

SJC Steel-Joist Connectors



This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

SJC connectors have been specifically designed for various CFS joist, rafter and underside of metal deck applications. The unique clip dimensions enable easy installation on the open side of joists and rafters with up to 3 1/2" flanges and return lips up to 3/4". For metal deck applications, the prepunched 3/8" holes easily accommodate 6", 8", 10" and 12" on-center metal deck flutes.

Features:

- Prepunched holes reduce installation cost by eliminating predrilling
- Intuitive fastener hole positions ensure accurate clip installation in accordance with design, support a wide range of design and application requirements and provide installation flexibility
- Angle lengths accommodate either hard-side or soft-side attachment for joists with return lips up to 3/4"
- 4 1/2" leg length enables soft-side connections for joists with flanges up to 3 1/2"
- Also accommodates kicker-to-metal deck applications

Material: SJC — 68 mil (50 ksi); MSJC — 97 mil (50 ksi)

Finish: Galvanized (G90)

Installation:

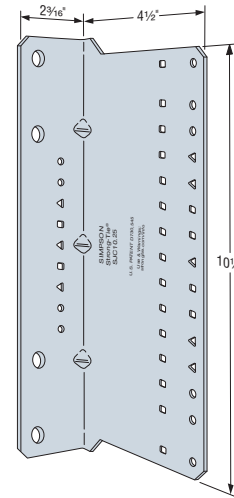
- Use all specified fasteners/anchors

Codes: See p. 13 for Code Reference Key Chart

For detailed product dimensions, refer to p. 99.

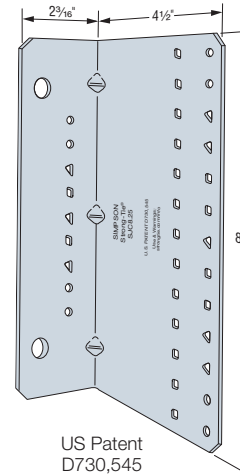
Ordering Information

Model No.	Ordering SKU	Package Quantity
SJC8.25	SJC8.25-R15	Box of 15
MSJC8.25	MSJC8.25-R15	
SJC10.25	SJC10.25-R15	Box of 15
MSJC10.25	MSJC10.25-R15	



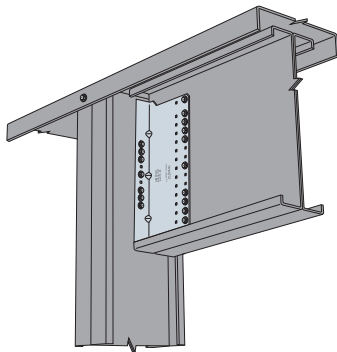
SJC10.25
(MSJC10.25 similar)

Full dimensions shown on p. 99.

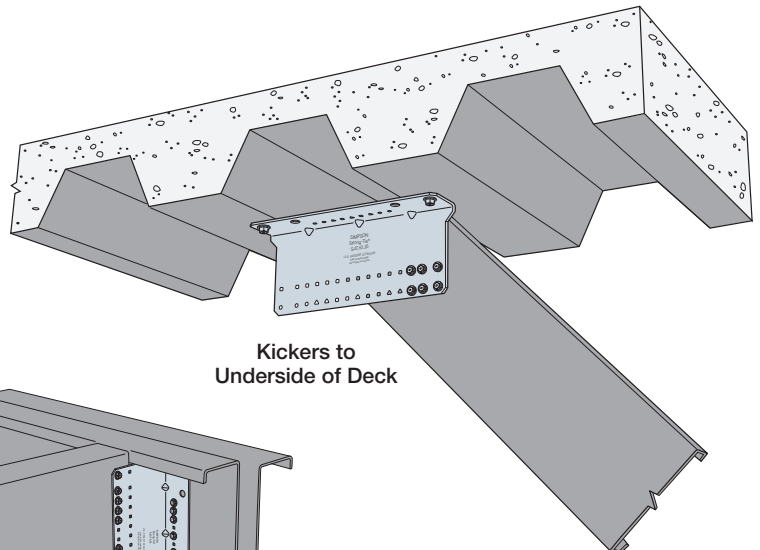


SJC8.25
(MSJC8.25 similar)

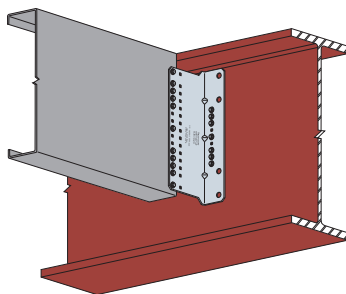
US Patent D730,545



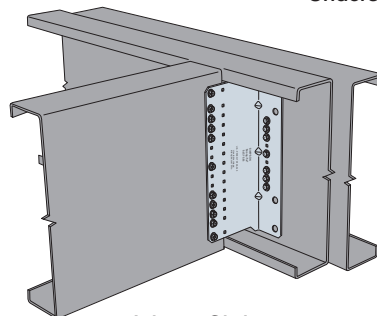
Header to Jamb



Kickers to Underside of Deck



Joists to I-Beam



Joist to Girder

Note: For 6" and 8" joists: SSC connectors are recommended.

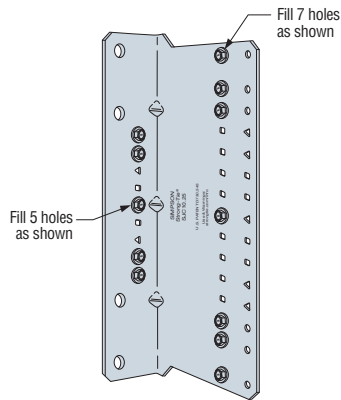
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Rigid Connectors

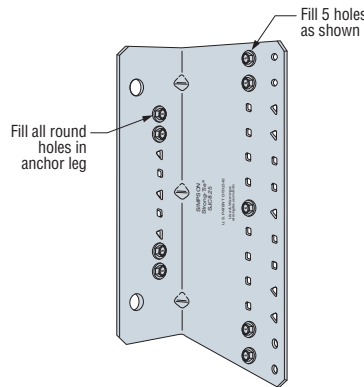
SJC Connectors — CFS to CFS Allowable Loads (lb.)

Model No.	Connector Material Thickness mil (ga.)	Clip Length (in.)	Framing Member Depth ⁴ (in.)	Fasteners ⁵			Allowable F ₄ Load (lb.) ²			Code Ref.
				Pattern ¹	Carried Member	Carrying Member	Minimum Member Thickness		Maximum Connector Load ³	
							54 mil (16 ga.)	68 mil (14 ga.)		
SJC8.25	68 (14)	8¼	10	Min.	(4) #10	(4) #10	980	980	2,930	IBC
				Max.	(9) #10	(7) #10	1,005	1,490		
				Inner	(5) #10	(4) #10	1,345	2,005		
MSJC8.25	97 (12)	8¼	10	Min.	(4) #10	(4) #10	1,005	1,710	2,930	
				Max.	(9) #10	(7) #10	1,135	1,765		
				Inner	(5) #10	(4) #10	1,535	2,220		
SJC10.25	68 (14)	10¼	12	Min.	(6) #10	(4) #10	1,170	1,625	3,935	
				Max.	(11) #10	(7) #10	1,265	1,625		
				Inner	(7) #10	(5) #10	1,620	2,170		
MSJC10.25	97 (12)	10¼	12	Min.	(6) #10	(4) #10	1,200	2,045	3,935	
				Max.	(11) #10	(7) #10	1,265	2,045		
				Inner	(7) #10	(5) #10	1,730	2,635		

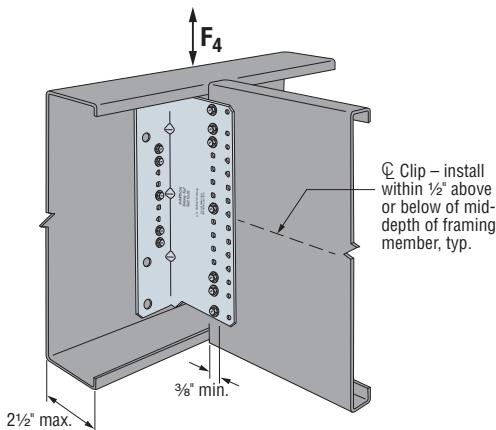
1. Min. fastener quantity and load values — fill all round holes; Max. fastener quantity and load values — fill all round and triangular holes; Inner fastener quantity and load values — see illustrations for fastener placement.
2. Allowable loads are based on bracing of the members located within 12" of the connection.
3. Maximum allowable load for connector that may not be exceeded when designing custom installations. Designer is responsible for member and fastener design.
4. For 6" and 8" joists, SSC connectors are recommended.
5. See the current *Fastening Systems* catalog at strongtie.com for more information on Simpson Strong-Tie fasteners.



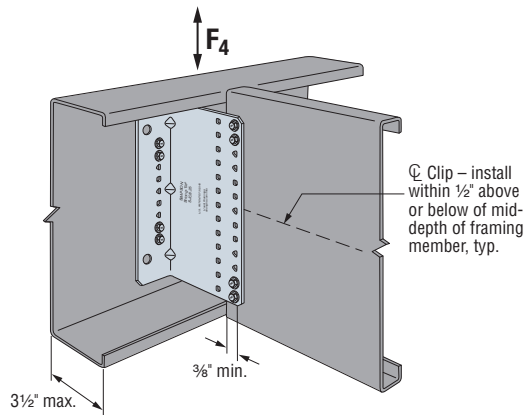
SJC10.25 — Inner Fastener Pattern
(MSJC10.25 similar)



SJC8.25 — Inner Fastener Pattern
(MSJC8.25 similar)



SJC Installation with Carried Member
Fasteners in **Inner Row**



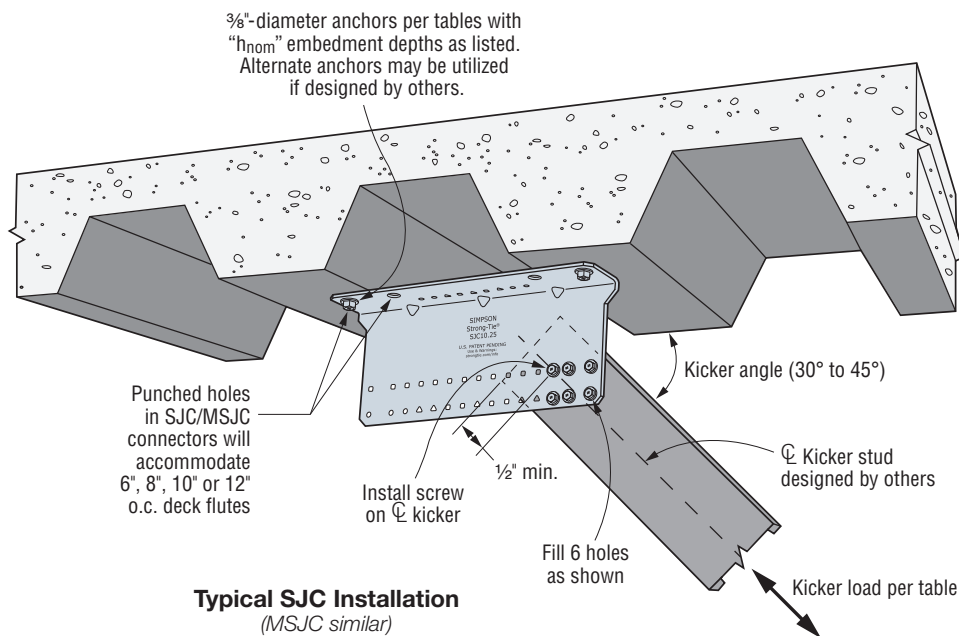
SJC Installation with Carried Member
Fasteners in **Min. Pattern**
(fill circle holes min. quantity,
circle and triangle holes max. quantity)

SJC Steel-Joist Connectors

SJC Connectors — Kicker Allowable Loads (lb.)

Model No.	Connector Material Thickness mil (ga.)	Clip Length (in.)	Fasteners to Kicker	Kicker Angle ²	Max. Allowable Kicker Load for 33 mil (20 ga.) Min. Kicker (lb.)	Anchor Tension at Max. Allowable Kicker Load (lb.)	Code Ref.
SJC8.25	68 (14)	8¼	(6) #10	30°	490	345	IBC, FL
				45°	535	570	
SJC10.25	68 (14)	10¼	(6) #10	30°	625	475	
				45°	530	440	
MSJC10.25	97 (12)	10¼	(6) #10	30°	950	675	
				45°	780	680	

1. Loads apply to connectors installed perpendicular or parallel to metal deck flutes, with minimum 33 mil (20 ga.) kicker. No increase allowed for kicker with heavier thickness.
2. Kicker angle is the acute angle measured relative to the horizontal plane of the metal deck.
3. The tabulated value for anchor tension is per anchor. Anchors must be designed for combined shear and tension. Simpson Strong-Tie anchorage solutions are tabulated on p. 98. Alternate anchors may be utilized if designed by others.
4. Maximum kicker load and anchorage tension at maximum load determined based on tests.
5. See the current *Fastening Systems* catalog at strongtie.com for more information on Simpson Strong-Tie fasteners.



Example

Determine maximum allowable kicker load and tension load on anchor for MSJC10.25.

Given:

- Kicker load = 400 lb.
- Kicker angle = 35° from horizontal

Calculations:

- Interpolate max. allowed kicker load for MSCJ10.25 at 35°:

$$\text{Max. allowed kicker load for MSCJ10.25} = 950 - (950 - 780) * (\cos 35^\circ - \cos 30^\circ) / (\cos 45^\circ - \cos 30^\circ) = 899 \text{ lb.}$$
 Kicker Load = 400 lb. < 893 lb. **OK**
- Interpolate anchor tension at max. load for MSCJ10.25 at 35°:

$$\text{Anchor tension at maximum load} = 675 - (675 - 680) * (\cos 35^\circ - \cos 30^\circ) / (\cos 45^\circ - \cos 30^\circ) = 676 \text{ lb.}$$
- Determine tension load on anchor:

$$\text{Tension load on anchor} = 677 * 400 / 893 = 301 \text{ lb.}$$

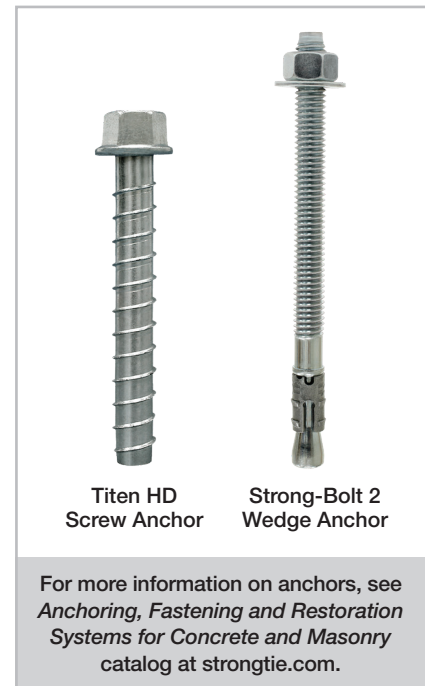
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SJC and MSJC Kicker Anchorage Solutions

Uncracked Concrete, Wind and Seismic in SDC A&B				
Minimum 2.5" Slab (3,000 psi concrete min.) Over Metal Deck				
Model No.	Kicker Angle	3/8"-Diameter Simpson Strong-Tie® Anchor Type	Nominal Embedment Depth, h_{nom} (in.)	Maximum Allowable Kicker Load (lb.)
SJC8.25	30°	Strong-Bolt® 2	2½	490
		Titen HD®	2¼	490
	45°	Strong-Bolt 2	2½	535
		Titen HD	2½	535
SJC10.25	30°	Strong-Bolt 2	2½	625
		Titen HD	2¼	625
	45°	Strong-Bolt 2	2½	530
		Titen HD	2¼	530

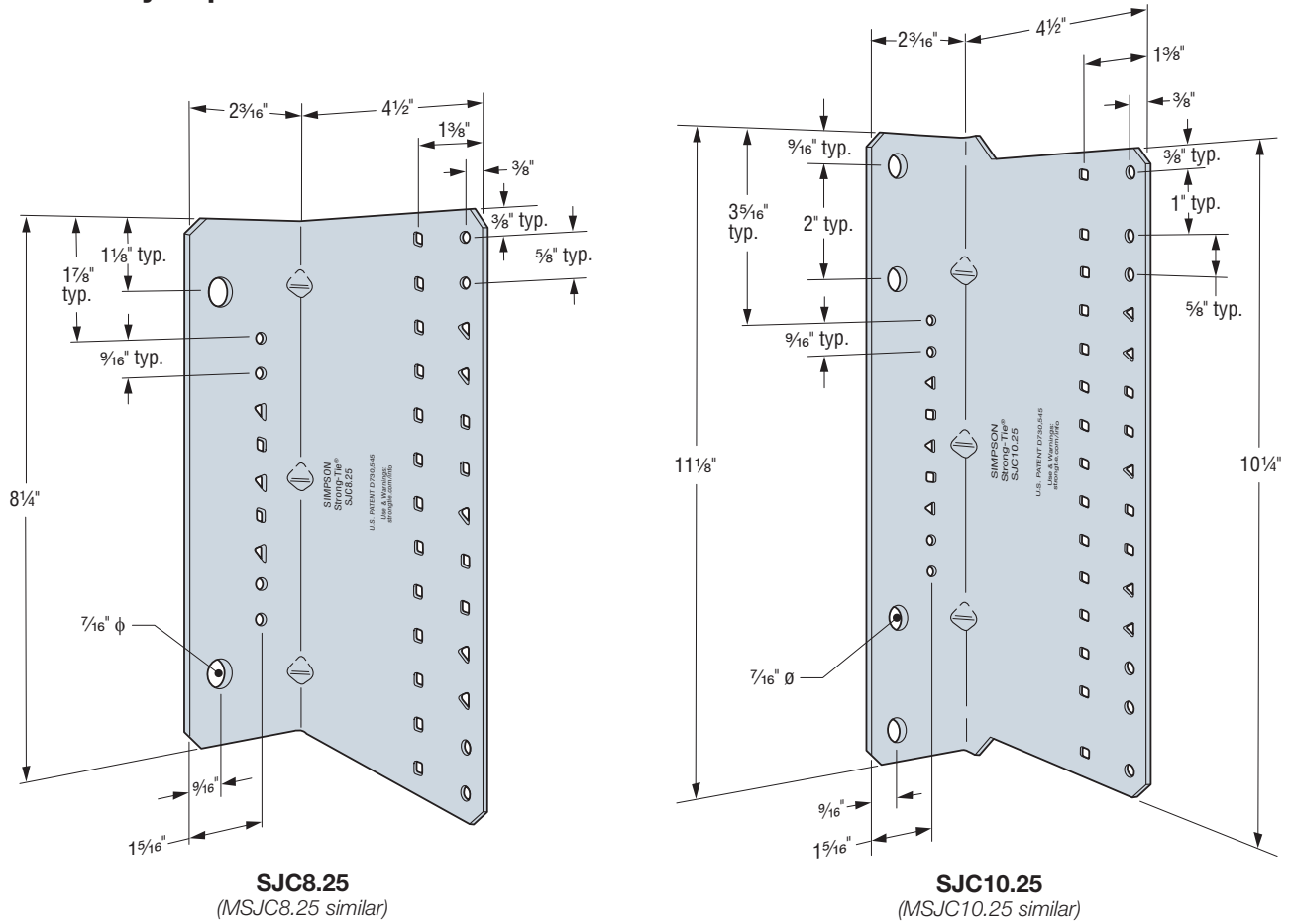
Cracked Concrete, Wind and Seismic in SDC A&B				
Minimum 2.5" Slab (3,000 psi concrete min.) Over Metal Deck				
Model No.	Kicker Angle	3/8"-Diameter Simpson Strong-Tie Anchor Type	Nominal Embedment Depth, h_{nom} (in.)	Maximum Allowable Kicker Load (lb.)
SJC8.25	30°	Strong-Bolt 2	2¾	490
		Titen HD	2½	455
	45°	Strong-Bolt 2	2¾	535
		Titen HD	2½	320
SJC10.25	30°	Strong-Bolt 2	2¾	625
		Titen HD	2½	435
	45°	Strong-Bolt 2	2¾	530
		Titen HD	2½	410

Cracked Concrete, Seismic in SDC C through F					
Minimum 2.5" Slab (3,000 psi concrete min.) Over Metal Deck					
Model No.	Kicker Angle	3/8"-Diameter Simpson Strong-Tie Anchor Type	Nominal Embedment Depth, h_{nom} (in.)	Maximum Allowable Kicker Load (lb.)	
				$\Omega = 1.5$	$\Omega = 2.5$
SJC8.25	30°	Strong-Bolt 2	3¾	490	435
		Titen HD	2½	255	155
	45°	Strong-Bolt 2	3¾	535	330
		Titen HD	2½	185	110
SJC10.25	30°	Strong-Bolt 2	3¾	625	420
		Titen HD	2½	245	145
	45°	Strong-Bolt 2	3¾	530	410
		Titen HD	2½	235	140



- The allowable maximum kicker load is the minimum of anchor allowable loads or connector allowable loads per p. 97. The anchor allowable loads include checks for anchor shear and tension interaction including the effects of eccentric loading.
- Allowable loads have been determined using ACI 318-14 Chapter 17 anchorage calculations with the minimum concrete compressive strength, f'_c and slab thickness listed.
- Strong-Bolt 2 and Titen HD are 3/8"-diameter carbon steel anchor.
- Concrete over metal deck may be Normal Weight or Sand-Lightweight with f'_c of 3,000 psi minimum and 2.5" minimum slab height above upper flute.
- Minimum deck flute height is 1½" (distance from top flute to bottom flute). All other anchor installation requirements shall follow ICC-ES ESR-3037 and ICC-ES ESR-2713.
- Minimum Spacing and Edge distances for bottom of metal deck assemblies shall comply with those required in ICC-ES ESR-3037 for Strong-Bolt 2 anchors and ICC-ES ESR-2713 for Titen HD anchors.
- Load values are based on ACI 318-14, condition B, load factors from ACI 318-14 Section 5.3, no supplemental edge reinforcement for uncracked concrete, $\Psi_{c,v} = 1.0$ for cracked concrete, and periodic special inspection. Reference ICC-ES ESR-3037 and ICC-ES ESR-2713 for further information.
- Allowable Stress Design (ASD) values have been determined by multiplying Load Resistance Factor Design (LRFD) values by a conversion factor, Alpha (α), of 0.7 for seismic loads and 0.6 for wind loads. ASD values for other types or load combinations may be determined using alternate conversion factors.
- Minimum end distance to edge of panel is two times anchor embedment depth.

SJC Utility Clip Dimensions



SJC Steel-Joist Connectors

SJC and SSC Connectors — Soffit Stud Hanger Allowable Loads (lb.)

Model No.	Connector Thickness mil (ga.)	Clip Length (in.)	Anchors	Fasteners to Stud 33 mil (20 ga.) Min.	Allowable Tension Load (lb.)	
					No Bearing Plate	BP $\frac{1}{2}$ -3 Bearing Plate
SJC8.25	68 (14)	8 $\frac{1}{4}$	(2) $\frac{3}{8}$ "	(4) #10	465	930
SJC10.25	68 (14)	10 $\frac{1}{4}$	(2) $\frac{3}{8}$ "	(4) #10	465	930
SSC4.25	68 (14)	4 $\frac{1}{4}$	(1) $\frac{3}{8}$ "	(4) #10	220	585

1. Loads apply to connectors installed perpendicular or parallel to metal deck flutes.
2. Stud member design per designer. Tabulated loads for stud fasteners are based on a minimum stud thickness of 33 mil (20 ga.) with a yield stress of 33 ksi. For 30 mil interior studs with a yield strength of 33 ksi, multiply the tabulated values by 0.9.
3. Anchor design per designer. Note that the SJC requires the symmetrical placement of one anchor on each side of the stud centerline.
4. For the bearing plate option, use Simpson Strong-Tie® BP $\frac{1}{2}$ -3 bearing plates at each $\frac{3}{8}$ "-diameter anchor. Bearing plates are sold separately.

