

PRODUCT APPLICATION

The StiffClip® CL series' unique design allows for the connection of steel studs to the building's structure by incorporating stiffened legs of a 90° angle to increase bending strength. StiffClip CL resists vertical, horizontal, and torsional loads. The allowable design load table (p. 50) is based on the use of StiffClip as it is attached to various steel stud wall material thicknesses and yield strengths. Allowable loads consider loads on the clip and screw fasteners to the stud web. Pre-drilled holes for attachments to both deck and stud provide installers with increased efficiency. The designed attachment of StiffClip to the primary structure is dependent upon the base material's properties (e.g. steel or concrete) and the design configuration.



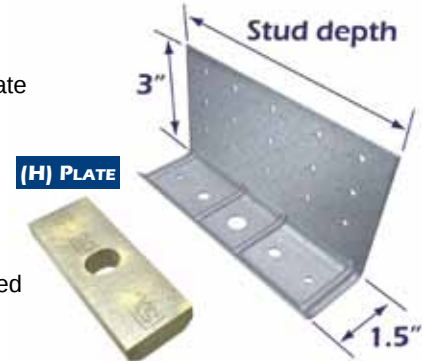
MATERIAL COMPOSITION

Steel: ASTM A653/A653M, Grade 50 (340), 50ksi (340MPa) minimum yield strength, 65ksi (450MPa) minimum tensile strength, G-90 (Z275) hot-dipped galvanized coating. Material thickness = 68mil (14 gauge, 0.0713" design thickness) or 118mil (10 gauge, 0.1242" design thickness). "H" Plate: Z33, Carbon Steel Class C, ASTM- A 27/A 27M-95, GRADE 65-35 Zinc Plate ASTM-B-633 Type 2 Yellow.

Allowable load tables incorporate eccentric loading of fasteners. Values with welded connection may increase.

When determining the allowable load of fasteners securing StiffClip to the base material and clip to stud, consider the following:

- ◆ Fasten within ¾" from the angle heel (centerline of the 1½" leg), using pre-drilled holes if desired
- ◆ Center guide hole is .5" in diameter
- ◆ Middle guide holes are .313" in diameter
- ◆ Outer guide holes are .172" in diameter
- ◆ Guide holes are in place for fastener installation efficiency. Number of fasteners determined by designer.
- ◆ Attachment to stud is made with #12 screws, symmetrically placed



STIFFCLIP CL NOMENCLATURE

The StiffClip CL product group is produced in three thicknesses (68mil, 118mil, and 118mil(H)) and six stud member depths. The StiffClip CL118(H) utilizes a plate in the 1½" leg. To specify StiffClip CL on drawings, multiply stud depth by 100, followed by the appropriate material thickness, based on strength required.

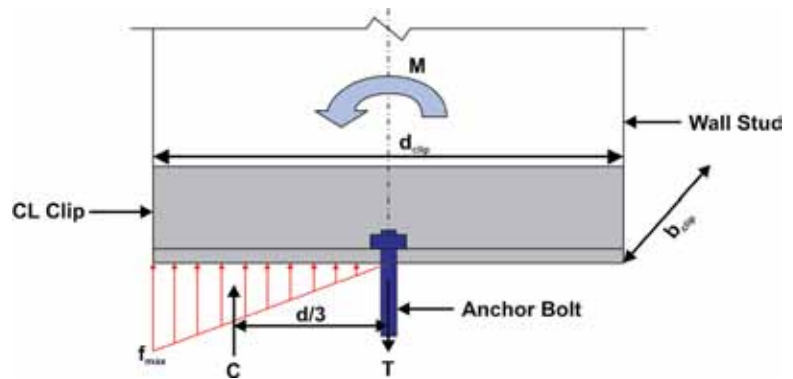
Example: 6" stud, uplift load of 650lbs.

Designate: StiffClip CL600-68.

STIFFCLIP CL ANCHOR BOLT DESIGN

The following equation for tension force in the anchor is derived using the assumed bearing stress distribution shown in the figure to the right. This assumed stress distribution provides a conservative anchor force approximation.

$$T = \frac{M}{\left(\frac{2}{3}\right)(d_{clip}/2)} = \frac{3M}{d_{clip}}$$



STIFFCLIP CL INSTALLATION



Place StiffClip CL at bottom of stud.



Attach clip to deck with approved anchor.



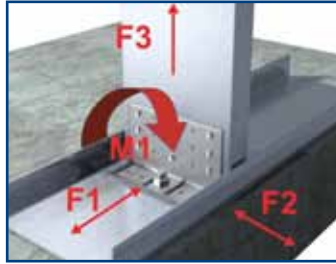
Secure clip to stud with required amount of symmetrically placed #12 screw fasteners.



If the (H) Piece is used, secure to clip with approved anchor to deck.

LOAD DIRECTION

Loads:
M1 = Moment-Carrying
F1 = Lateral
F2 = Horizontal
F3 = Vertical


QUANTITY / ORDER INFORMATION

Designation	Qty/ Box	Lbs/ Box	Pcs/ Skid	Lbs/ Skid
CL362-68	50	20	2250	900
CL362-118	50	36	2250	1620
CL400-68	50	23	5600	2576
CL400-118	50	39	5600	4368
CL600-68	50	30	2250	1350
CL600-118	50	47	2250	2115
CL800-68	50	39	2250	1755
CL800-118	50	64	2250	2880
CL (H) Plate	50	30	5600	3360

ALLOWABLE LOADS

4 Screws,
Pattern 1

9 Screws,
Pattern 2


6 Screws, Pattern 3



10 Screws, Pattern 4



6 Screws, Pattern 5



10 Screws, Pattern 6



Stud Thickness Mils (ga)	Fy (yield) Stud (ksi)	CL362-68 / CL400-68				CL600-68				CL800-68			
		4 Screws, Pattern 1				6 Screws, Pattern 3				6 Screws, Pattern 5			
		F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)
33 (20)	33	0.190	0.535	0.754	1.108	0.285	0.874	1.130	1.713	0.285	0.976	1.130	2.479
33 (20)	50	0.275	0.773	1.089	1.601	0.413	1.263	1.209	2.324	0.413	1.410	1.154	3.203
43 (18)	33	0.248	0.796	1.122	1.649	0.372	1.301	1.209	2.324	0.372	1.452	1.154	3.203
43 (18)	50	0.359	1.150	1.153	1.779	0.538	1.880	1.209	2.324	0.538	2.098	1.154	3.203
54 (16)	33	0.312	1.120	1.153	1.779	0.468	1.829	1.209	2.324	0.468	2.042	1.154	3.203
54 (16)	50	0.450	1.617	1.153	1.779	0.675	2.511	1.209	2.324	0.675	2.901	1.154	3.203
68 (14)	50	0.568	2.025	1.153	1.779	0.852	2.511	1.209	2.324	0.852	2.901	1.154	3.203
97 (12)	50	0.810	2.025	1.153	1.779	1.215	2.511	1.209	2.324	1.215	2.901	1.154	3.203
Stud Thickness Mils (ga)	Fy (yield) Stud (ksi)	CL362-118 / CL400-118				CL600-118				CL800-118			
		4 Screws, Pattern 1				6 Screws, Pattern 3				6 Screws, Pattern 5			
		F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)
33 (20)	33	0.190	0.535	0.754	1.108	0.285	0.874	1.130	1.713	0.285	0.976	1.130	2.479
33 (20)	50	0.275	0.773	1.089	1.601	0.413	1.263	1.633	2.475	0.413	1.410	1.663	3.582
43 (18)	33	0.248	0.796	1.122	1.649	0.372	1.301	1.682	2.549	0.372	1.452	1.682	3.689
43 (18)	50	0.359	1.150	1.620	2.383	0.538	1.880	2.225	3.683	0.538	2.098	2.431	5.330
54 (16)	33	0.312	1.120	1.577	2.319	0.468	1.829	2.225	3.584	0.468	2.042	2.366	5.188
54 (16)	50	0.450	1.617	2.225	2.617	0.675	2.642	2.225	3.855	0.675	2.950	2.666	7.493
68 (14)	50	0.568	2.287	2.225	2.617	0.852	3.736	2.225	3.855	0.852	4.171	2.666	9.198
97 (12)	50	0.810	2.411	2.225	2.617	1.215	3.939	2.225	3.855	1.215	4.398	2.666	9.198
Stud Thickness Mils (ga)	Fy (yield) Stud (ksi)	CL362-118 (H) / CL400-118 (H)				CL600-118 (H)				CL800-118 (H)			
		9 Screws, Pattern 2				10 Screws, Pattern 4				10 Screws, Pattern 6			
		F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)	F1 (kips)	F2 (kips)	F3 (kips)	M1 (in-kips)
33 (20)	33	0.285	0.980	1.696	1.653	0.380	1.481	1.884	3.248	0.380	1.664	1.884	4.710
33 (20)	50	0.413	1.415	2.450	2.388	0.550	2.139	2.722	4.693	0.550	2.404	2.722	6.805
43 (18)	33	0.372	1.458	2.524	2.460	0.496	2.204	2.804	4.834	0.496	2.476	2.804	7.010
43 (18)	50	0.538	2.107	3.646	3.554	0.718	3.184	4.051	6.826	0.718	3.577	4.051	10.128
54 (16)	33	0.468	2.050	3.548	3.458	0.624	3.099	3.943	6.797	0.624	3.481	3.943	9.856
54 (16)	50	0.675	2.961	5.126	4.147	0.900	4.476	5.620	6.826	0.900	5.029	5.695	11.857
68 (14)	50	0.852	4.187	5.620	4.147	1.136	6.329	5.620	6.826	1.136	7.110	7.446	11.857
97 (12)	50	1.215	4.415	5.620	4.147	1.620	6.460	5.620	6.826	1.620	7.497	7.446	11.857

- ◆ 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.
- ◆ All guide holes may not require fasteners. Fastener amount determined by the designer. Screw fasteners should be symmetrically placed in guide holes. Refer to screw pattern diagrams above for placement.
- ◆ Allowable loads have not been increased for wind, seismic, or other factors, and are based on use of #12 screws.
- ◆ Torsional effects are considered on screw groups for F2 allowable loads.
- ◆ M1 allowable moments are based on 0.02 rad. (1.1 degrees) rotation serviceability limit.