HSKP™

Preserve the look of mass timber beams while meeting high-demand loads with the HSKP. Offering the highest load ratings yet in our line of concealed beam hangers, the HSKP is ICC-ES code listed and tested for inter-story drift. The HSKP installs in the factory with Strong-Drive® SDCF Timber-CF structural screws, saving valuable time on the jobsite. It also offers generous fit-up tolerance for easy beam placement. The HSKP is readily available through our nationwide distribution network. Like all our products, it's supported by our expert service teams.

Features

- High capacity
- One- and two-hour fire resistance ratings per ASTM E119. See L-C-HSKPFIRE.
- Factory installation of connector reduces on-site labor
- Quick field connection of beam to supporting member reduces crane cycle-time
- Inclined screw hole feature reduces the overall screw count compared to horizontal screws
- Options for wood-to-wood and wood-to-steel concealed connection
- Recommended for use at beam-to-beam or beam-to-column connections in any Seismic Design Category; see L-C-HSKPDRIFT on **strongtie.com** for more information

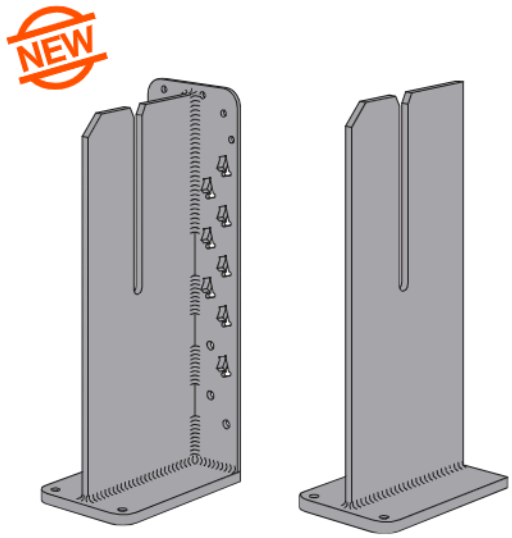
Material: Back and Knife Plate — 3 gauge; Bearing Plate — ½"
Exception: HSKP5.75x19.5 and HSKP5.75x19.5-W knife plate — ⅜"

Finish: HSKP/HSKP-W — Simpson Strong-Tie gray paint, HSKP available in HDG and powder coat; SDCF Timber-CF screw — Yellow Zinc; CJTPL steel dowel — mechanically galvanized

Environment: Dry-service applications only

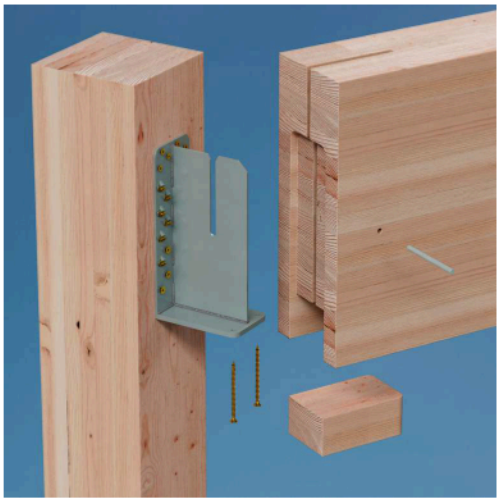
Codes: ICC-ES ESR-2552; City of LA; State of Florida

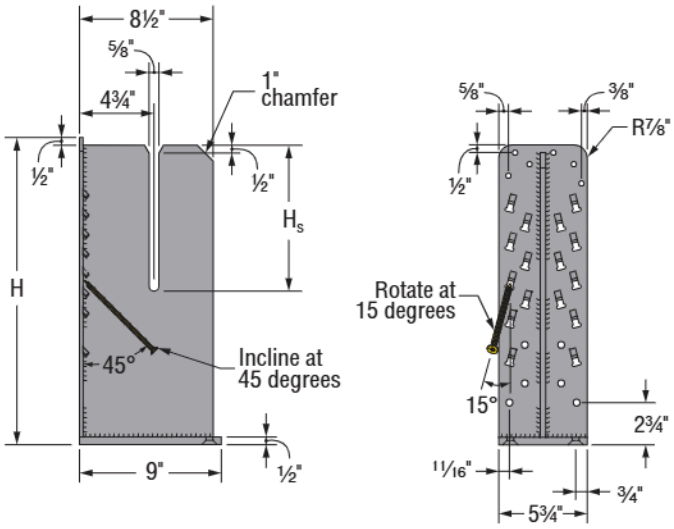
Patents: One or more of these products are covered by a US Patent or are Pending. Please go to **strongtie.com/patents** for the most current list of Simpson Strong-Tie patents.



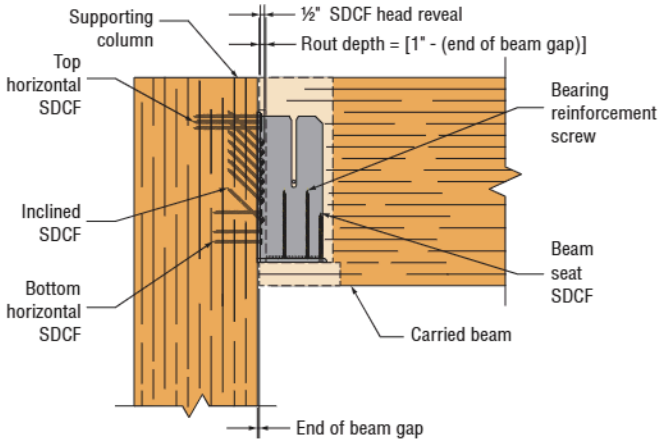
HSKP5.75x19.5
(Others similar)

HSKP5.75x19.5-W
(Others similar)





HSKP Side and Front Views
Inclined SDCF Installation Angles Shown
(HSKP5.75x19.5 shown, others similar)



HSKP Beam-to-Column Assembly
(HSKP5.75x19.5 shown, others similar)

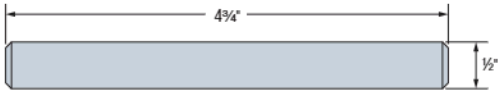
HSKP™

Table 1 — HSKP Wood-to-Wood Allowable Loads

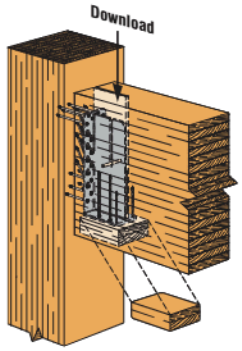
Model No.	Fasteners (SDCF)					Allowable Loads (lb.)						
						DF/SP				SPF/HF		
	Carried Beam		Carrying Column/Beam			Uplift (160)	Download (100/125)		F_2 (160)	Uplift (160)	Download (100/125)		F_2 (160)
	Beam Seat	Bearing Reinf.	Bottom Horizontal	Inclined	Top Horizontal		Column	Beam			Column	Beam	
HSKP5.75x14.5	(2) 27614	—	(6) 27614	(8) 27614	(6) 22858	3,190	22,415	21,260	3,640	2,410	17,700	17,815	3,050
	(2) 27614	—	(6) 27400	(8) 27614	(6) 22858		20,115	20,040			16,190	16,230	
HSKP5.75x17	(2) 27614	(2) 22858	(6) 27614	(12) 27614	(6) 22858	3,190	26,800	26,090	3,640	2,410	22,080	21,935	3,050
	(2) 27614	(2) 22858	(6) 27400	(12) 27614	(6) 22858		24,505	24,140			20,570	20,350	
HSKP5.75x19.5	(2) 27614	(4) 22858	(6) 27614	(16) 27614	(6) 22858	3,190	31,930	30,915	3,640	2,410	26,460	26,055	3,050
	(2) 27614	(4) 22858	(6) 27400	(16) 27614	(6) 22858		28,960	29,700			24,950	24,470	

1. Fasteners: SDCF27400 and SDCF27614 = 0.390" OD by 4" long and 6¼" long Strong-Drive SDCF TIMBER-CF screw, respectively. SDCF22858 = 0.315" OD by 8⅝" long Strong-Drive SDCF TIMBER-CF screw.
2. Uplift and F_2 loads have been increased for wind or seismic with no further increase allowed. Reduce where other loads govern.
3. For HSKP installations on opposite faces (back-to-back) of the same supporting member, the minimum depth of the supporting member is 12¼" when installing the SDCF27614 (6¼" long) bottom horizontal screws and 8¾" when installing the SDCF27400 (4" long) bottom horizontal screws.

Strong-Drive SDCF TIMBER-CF Screw
SDCF22858 = 0.315" OD by 8⅝" (220 mm) long
SDCF27614 = 0.390" OD by 6¼" (160 mm) long
SDCF27400 = 0.390" OD by 4" (100 mm) long



CJTPL Steel Dowel

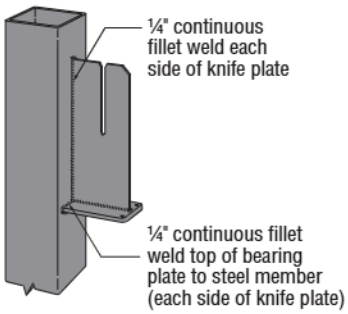


Typical HSKP Beam-to-Column Installation

Table 2 — HSKP Wood-to-Steel Allowable Loads

Model No.	Carried Beam Fasteners (SDCF)		Carrying Steel Member Fillet Weld Size, Length	Allowable Loads (lb.)							
				DF/SP				SPF/HF			
				Uplift (160)	Download (100/125)		F_2 (160)	Uplift (160)	Download (100/125)		F_2 (160)
	Beam Seat	Bearing Reinf.			Column	Beam			Column	Beam	
HSKP5.75x14.5-W	(2) 27614	—	¼" Continuous	3,190	22,630	22,630	3,640	2,410	19,600	19,600	3,050
HSKP5.75x17-W	(2) 27614	(2) 22858	¼" Continuous	3,190	26,800	26,800	3,640	2,410	23,215	23,215	3,050
HSKP5.75x19.5-W	(2) 27614	(4) 22858	¼" Continuous	3,190	32,935	32,935	3,640	2,410	27,455	27,455	3,050

1. Fasteners: SDCF27614 = 0.390" OD by 6¼" long Strong-Drive SDCF TIMBER-CF screw. SDCF22858 = 0.315" OD by 8⅝" long Strong-Drive SDCF TIMBER-CF screw.
2. Uplift and F_2 loads have been increased for wind or seismic with no further increase allowed. Reduce where other loads govern.
3. Loads assume E-70XX weld material.
4. Caution: Follow proper welding procedures and safety precautions. Welding should be in accordance with AWS standards.
5. Welds must conform to the current AWS D1.1 structural welding code for steel.
6. This connection involves welding 3 gauge and ½" steel to heavy structural steel. It should only be performed by skilled, qualified welders.

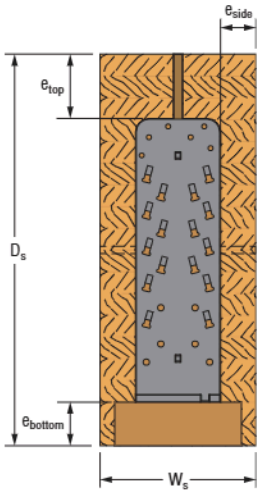


HSKP-W Welded Installation

Table 3 — HSKP Minimum Carried Beam Sizes and Edge Distances

Model No.	Connector Dimensions (in.)						Minimum Carried Beam Sizes (in.)		Minimum Edge Distances (in.)		
	W	H	L	H_s	$B_{w\text{-}min}$	$B_{l\text{-}min}$	W_s	D_s	e_{side}	e_{bottom}	e_{top}
HSKP5.75x14.5	5¾	14½	9	7	2½	8	6¾	15½	½	n/a	1
HSKP5.75x14.5-W		14						15			
HSKP5.75x17	5¾	17	9	8	2½	8	6¾	18	½	n/a	1
HSKP5.75x17-W		16½						17½			
HSKP5.75x19.5	5¾	19½	9	9¼	2⅜	8	6¾	20½	½	n/a	1
HSKP5.75x19.5-W		19						20			

1. Side edge distances for supporting vertical columns must meet or exceed the e_{side} table values for the carried beam. Top edge distances for supporting member 1¼" minimum.
2. $B_{w\text{-}min}$ and $B_{l\text{-}min}$ are the minimum bearing width and length, respectively, required each side of the knife plate to achieve allowable downloads listed in Table 1 (see illustration on page 4).
3. Minimum W_S considering only fastener edge distance does not consider F_2 loads. When F_2 loads must be considered, minimum W_S = 7¼" and minimum e_{side} = 1".
4. When e_{bottom} + ½" bearing plate thickness exceeds the lesser of 1/10 of the depth of the member or 3", consider notch reinforcement with fully threaded screws. See TEB-F-SDCFRINF for design guidance.



HSKP Carried Member Minimum Edge Distances

Table 4 — HSKP Min/Max Carried Beam Depths Considering Inter-story Drift

Model No.	Floor Depth Above Carried Beam (in.)	Carried Beam Depth D_S Range (in.)							
		e_{bottom} = 0		e_{bottom} = 1½		e_{bottom} = 3		e_{bottom} = 3½	
		$D_{S\text{-}min}$	$D_{S\text{-}max}$	$D_{S\text{-}min}$	$D_{S\text{-}max}$	$D_{S\text{-}min}$	$D_{S\text{-}max}$	$D_{S\text{-}min}$	$D_{S\text{-}max}$
HSKP5.75x14.5 HSKP5.75x14.5-W	6⅝ to 7½	16½	18	18	21	19½	24	19½	25½
	3⅜ to 4½	16½	21	18	24	19½	27	19½	28½
	No Floor	16½	25½	18	28½	22½	31½	22½	33
HSKP5.75x17 HSKP5.75x17-W	6⅝ to 7⅛	18	24	19½	27	21	30	22½	30
	4⅛ to 5	18	25½	19½	28½	21	31½	22½	33
	No Floor	18	30	21	33	24	36	25½	37½
HSKP5.75x19.5 HSKP5.75x19.5-W	6⅛ to 7⅛	21	28½	22½	31½	24	34½	24	36
	4⅛ to 4½	21	31½	22½	34½	24	37½	24	37½
	No Floor	21	36	24	39	27	42	28½	42

1. When installed in the carried beam, ½"-diameter dowel to be located vertically mid-height within the floor-beam assembly. The total floor-beam assembly depth is the combined depth of the supported floor member and the carried beam. For assemblies not including CLT floor above, the total assembly depth is the depth of the carried beam alone (see illustration).
2. $D_{S\text{-}min}$ and $D_{S\text{-}max}$ values shown in the table only define minimum and maximum beam depths when considering joint rotation due to story drift but do not consider beam size requirements based on design loads. When joint rotation due to story drift need not be considered, refer to Table 3 for minimum allowable beams dimensions based on minimum fastener edge distances.
3. Table $D_{S\text{-}min}$ and $D_{S\text{-}max}$ depths values are rounded up and down, respectively, to the nearest 1 ½" for nominal GLB depths.
4. Table carried beams depths are based on floor depth ranges shown. To determine carried beam depths for floor depths not included in the table, refer to L-C-HSKPBEAM.

Installation Instructions

Prior to connection of the carried beam to the HSKP hanger, carried member shall be routed to allow for the concealed installation of the HSKP and predrilled for the installation of the optional steel dowel (reference L-C-HSKPROUT). The designer shall determine the desired beam-end rout depth and bottom-of-beam rout depth for the desired concealed installation and potential fire considerations. When considering fire requirements, maximum allowable gaps and intumescent requirements shall be determined by the designer. For additional installation information and routing details, visit **strongtie.com/HSKP**.

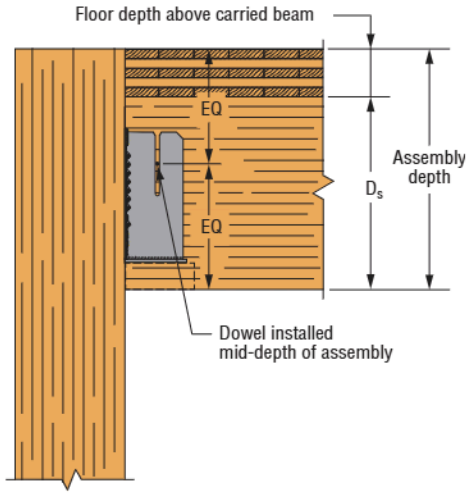
Note: When installing SDCF screws for the HSKP connection, do not exceed recommended seating torque values (reference L-F-MTINSTALL).

HSKP Factory Installation to Column

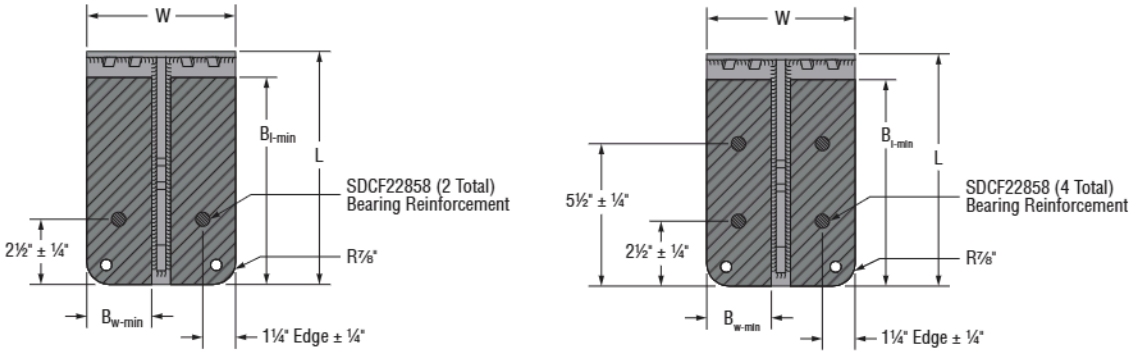
- Drive the required horizontal SDCF screws at the top and the bottom of the hanger first. See Table 1 for the proper screw sizes. This will secure the hanger to the column to facilitate smooth installation of the inclined screws.
- Drive the required SDCF inclined screws through the patent pending tab feature. Screws are inclined upward 45° and rotated inward 15°.

Factory Installation of Bearing Reinforcement Screws Into Beam

- Install the SDCF22858 bearing reinforcement screws through the bottom of the carried member as required per the HSKP load table (see illustrations below for installation locations). To ensure SDCF heads are normal to the face of the bottom of the carried member, predrill 3⁄16" maximum diameter x 2" minimum depth pilot holes prior to installation.



Beam-to-Column Assembly with CLT Floor Above
(Fasteners not shown for clarity)



HSKP5.75x17 HSKP5.75x19.5

Bearing Reinforcement Screw Placement

HSKP™

Installation Instructions (cont.)

Factory Installation of Dowel

- Install ½"-diameter x 4¾"-long dowel into ½"-diameter predrilled hole in the carried member. Note that, while the installation of the dowel is only a requirement when considering joint rotation due to inter-story drift, the installation of the dowel can aid installation of the carried beam by guiding the carried member into position as the dowel slides into the HSKP knife plate slot. Dowel location must be centered about knife plate kerf cut. When considering inter-story drift, the vertical location of the steel dowel is to be located mid-height of the beam-floor assembly. If inter-story drift need not be considered, the final vertical location of the dowel may be anywhere within the knife plate slot provided a ¼" minimum gap is allowed between the bottom of the dowel and the bottom of the slot to allow shrinkage of the carried beam.

Completing the Field Installation

- After the beam has been placed into position, adjust the location of the carried member as needed to allow for the maximum desired gap between the carried and supporting member, install the beam seat screws into the bottom of the carried member through the two countersunk holes in the bottom of the HSKP bearing plate. See Table 1 for the proper screw size.
- For fully concealed installations requiring a bottom filler block, the connection is to be determined by the building designer.

Table 5 — Product Information

Model No.	Components Included	Quantity
HSKP5.75x14.5KT	(1) HSKP5.75x14.5 Connector (1) CJTPL ½"-Dia. Steel Dowel, (16) SDCF27614, (6) SDCF22858	1
HSKP5.75x17KT	(1) HSKP5.75x17 Connector (1) CJTPL ½"-Dia. Steel Dowel, (20) SDCF27614, (8) SDCF22858	1
HSKP5.75x19.5KT	(1) HSKP5.75x19.5 Connector (1) CJTPL ½"-Dia. Steel Dowel, (24) SDCF27614, (10) SDCF22858	1
HSKP5.75x14.5	(1) HSKP5.75x14.5 Connector	1
HSKP5.75x17	(1) HSKP5.75x17 Connector	1
HSKP5.75x19.5	(1) HSKP5.75x19.5 Connector	1
HSKP5.75x14.5-W	(1) HSKP5.75x14.5-W Connector (1) CJTPL ½"-Dia. Steel Dowel, (2) SDCF27614	1
HSKP5.75x17-W	(1) HSKP5.75x17-W Connector (1) CJTPL ½"-Dia. Steel Dowel, (2) SDCF27614, (2) SDCF22858	1
HSKP5.75x19.5-W	(1) HSKP5.75x19.5-W Connector (1) CJTPL ½"-Dia. Steel Dowel, (2) SDCF27614, (4) SDCF22858	1