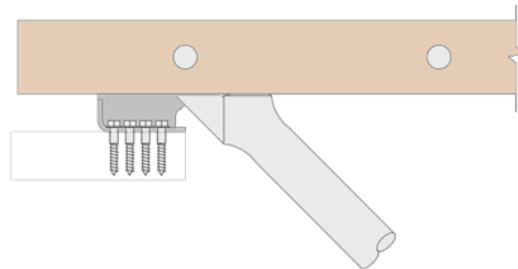# Red-S™ Heavy S-Clip Bearing Clip

The RedBuilt™ Heavy S-Clip for the Red-S™ open-web truss is intended for demanding uplift load applications. This technical bulletin provides clip capacity and related design information.

The Heavy S-Clip is fabricated from steel plate components, individually formed and welded together. The heavy-gauge, formed angle base plate and welded assembly provide greater uplift capacity than the standard, light-gauge S-Clip.

The Heavy S-Clip is to be fastened to wood supports with Simpson Strong-Drive® SDS wood screws, or to cold-formed steel supports with Simpson Self-Drilling E metal screws. Welding is also permitted. See descriptions below for more details.

The standard S-Clip is suitable for most applications with lower uplift and lateral demands. Please refer to the "Open-Web Truss Bearing Clip Capacities" section of the RedBuilt *Open-Web Truss* guide for more information. The design guide may be found on the "Product Resources" page at www.redbuilt.com.
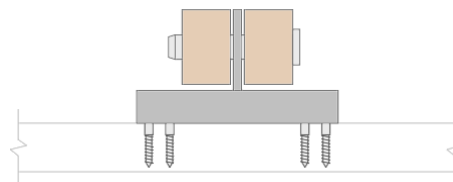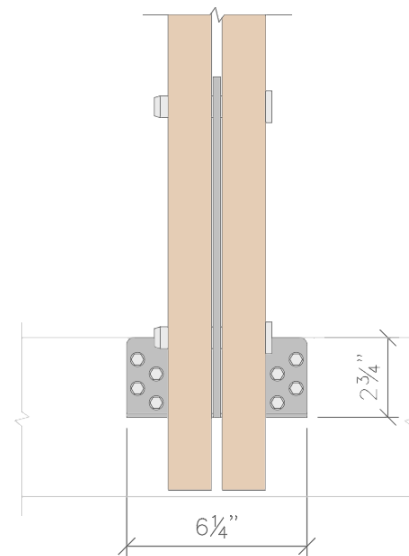
For more design alternatives, please refer to the "Wind or Seismic Connections" section of the *Open-Web Truss* guide. Note that the Heavy S-Clip is not compatible with Detail 66 in the guide.

Maximum Bearing Clip Capacities

Truss Series	Clip Type	Gravity Capacity (lb)	Uplift Capacity (lb)	Lateral Capacity (lb)
Red-S™	Heavy S-Clip	5390	2820	3080

(1) Gravity Capacity refers to the bearing clip. It is the responsibility of the Design Professional of Record to check bearing capacity of support materials. Bearing area for design is 17.2 in^2.

(2) Uplift and Lateral Capacity refers to the bearing clip. Capacity may be further limited by fastener capacity and support type. See next page for connection capacities with various connections.

(3) No increase for duration of load permitted.

(4) Sloped applications greater than 1/4" per foot require a sloped bearing seat to match.

(5) For combinations of gravity and lateral loading, capacity is subject to the unity equation: (Design Gravity / Allowable Gravity) + (Design Lateral / Allowable Lateral) ≤ 1.0. Design loads are to be factored in accordance with building code load combination factors.

(6) For combinations of uplift and lateral loading, capacity is subject to the unity equation: (Design Uplift / Allowable Uplift) + (Design Lateral / Allowable Lateral) ≤ 1.0.

(7) Capacities based on a 2¾" chord cutoff, the distance from the center of the bearing pin to the end of the chord.

This document supersedes all previous versions. If this is more than one year old, contact your dealer or RedBuilt representative.

Design Values for Various Fasteners

On Wood Support

Fasteners	Size (in)	Gravity (lb)	DF/SP		SPF/HF		LSL	
			Uplift 160% (lb)	Lateral 160% (lb)	Uplift 160% (lb)	Lateral 160% (lb)	Uplift 160% (lb)	Lateral 160% (lb)
SDS25200	¼×2	5390	2750	na	1940	na	2750	1720
SDS25300	¼×3	5390	2820	na	2820	na	2820	2820

(1) Uplift capacity is based on full penetration of SDS screw threads in support. Designed as a #14 wood screw in accordance with ESR-2236 Section 4.1.3. For other wood screws, it is the responsibility of the designer to account for actual thread length.

(2) Lateral capacity is based on full penetration of the SDS screw. Designed as a #14 wood screw in accordance with 2018 NDS Section 12.3, not to exceed ESR-2236 Table 2.

(3) Lateral design values account for localized edge tear-out of the fasteners. Cross-grain tension in the support is the responsibility of the Design Professional of Record.

(4) SCL support is permitted in flatwise orientation. Minimum equivalent specific gravity for DF/SP values: 0.50. Minimum equivalent specific gravity for SPF/HF values: 0.42.

(5) LSL support material is 1.3E, minimum, with minimum equivalent specific gravity of 0.50 for connection design. Material must be in the flatwise orientation with thickness to provide full penetration for fasteners. No substitutions allowed.

(6) Effective depth for shear design of support: 3.8". See 2018 NDS Section 3.4.3.3.

(7) No further increase for duration of load permitted.
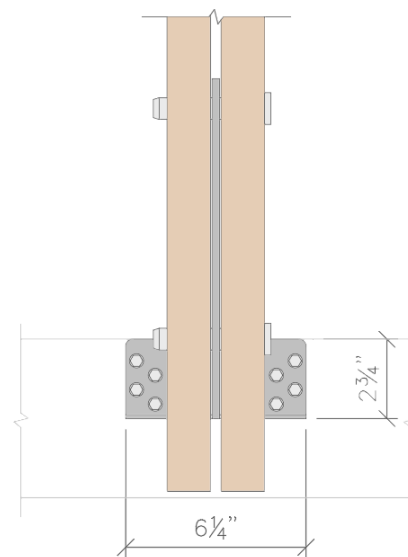
Screw Connection

For additional options to restrain lateral loads on wood supports, refer to Technical Bulletin #105, Red-S™ Heavy S-Clip Lateral Bearing Clip with Extended Base Plate.
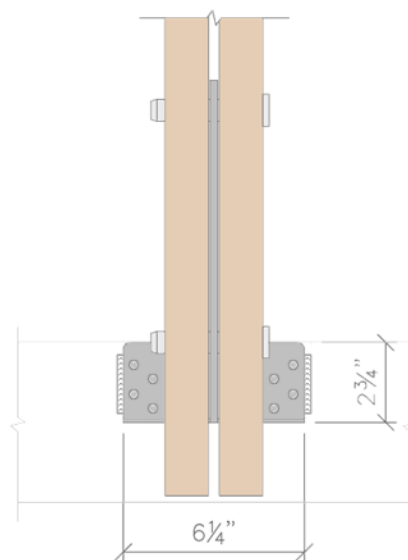
On Steel Support

Fasteners	Size (in)	Gravity (lb)	Uplift 160% (lb)	Lateral 160% (lb)
Weld	³/₁₆×2	5390	2560	3080
E1B1414	#14×1	5390	1930	3080

(1) Support for weld connection is ¼-inch thick steel, A36 minimum. Bearing clip is to be welded to support with ³/₁₆-inch x 2-inch fillet welds each end of base plate.

(2) Support for E1B1414 connection is 54 mil cold-formed steel, minimum yield strength of 50 ksi, minimum tensile strength of 65 ksi.

General Notes

(1) Gravity Capacity refers to the bearing clip. It is the responsibility of the Design Professional of Record to check bearing capacity of support materials. Bearing area for design is 17.2 in².

(2) Sloped applications greater than 1/4" per foot require a sloped bearing seat to match.

(3) Screwed connections require all holes to be filled.

(4) For combinations of gravity and lateral loading, capacity is subject to the unity equation: (Design Gravity / Allowable Gravity) + (Design Lateral / Allowable Lateral) ≤ 1.0. Design loads are to be factored in accordance with building code load combination factors.

(5) For combinations of uplift and lateral loading, capacity is subject to the unity equation: (Design Uplift / Allowable Uplift) + (Design Lateral / Allowable Lateral) ≤ 1.0. Design loads are to be factored in accordance with building code load combination factors.

Weld Connection