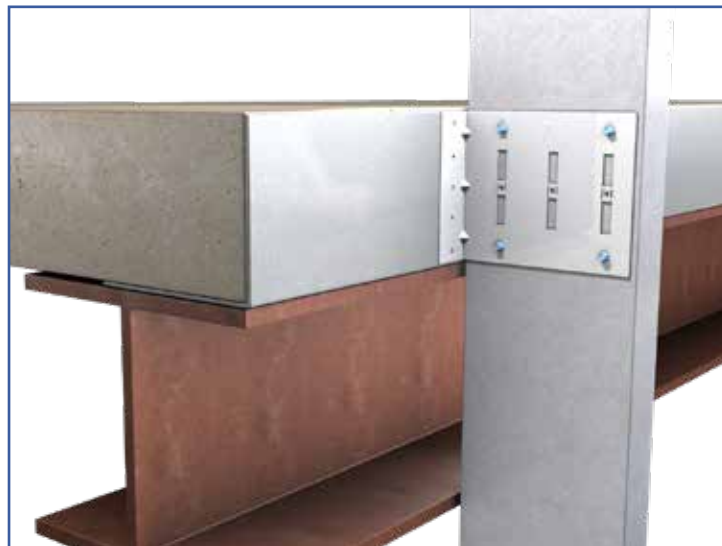
Designate: MasterClip® VLB600

Example Details

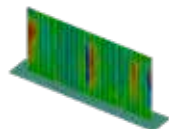
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MasterClip® VLB used for Vertical Deflection



MasterClip® VLB used as a Rigid Connection



MasterClip VLB Series
Blast and Seismic Design Data
www.steelnetwork.com

**** For more information or to review a copy of this report, please visit our website at <http://www.steelnetwork.com/light-steel-framing-design-resources>**