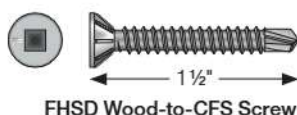
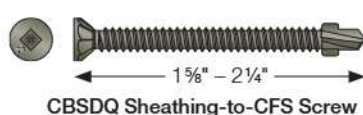


CFS Systems

Strong-Drive® PPHD/CBSDQ/FHSD/WSFLRV Screws

For More Product Information:

- Strong-Drive® PPHD Sheathing-to-CFS screw: see pp. 118 and 239, C-F-2023 *Fastening Systems* catalog
- CBSDQ Sheathing screw: see p. 244, C-F-2023 *Fastening Systems* catalog
- FHSD Wood-to-CFS screw: see p. 246, C-F-2023 *Fastening Systems* catalog
- WSFLRV Wood-to-CFS/Aluminum screw: see p. 247, C-F-2023 *Fastening Systems* catalog
- See ESR-4208 for Strong-Drive PPHD Sheathing-to-CFS and CBSDQ Sheathing screws design and installation with wood structural panels.



PPHD, CBSDQ, FHSD, WSFLRV Screws¹¹ — Nominal Shear Strength (R_n) for Wind and Other In-Plane Loads for Shearwalls (lb./ft.)

Assembly Description	Maximum Aspect Ratio (h/w)	Fastener Spacing at Panel Edges (in.)			
		6	4	3	2
1 5/32" structural 1 sheathing (4 ply), one side	2:1	1,065 ³	—	—	—
7/16" rated sheathing (OSB), one side	2:1	910 ³	1,410	1,735	1,910
7/16" rated sheathing (OSB), one side oriented perpendicular to framing	2:1	1,020	—	—	—
7/16" rated sheathing (OSB), one side	2:1 ⁵	—	1,025	1,425	1,825

- Nominal strength shall be multiplied by the resistance factor ($\phi = 0.65$) to determine the design strength or divided by the safety factor ($\Omega = 2.0$) to determine the allowable strength.
- Screws in the field of the panel shall be installed 12" (305 mm) on center (o.c.).
- Where fully blocked gypsum board is applied to the opposite side of this assembly, per Table C2.1-2 AISI S213 *Standard North American Standard for Cold-Formed Steel Framing — Lateral Design 2018 Edition with Supplement No. 1 and Commentary* with screw spacing at 7" (178 mm) o.c. edge and 7" (178 mm) o.c. field, these nominal strengths are permitted to be increased by 30%.
- For walls with material of the same type and nominal strength applied to opposite faces of the same wall, the available strength of material of same capacity is cumulative. Where the material nominal strengths are not equal, the available strength shall be either two times the available strength of the material with the smaller value or shall be taken as the value of the stronger side, whichever is greater. Summing the available strengths of dissimilar material applied to opposite faces or to the same wall line is not allowed.
- Shearwall height to width aspect ratio (h/w) greater than 2:1, but not exceeding 4:1, shall be permitted provided the nominal shear strength is multiplied by 2w/h.
- For wood structural panel sheathed shearwalls, tabulated R_n values shall be applicable for short-term load duration (wind loads). For other in-plane lateral loads of normal or permanent load duration as defined by the AWC NDS, the values in the table above for wood structural panel sheathed shearwalls shall be multiplied by 0.63 (normal) or 0.56 (permanent).
- Maximum stud spacing 24" o.c.
- All sheathing edges shall be attached to framing or 1 1/2" width 33 mil blocking.
- Table based on Table C2.1-1 AISI S213 *Standard North American Standard for Cold-Formed Steel Framing — Lateral Design 2018 Edition with Supplement No. 1 and Commentary*.
- See General Load Table on p. 22 for screw strength.
- #8 screws — PPHD, CBSDQ, FHSD, WSFLRV. #10 screws — FHSD.
- Stud, track and blocking (if applicable) shall be a minimum of 33 mil.

CFS Systems

Strong-Drive®

PPHD/CBSDQ/FHSD/WSFLRV Screws (cont.)

PPHD, CBSDQ, FHSD, WSFLRV Screws¹² — Nominal Shear Strength (R_n)
for Seismic and Other In-Plane Loads for Shearwall (lb./ft.)

Assembly Description	Maximum Aspect Ratio (h/w)	Fastener Spacing at Panel Edges ² (in.)				Designation Thickness ^{5,6} of Stud, Track and Blocking (mil)	Required Sheathing Screw Size
		6	4	3	2		
1½" structural 1 sheathing (4 ply), one side	2:1 ³	780	990	—	—	33 or 43	8
	2:1	890	1,330	1,775	2,190	43	10
¾" rated sheathing (OSB), one side	2:1 ³	700	915	—	—	68	8
	2:1 ³	825	1,235	1,545	2,060	48	8
	2:1	940	1,410	1,760	2,350	54	8
	2:1	1,232	1,848	2,310	3,080	68	10

- Nominal strength shall be multiplied by the resistance factor ($\phi = 0.60$) to determine the design strength or divided by the safety factor ($\Omega = 2.5$) to determine the allowable strength.
- Screws in the field of the panel shall be installed 12" (305 mm) on center (o.c.).
- Shearwall height to width aspect ratio (h/w) greater than 2:1, but not exceeding 4:1, shall be permitted provided the nominal shear strength is multiplied by 2w/h.
- For walls with material of the same type and nominal strength applied to opposite faces of the same wall, the available strength of material of same capacity is cumulative. Where the material nominal strengths are not equal, the available strength shall be either two times the available strength of the material with the smaller value or shall be taken as the value of the stronger side, whichever is greater. Summing the available strengths of dissimilar material applied to opposite faces or to the same wall line is not allowed.
- Substitution of a stud or track of a different designation thickness is not permitted.
- Wall studs and track shall be of ASTM A1003 Structural Grade 33 (Grade 230) Type H steel for members with a designation thickness of 33 and 43 mil, and A1003 Structural Grade 50 (Grade 340) Type H steel for members with a designation thickness equal to greater than 54 mil.
- For wood structural panel sheathed shearwalls, tabulated R_n values shall be applicable for short-term load duration (seismic loads). For other in-plane lateral loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above for wood structural panel sheathed shearwalls shall be multiplied by 0.63 (normal) or 0.56 (permanent).
- Maximum stud spacing 24" o.c.
- All sheathing edges shall be attached to framing or 1½" width 33 mil blocking.
- Table based on Table C2.1-3 AISI S213 Standard *North American Standard for Cold-Formed Steel Framing — Lateral Design 2018 Edition with Supplement No. 1 and Commentary*.
- See General Load Table on p. 22 for screw strength.
- #8 screws — PPHD, CBSDQ, FHSD, WSFLRV. #10 screws — FHSD.

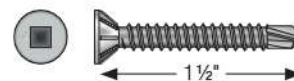
CFS Systems

Strong-Drive®

1½" FHSD Wood-to-CFS Screw for Use in Plywood-to-Aluminum Connections

The Simpson Strong-Tie FHSD Wood-to-CFS screw (SSFHSD112S1016) is an ASTM C1513 compliant, #10 flat head, 1½" long, Type 410 stainless-steel self-tapping screw. This information is related to the use of this screw for ¾" plywood to ½" aluminum connections.

Third-party witnessed testing was performed in accordance with AISI Standard Test Method S904-08 to determine screw strength.



FHSD Wood-to-CFS Screw

FHSD Wood-to-CFS Screw Strength

Nominal Screw Length (in.)	Size	Threads per Inch	Nominal Strength (lb.)		Allowable Load (lb.)	
			Shear, Pss	Tension, Pts	Shear, Pss/Ω	Tension, Pts/Ω
1½	#10	16	2,275	3,435	760	1,145

FHSD Wood-to-CFS Screw — Allowable Loads

Single Shear (lb.)	Pullout (lb.)	Pull-Through (lb.)
217	207	137

1. Allowable loads are shown with a duration of load for the ¾" plywood of $C_D=1.0$.
 Loads may be increased for load duration per the building code up to $C_D=1.6$.
 Tabulated values must be multiplied by all applicable adjustment factors.