

SC Bypass Framing Slide-Clip Connector

Ideal for high-seismic areas, Simpson Strong-Tie® SC connectors are the optimal solution for slide-clip bypass framing. SC clips are often welded to the structure in high-seismic zones, but they also feature anchorage holes so that concrete screws or powder-actuated fasteners can be used to attach the clip to the structure. In addition to anchorage versatility, the SC clips include "No-Equal" stamps at the center of the slots to ensure proper shouldered screw placement. SC connectors are manufactured using heavy-duty 10- and 12-gauge steel to provide exceptional resistance to in-plane seismic load.

Features:

- The clips come in lengths of 3½", 6" and 8" for use with 3½", 6" and 8" studs, respectively
- The maximum stand-off distance is 1" for 3½" studs and 1½" for 6" and 8" studs
- Provides a full ¾" of both upward and downward deflection
- Embossments in the bend line provide increased strength and stiffness in the F₁ and F₂ load directions, but are positioned towards the center of the clip so that 1½" long welds can be applied at the top and bottom of the clip
- Prepunched large-diameter anchor holes accommodate ¼"-diameter concrete screws like the Simpson Strong-Tie Titen HD®
- Prepunched small-diameter anchor holes accommodate powder-actuated fasteners like the 0.157"-diameter Simpson Strong-Tie PDPAT or the #12 self-drilling Simpson Strong-Tie Strong-Drive® XL Large-Head Metal screw
- Precision-manufactured shouldered screws, provided with SC connectors, are designed to prevent overdriving and to ensure the clip functions properly

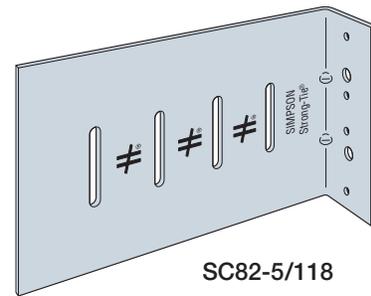
Material: 50 ksi

Finish: Galvanized (G90)

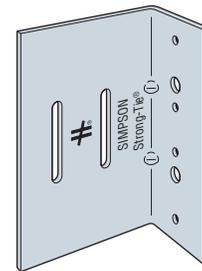
Installation:

- Use the specified type and number of anchors.
- Use the specified number of XLSH78B1414 #14 shouldered screws (included). Install the screws in the slots adjacent to the "No-Equal" stamps.
- Use one shouldered screw per slot (maximum).

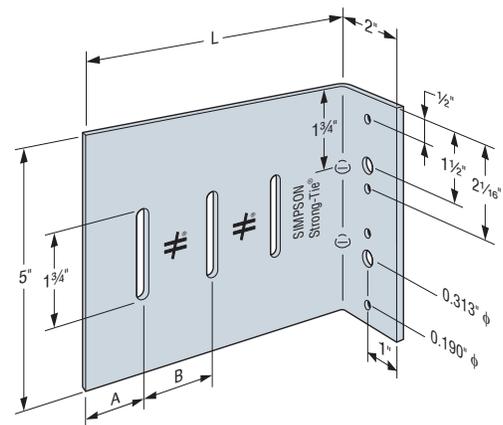
Codes: See p. 11 for Code Reference Key Chart



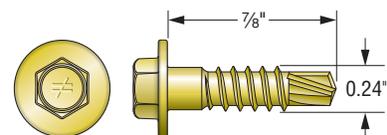
SC82-5/118



SC32-5/97



SC62-5/97
SC62-5/118



XLSH78B1414
#14 Shouldered Screw for Attachment to Stud Framing
(included)

Ordering Information and Dimensions

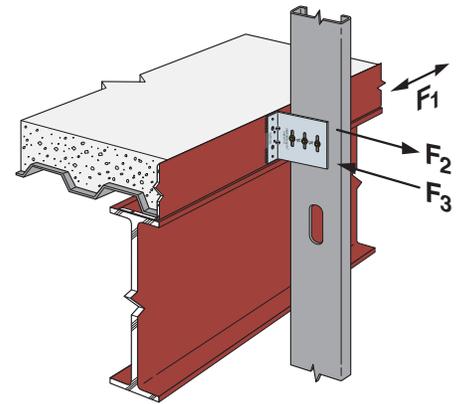
Model No.	Ordering SKU	Thickness mil (ga.)	L (in.)	A (in.)	B (in.)
SC32-5/97	SC32-5/97-KT25	97 (12)	3½	7/8	1¼
SC62-5/97	SC62-5/97-KT25	97 (12)	6	1½	1½
SC62-5/118	SC62-5/118-KT25	118 (10)	6	1½	1½
SC82-5/118	SC82-5/118-KT25	118 (10)	8	1½	1½

1. Each box contains (25) connectors and enough shouldered screws for installation.
2. Replacement #14 shouldered screws for SC connectors are XLSH78B1414-RP83.

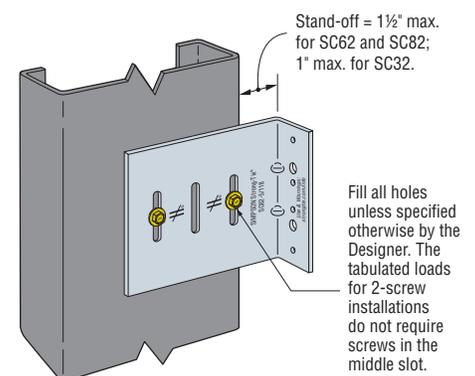
SC Bypass Framing Slide-Clip Connector

SC Allowable Connector Loads

Model No.	Stud Thickness mil (ga.)	Fasteners to Stud		Allowable Load (lb.)				Code Ref.			
		Allowable Pullout per Single #14 Shouldered Screw	No. of #14 Shouldered Screws	F ₁		F ₂	F ₃				
				1" Stand-Off	1½" Stand-Off						
SC32-5/97	33 (20)	100	2	170	—	585	715				
SC62-5/97			2	100	115	585	715				
SC62-5/118			3	115	130	880	1,070				
			2	100	115	585	710				
SC82-5/118			3	115	130	880	1,070				
			2	115	130	585	710				
SC32-5/97			43 (18)	145	2	220	—		765	930	
SC62-5/97					2	135	155		765	930	
SC62-5/118	3	150			175	1,145	1,395				
	2	135			155	765	930				
SC82-5/118	3	150			175	1,145	1,395				
	2	150			175	765	930				
SC82-5/118	4	150			175	1,525	2,125				
SC32-5/97	54 (16)	270			2	300	—	1,145	1,645		
SC62-5/97			2	255	295	1,145	1,645				
SC62-5/118			3	265	305	2,120	2,345				
			2	255	295	1,405	1,685				
SC82-5/118			3	265	305	2,110	2,530				
			2	260	300	1,405	1,685				
SC82-5/118			4	260	300	2,810	3,370				
SC32-5/97			68 (14)	410	2	375	—	1,695	1,645		
SC62-5/97	2	320			370	1,695	1,645				
SC62-5/118	3	335			385	2,540	2,345				
	2	330			380	2,165	2,040				
SC82-5/118	3	345			395	3,250	3,060				
	2	325			375	2,165	2,085				
SC82-5/118	4	325			375	4,330	4,165				
SC32-5/97	97 (12)	725			2	540	—	1,695	1,645		
SC62-5/97			2	555	555	1,695	1,645				
SC62-5/118			3	555	555	2,540	2,345				
			2	555	555	2,165	2,040				
SC82-5/118			3	635	635	3,250	3,060				
			2	465	465	2,165	2,085				
SC82-5/118			4	465	465	4,330	4,165				



Typical SC Installation



SC62 with Two Screws
(SC82 similar)

- For additional important information, see General Information and Notes on p. 22.
- SC Allowable Connector Loads are also limited by the SC Anchorage Load tables on pp. 36 and 37. Use the minimum tabulated values from the connector and anchorage load tables as applicable.
- See illustration for fastener placement when using only two shouldered screws to the stud.
- Tabulated F₁ loads are based on assembly tests with the load through the centerline of the stud. Tested failure modes were due to screw pullout; therefore compare F₁ against F_p calculated per ASCE 7-10 Chapter 13 with a_p = 1.25 and R_p = 1.0.
- F₁ loads are based on maximum stand-off distances of 1" or 1½" as shown. Other loads are applicable to a 1" stand-off for SC32 and 1" or 1½" stand-off for SC62 and SC82.
- At the bend line, the gross allowable plastic moment in the F₁ load direction for 97 mil (12 ga.) and 118 mil (10 ga.) SC connectors are 395 in.-lb. and 675 in.-lb., respectively.
- At a vertical slot, the net allowable plastic moment in the F₁ load direction for 97 mil (12 ga.) and 118 mil (10 ga.) SC connectors are 260 in.-lb. and 440 in.-lb., respectively.

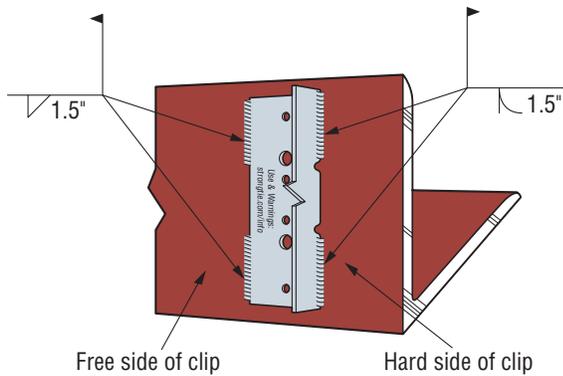
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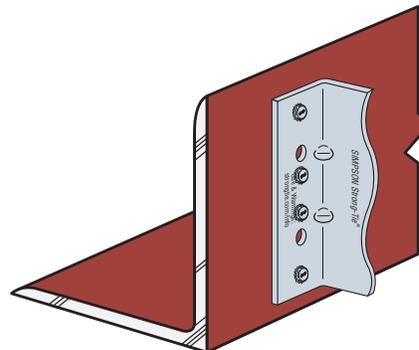
SC Allowable Anchorage Loads to Steel

Anchorage Type	Minimum Base Material	No. of Anchors	Allowable Load (lb.)	
			F ₁	F ₂ and F ₃
#12–24 self-drilling screws Strong-Drive® X and XL Metal screws	A36 steel 3/16" thick	4	—	2,545
#14 self-drilling screws Simpson Strong-Tie E Metal screw E1B1414	A36 steel 3/16" thick	4	—	2,620
Simpson Strong-Tie 0.157" x 3/8" powder-actuated fasteners PDPAT-62KP	A36 steel 3/16" thick	4	—	1,040
Simpson Strong-Tie 0.157" x 3/8" powder-actuated fasteners PDPAT-62KP	A572 grade 50 or A992 steel 3/16" thick	4	—	1,710
Weld E70XX electrodes	A36 steel 3/16" thick	(2) Hard side: 1.5"	2,110	3,710
		(2) Free side: 1.5"		

1. For additional important information, see General Information and Notes on p. 22.
2. Allowable anchorage loads are also limited by the SC Connector Load Table on p. 35. Use the minimum tabulated values from the connector and anchorage load tables as applicable.
3. Allowable loads for #12–24 self-drilling screws and PDPAT powder-actuated fasteners are based on installation in minimum 3/16" thick structural steel with F_y = 36 ksi. PDPAT values are also provided for A572 steel. Values listed above may be used where other thicknesses of steel are encountered or other manufacturers are used, provided that the fastener has equal or better tested values (see p. 22). It is the responsibility of the designer to select the proper length fasteners based on the steel thickness installation.
4. For screw fastener installation into steel backed by concrete, predrilling of both the steel and the concrete is suggested. For predrilling use a maximum 3/16"-diameter drill bit.



Weld Anchorage



4 PAF Anchor Placement
(4 screws similar)

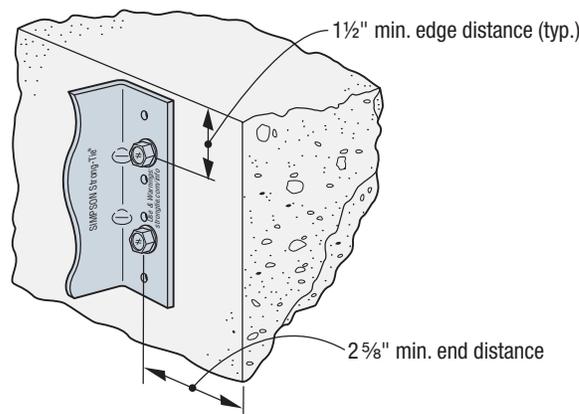
SC Anchor Layout

SC Bypass Framing Slide-Clip Connector

Allowable Titen HD® Anchorage Loads into Concrete with SC Clip

Anchorage Type	Nominal Embedment (in.)	Anchor Quantity and Size	f' _c (psi)	Load Direction	Wind and Seismic in SDC A&B		Seismic in SDC C through F
					Uncracked Concrete	Cracked Concrete	Cracked Concrete ⁶
Simpson Strong-Tie Titen HD screw anchor THD25178H	1½	(2) ¼" x 1 7⁄8"	3,000	F ₁	335	240	280
				F ₂ and F ₃	660	630	550
			4,000	F ₁	390	280	325
				F ₂ and F ₃	760	725	635
Simpson Strong-Tie Titen HD screw anchor TDH25234H	2½	(2) ¼" x 2 3⁄4"	3,000	F ₁	370	265	310
				F ₂ and F ₃	475	695	610
			4,000	F ₁	430	305	360
				F ₂ and F ₃	550	805	705

1. Allowable anchor capacities have been determined using ACI 318-14 Chapter 17 calculations with a minimum concrete compressive strength (f'_c) of 3,000 and 4,000 psi in normal-weight concrete. Tabulated values shall be multiplied by a factor (λ_a) of 0.6 for sand light-weight concrete.
2. Edge distance is assumed to be 1½", and end distance is 2½".
3. Load values are for group anchors based on ACI 318, condition B, load factors from ACI 318-14 Section 5.3, no supplement edge reinforcement, ψ_{c,v} = 1.0 for cracked concrete and periodic special inspection.
4. Allowable Stress Design (ASD) values were determined by multiplying calculated LFRD capacities by a conversion factor, Alpha (α), of 0.70 for seismic load and 0.6 for wind loads. ASD values for other combinations may be determined using alternate conversion factors.
5. Tabulated allowable ASD loads for Wind and Seismic in SDC A&B are based on using wind conversion factors and may be increased by 1.17 for SDC A&B only.
6. Design loads shall include the over-strength factor per ASCE7 Section 12.4.3. For fasteners in exterior wall connection systems, Ω_o = 1.5 per Table 13.5-1.
7. Allowable loads for F₁ are based on the governing loading direction which is toward the end of slab.
8. For anchor subjected to both tension and shear loads, it shall be designed to satisfy following:
 - For N_a / N_{all} ≤ 0.2, the full allowable load in shear is permitted.
 - For V_a / V_{all} ≤ 0.2, the full allowable load in tension is permitted.
 - For all other cases: N_a / N_{all} + V_a / V_{all} ≤ 1.2 where:
 - N_a = Applied ASD tension load
 - N_{all} = Allowable F₂ and F₃ load from the SC Allowable Anchorage Loads for Concrete table
 - V_a = Applied ASD shear load
 - V_{all} = Allowable F₁ load from the SC Allowable Anchorage Loads for Concrete table
9. Tabulated allowable loads are based on anchorage only. The capacity of the connection system shall be the minimum of the allowable anchorage load and the SC Allowable Connector Loads.



Titen HD® Anchorage