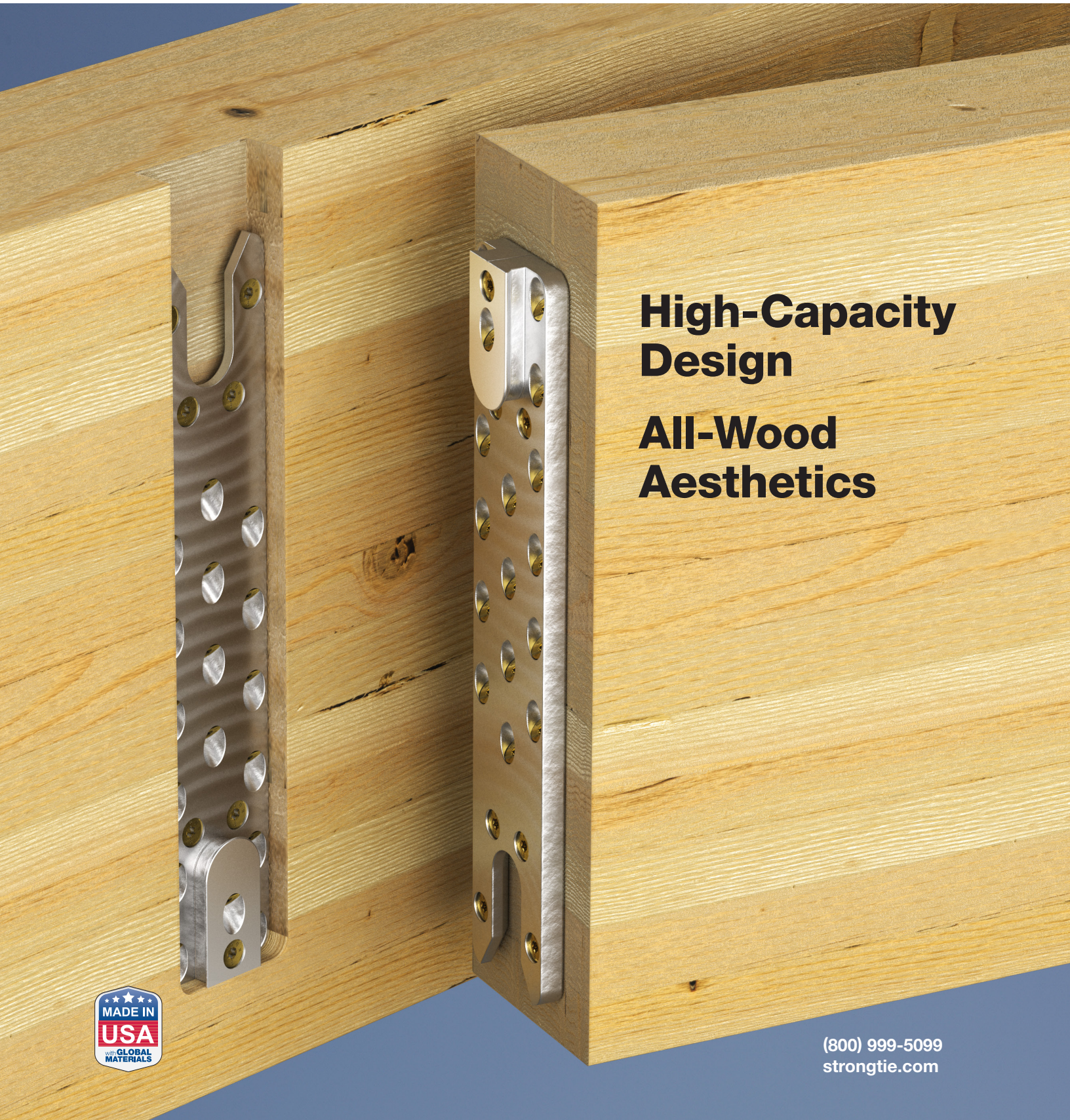
ACBH Aluminum Concealed Beam Hanger for Glulam

SIMPSON Strong-Tie®



High-Capacity Design

All-Wood Aesthetics

MADE IN USA with GLOBAL MATERIALS

(800) 999-5099
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ACBH Aluminum Concealed Beam Hanger for Glulam

Introducing the new ACBH aluminum concealed beam hanger from Simpson Strong-Tie.

Made for the rigors of mass timber construction, the ACBH is machined from aluminum for a high-capacity design. With an allowable stress design load capacity of up to 20 kips, it is the strongest connector in our line of concealed end-grain beam hangers. Its concealed connection allows for a wood-only aesthetic while offering one- and two-hour fire resistance ratings per ASTM E119. This hanger installs easily in the factory using our fully threaded Strong-Drive® SDCF Timber-CF structural screws — and offers generous onsite fit-up tolerance for smooth and easy beam installation. The ACBH is manufactured and stocked in the US for reliable availability.

Features

- High capacity.
- Concealed for architectural aesthetics and fire-rated performance.
- One- and two-hour fire resistance ratings per ASTM E119.
- Multiple router options to suit jobsite needs.
- Recommended for use at beam-to-beam connections in any Seismic Design Category, and at beam-to-column connections in Seismic Design Category A or B. See L-C-ACBHDRIFT for more information.
- +/- 1⁄16" beam length tolerance on each end enables easier installation.

Material: ASTM B221 6061-T6 Aluminum
Finish: ACBH – None
SDCF – Yellow Zinc

Environment: Dry-service applications only

Table 1 – ACBH Allowable Downloads

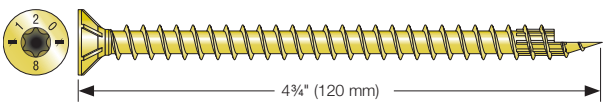
Model	Qty.	Dimensions (in.)		Fasteners			Allowable Downloads (lbs.)										
							DF/SP					SPF/HF					
							Beam to Column		Beam to Beam			Beam to Column			Beam to Beam		
		W	H	Supported Beam	Supporting Column/Beam		Floor (100)	Snow/Roof (115/125)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)	Floor (100)	Snow (115)	Roof (125)
					Straight	Inclined											
ACBH3x15.37	1	3	15⅜	(24) SDCF22614	(7) SDCF22434	(17) SDCF22434	19,815	19,815	14,820	17,040	18,525	13,635	15,680	17,045	13,305	15,200	16,630
					(7) SDCF22434	(17) SDCF22614	19,815	19,815	18,420	19,815	19,815	14,095	16,210	17,200	14,095	16,210	17,200
					(7) SDCF22614	(17) SDCF22614	20,050	20,575	19,555	20,575	20,575	14,095	16,210	17,620	14,095	16,210	17,620
	2	6½	15⅜	(48) SDCF22614	(14) SDCF22434	(34) SDCF22434	39,630	39,630	29,640	34,080	37,045	27,270	31,360	34,090	26,610	30,400	33,260
					(14) SDCF22434	(34) SDCF22614	39,630	39,630	36,840	39,630	39,630	28,190	32,420	34,400	28,190	32,420	34,400
					(14) SDCF22614	(34) SDCF22614	40,100	41,150	39,110	41,150	41,150	28,190	32,420	35,240	28,190	32,420	35,240

1. Table loads are for $e_{side} \geq 1\frac{5}{16}$". For $1\frac{1}{16}" < e_{side} < 1\frac{5}{16}"$, multiply allowable load by 0.93.
2. When considering uplift forces, use Simpson Stong-Tie® Strong-Drive SDWC15600 (6" length) screw per detail (see page 4). Uplift capacity is 555 lbf for DF/SP and 485 lbf for SPF/HF per screw. Use multiple screws for additional uplift.
3. Fasteners: SDCF22434 and SDCF22614 = 0.23" shank diameter by 4¾" long and 6¼" long Strong-Drive SDCF TIMBER-CF screw, respectively.

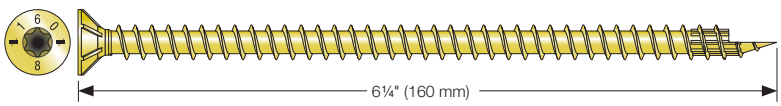
Table 2 – ACBH Allowable Lateral Loads

Model	Qty.	Dimensions (in.)		Fasteners			Allowable Lateral Loads (lbs.) (100/115/125/160)			
							DF/SP		SPF/HF	
		W	H	Supported Beam	Supporting Column/Beam		F_1	F_2	F_1	F_2
					Straight	Inclined				
ACBH3x15.37	1	3	15⅜	(24) SDCF22614	(7) SDCF22614	(17) SDCF22614	6,285	6,460	5,455	6,460

1. F_1 table loads are for $e_{side} \geq 1\frac{5}{16}$" . For $1\frac{1}{8}" < e_{side} \leq 1\frac{5}{16}"$, multiply F_1 table load capacities by 0.94. F_2 table loads are for $e_{side} \geq 1\frac{1}{16}"$.
2. Allowable loads for multiple ACBH assemblies are equivalent to the individual ACBH allowable loads multiplied by the number of connectors installed.
3. Allowable loads consider wind or seismic with no further increase allowed.
4. For loading simultaneously in more than one direction, the allowable load must be evaluated using the following equation: (Design Download / Allowable Download) + (Design F_1 / Allowable F_1) + (Design F_2 / Allowable F_2) < 1.0.
5. Fasteners: SDCF22614 = 0.23" shank diameter by 6¼" long Strong-Drive SDCF TIMBER-CF screw.



SDCF22434 – Strong-Drive SDCF TIMBER-CF Screw



SDCF22614 – Strong-Drive SDCF TIMBER-CF Screw

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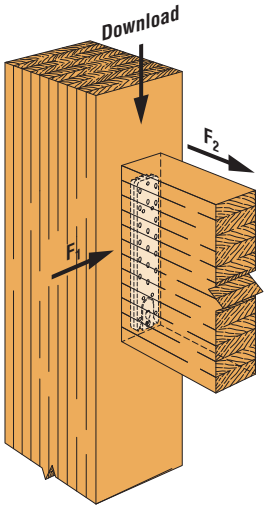
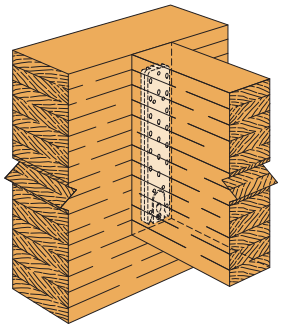
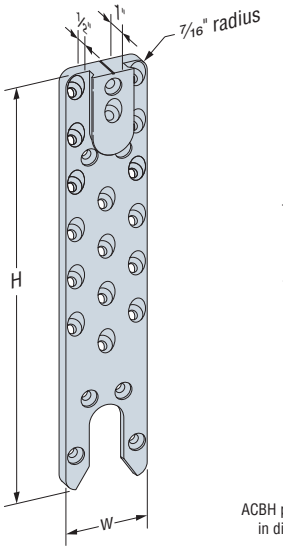


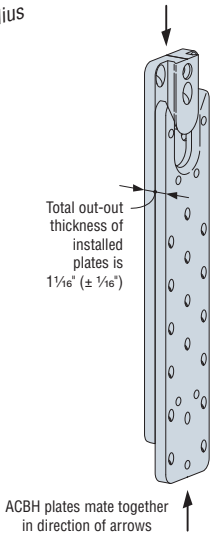
Beam to Column



Beam to Beam



ACBH3x15.37

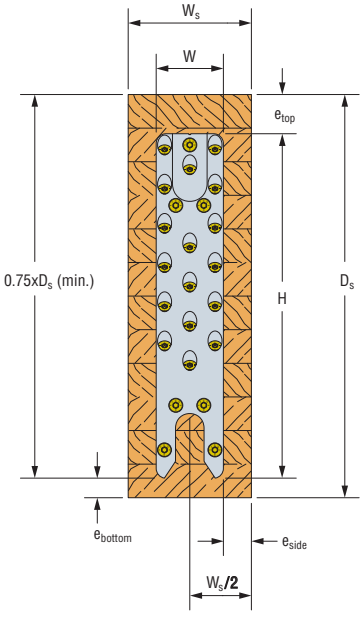


Assembly Thickness and Fit-Up Tolerance

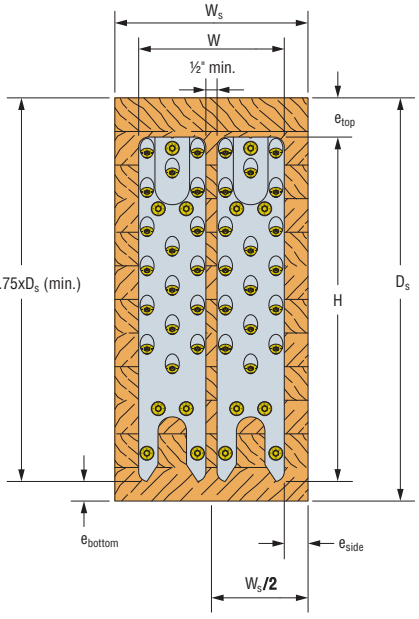
Table 3 – Connection Geometry Requirements

Minimum Carried Beam Sizes Considering Only Fastener Edge Distance								
Condition	Top of Beam Coverage	Min. Carried Beam Size (in.)		Assembly Dimensions (in.)		Min. Edge Distances (in.)		
		W_s	D_s	W	H	e_{side}	e_{top}	e_{bottom}
Single ACBH3x15.37	n/a	5⅛	18	3	15⅜	1 1/16	1¾	⅞
Double ACBH3x15.37	n/a	8⅝	18	6½	15⅜	1 1/16	1¾	⅞
Minimum Carried Beam Sizes for One-Hour Fire Resistance								
Condition	Top of Beam Coverage	Min. Carried Beam Size (in.)		Assembly Dimensions (in.)		Min. Edge Distances (in.)		
		W_s	D_s	W	H	e_{side}	e_{top}	e_{bottom}
Single ACBH3x15.37	Full Coverage	6¾	19	3	15⅜	1⅞	1¾	1⅞
	Exposed		19⅛				1⅞	
Double ACBH3x15.37	Full Coverage	10¼	19½	6½	15⅜	1⅞	1¾	2⅜
	Exposed		19⅝				1⅞	
Minimum Carried Beam Sizes for Two-Hour Fire Resistance								
Condition	Top of Beam Coverage	Min. Carried Beam Size (in.)		Assembly Dimensions (in.)		Min. Edge Distances (in.)		
		W_s	D_s	W	H	e_{side}	e_{top}	e_{bottom}
Single ACBH3x15.37	Full Coverage	10¼	20¾	3	15⅜	3⅝	1¾	3⅝
	Exposed		22⅝				3⅝	
Double ACBH3x15.37	Full Coverage	12¼	21	6½	15⅜	2⅞	1¾	3⅞
	Exposed		22⅛				2⅞	

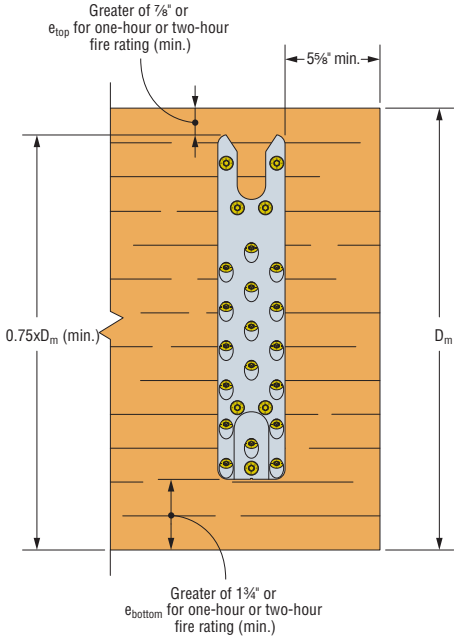
1. Side edge distances for supporting vertical columns must meet or exceed the e_{side} table values for the supported beam.
2. For $1\,1/16" \le e_{side} < 1\,5/16"$, see see Table 1 and 2 footnotes for allowable load reductions.
3. Minimum carried beam sizes and edge distances for two-hour fire resistance are based on ASTM E119 fire testing. Test specimens included 3M Expantrol E-FIS intumescent fire seal at the beam-to-column interface. Substitutions for the 3M Expantrol are allowable provided they meet or exceed the 3M Expantrol's specifications for flame spread, smoke developed index, intumescent activation temperatures (expansion rate) and service temperatures.
4. Full coverage for top of beam is for conditions where the top of the beam is not directly exposed to fire (i.e., roof or floor members attached to the top of the supported beam and providing complete continuous cover to the top of the carried beam).
5. For one-hour and two-hour fire resistance, the gap between the end of the carried member and the face of the carrying member shall not exceed ¼".



Single ACBH on Carried Beam



Double ACBH on Carried Beam



Single ACBH on Carrying Beam

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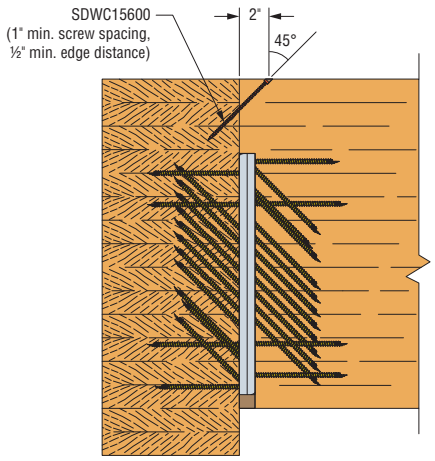
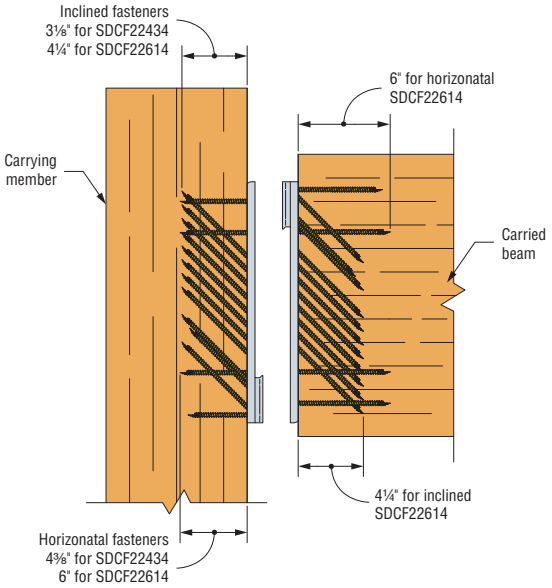


ACBH3x15.37 Installation with SDWC15600 for Uplift Capacity (side view)



ACBH3x15.37 Side View with Screw Depths

Installation

- Use all specified fasteners; install horizontal screws first, then inclined screws.
- Centerline notch at the top of the part can be used to help locate the connector on the wood member.
- Do not overdrive SDCF screws during installation of fasteners. Predrilling lead holes for the SDCF screws is recommended if wood members tend to split or if driving the SDCF fasteners at the proper angle is difficult due to wood grain resistance. Predrilled holes for the SDCF screws shall be 3⁄16" diameter maximum.
- Rout carried and/or carrying member according to application needs. The minimum recommended rout width and length is 1⁄16" larger than the tabulated part dimensions. The recommended corner radius is ⅜" (10 mm). The backplates must seat flush against the surfaces to which they are being fastened.
- A ⅛" minimum to ¼" maximum gap is recommended between the carried and carrying members to prevent wood-wood binding during field assembly. Fire sealant is required at the ACBH connection location when considering fire resistance. Gaps larger than ¼" may further improve ease of installation but must be approved by the Engineer of Record when considering fire resistance.
- When attaching to glulam members in end grain, members with multiple piece laminations across the width must have no gap between edge joints to achieve table load capacities.

Options

- Connection has been load-rated for three different screw length options in the carrying member.
- Double connectors can be used on a single joist end for increased connection capacity (see load tables).

Product Information

Ordering SKU	Description	Quantity
ACBH3X15.37-R1	(2) ACBH3x15.37 backplates (1 pair, screws not included)	1
ACBH3X15.37-R8	(16) ACBH3x15.37 backplates (8 pairs, screws not included)	1
ACBH3X15.37-KT	(2) ACBH3x15.37 backplates with (48) SDCF22614 screws (1 connection kit)	1
SDCF22434	Strong-Drive SDCF Timber-CF 0.315" x 4¾" Screw	250
SDCF22614	Strong-Drive SDCF Timber-CF 0.315" x 6¼" Screw	250

This flier is effective until December 31, 2024, and reflects information available as of December 1, 2022.
This information is updated periodically and should not be relied upon after December 31, 2024.
Contact Simpson Strong-Tie for current information and limited warranty or see strongtie.com.

(800) 999-5099
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