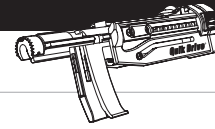


## Collated Metal Screws


**SIMPSON**  
**Strong-Tie**®

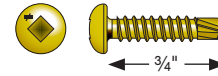
## Strong-Drive® PHSD FRAMING-TO-CFS Screw

**Common Applications:**

Cold-formed steel framing and sheet steel sheathing to cold-formed steel

**Features:**

- Pan head
- #2 drill point
- #2 square drive (driver bit in each box; replacement bit model BIT2S)
- Yellow zinc coating
- Straight collation

**Codes/Standards:** ASTM C1513 compliant, City of LA RR25670**For Technical Data and Loads,** see Technical Supplement

## Yellow Zinc Coating

Length (in.)	Shank Size	Threads Per Inch	Point Size	Carton Quantity	Model No.	PROPHG2
3/4	#8	18	2	2,500	PHSD34S0818	✓

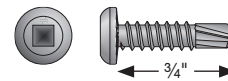
## Strong-Drive® FPHSD FRAMING-TO-CFS Screw

**Common Applications:**

Cold-formed steel framing and sheet steel sheathing to cold form steel

**Features:**

- Flat pan head
- Clear zinc coating
- #3 square drive (driver bit in each box; replacement bit model BIT3S)
- Straight collation
- #3 drill point
- This screw is also available in bulk for hand-drive installation; see p. 95 for details

**Codes/Standards:** ASTM C1513 compliant, ICC-ES ESR 3006**For Technical Data and Loads,** see Technical Supplement

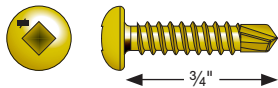
## Clear Zinc Coating

Length (in.)	Shank Size	Threads Per Inch	Point Size	Carton Quantity	Model No.	PROPP150G2	PROPHG2
3/4	#10	16	3	2,500	FPHSD34S1016	✓	✓
3/4	#12	14	3	2,500	FPHSD34S1214	✓	✓

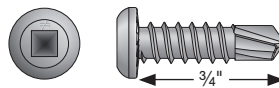
## CFS Systems

## PHSD/FPHSD Screws

For more information, see p. 208, C-F-2019 Fastening Systems Catalog



Strong-Drive® PHSD FRAMING-TO-CFS Screw



Strong-Drive® FPHSD FRAMING-TO-CFS Screw

PHSD (#8) Screw — (Sheet-Steel Sheathing to CFS) Nominal Shear Strength ( $R_n$ ) for Wind (W) and Seismic (S) for Shearwalls<sup>1</sup> (lb./ft.)

Assembly Description	Max. Aspect Ratio (h/w)	Fastener Spacing at Panel Edges <sup>2</sup> (in.)				Designation Thickness <sup>5</sup> of Stud, Track and Blocking <sup>7</sup> (mil)
		6	4	3	2	
0.018" sheet steel, one side	2:1	485 (W) 390 (S)	—	—	—	33 (min.)
0.027" sheet steel, one side	4:1	—	1,000	1,085	1,170	43 (min.)
	2:1 <sup>3</sup>	647	710	778	845	33 (min.)
0.018" sheet steel, both sides	2:1	970 (W) 780 (S)	—	—	—	33 (min.)
0.027" sheet steel, both sides	4:1	—	2,000	2,170	2,340	43 (min.)
	2:1 <sup>3</sup>	1,294	1,420	1,556	1,690	33 (min.)

- Nominal strength shall be multiplied by the resistance factor ( $\phi = 0.6$ , LRFD Seismic,  $\phi = 0.65$ , LRFD Wind) to determine design strength or divided by the safety factor ( $\Omega = 2.5$ , ASD Seismic,  $\Omega = 2.0$ , ASD Wind) to determine 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 strength values are multiplied by 2w/h.
- 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.
- In lieu of blocking, panel edges shall be permitted to be overlapped and attached to each other with screw spacing as required for panel edges. Where such a connection is used, tabulated design values shall be reduced 30%.
- Maximum stud spacing 24" o.c.
- Blocking, if applicable, shall be a minimum 33 mil, 1½" width.
- Table based on Table C2.1-1 AISI S213 Standard North American Standard for Cold-Formed Steel Framing — Lateral Design 2007 Edition with Supplement No. 1 and Commentary.

FPHSD (#10) Screw — (Sheet-Steel Sheathing to CFS) Nominal Shear Strength ( $R_n$ ) for Wind (W) and Seismic (S) for Shearwalls<sup>1</sup> (lb./ft.)

Assembly Description	Max. Aspect Ratio (h/w)	Fastener Spacing at Panel Edges <sup>2</sup> (in.)				Designation Thickness <sup>5</sup> of Stud, Track and Blocking <sup>7</sup> (mil)
		6	4	3	2	
0.018" sheet steel, one side	2:1	485 (W) 390 (S)	—	—	—	33 (min.)
0.027" sheet steel, one side	4:1	—	1,000	1,085	1,170	43 (min.)
	2:1 <sup>3</sup>	647	710	778	845	33 (min.)
0.018" sheet steel, both sides	2:1	970 (W) 780 (S)	—	—	—	33 (min.)
0.027" sheet steel, both sides	4:1	—	2,000	2,170	2,340	43 (min.)
	2:1 <sup>3</sup>	1,294	1,420	1,556	1,690	33 (min.)

- Nominal strength shall be multiplied by the resistance factor ( $\phi = 0.6$ , LRFD Seismic,  $\phi = 0.65$ , LRFD Wind) to determine design strength or divided by the safety factor ( $\Omega = 2.5$ , ASD Seismic,  $\Omega = 2.0$ , ASD Wind) to determine 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 strength values are multiplied by 2w/h.
- 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.
- In lieu of blocking, panel edges shall be permitted to be overlapped and attached to each other with screw spacing as required for panel edges. Where such a connection is used, tabulated design values shall be reduced 30%.
- Maximum stud spacing 24" o.c.
- Blocking, if applicable, shall be a minimum 33 mil 1½" width.
- Table based on Table C2.1-1 AISI S213 Standard North American Standard for Cold-Formed Steel Framing — Lateral Design 2007 Edition with Supplement No. 1 and Commentary.

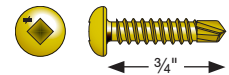
## CFS Connections

**Strong-Drive® PHSD FRAMING-TO-CFS Screw****Common Applications:**

- Cold-formed steel framing and sheet-steel sheathing to cold-formed steel

**Codes/Standards:** ASTM C1513 compliant

For more information, see p. 208, C-F-2019 Fastening Systems Catalog

**PHSD Screw — Cold-Formed Steel Member Connection Loads, Steel to Steel**

Size (in.)	Model No.	Nominal Dia. (in.)	Load Description	Reference Shear (lb.)			Reference Pull-Over (lb.)			Reference Pull-Out (lb.)		
				Steel Thickness: [mil (ga.)]			Steel Thickness: [mil (ga.)]			Steel Thickness: [mil (ga.)]		
				27 (22)	33 (20)	43 (18)	27 (22)	33 (20)	43 (18)	27 (22)	33 (20)	43 (18)
#8-18 x 3/4	PHSD34S0818	0.164	ASD load	181	235	305	220	345	390	67	125	133
			LRFD load	290	375	490	350	550	620	107	200	213
			Nominal strength	410	590	765	540	845	955	164	310	325

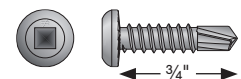
1. Screws and screw connections have been tested per AISI Standard Test Method S904 and S905. This screw is not recommended for 16 gauge and thicker steel. Provide a 1/8" diameter predrilled hole in 16 gauge and thicker steel, if this screw should be used.
2. The tabulated ASD and LRFD allowable loads for cold-formed steel (CFS) members are based on the lower of the screw strength or the strength of the screw in the connected members per AISI S100.
3. The safety factor is based on AISI S100-07.
4. The average ultimate/nominal values listed should not be used for design loads.
5. Values are based on CFS members with a minimum yield strength of  $F_y = 33$  ksi and tensile strength of  $F_u = 45$  ksi for 43 mil (18 ga.) to 27 mil (22 ga.), minimum yield strength of  $F_y = 50$  ksi and  $F_u = 65$  ksi for 54 mil (16 ga.) to 97 mil (12 ga.).
6. For design purposes, steel-sheet thicknesses are 0.0283" for 27 mil, 0.0346" for 33 mil, 0.0451" for 43 mil, 0.0566" for 54 mil, 0.0713" for 68 mil, and 0.1017" for 97 mil. The actual sheet thickness shall not be less than 95% of these design thicknesses as specified in AISI S100.
7. Screw diameters per AISI S200 General Provision Commentary Table D1.1.
8. Minimum required screw length is the lesser of 3/4" or the minimum length required for the screw to extend through the steel connection a minimum of three exposed threads per AISI S200 General Provisions Standard Section D1.3.
9. Screw head or washer diameter,  $d_w$  is 0.307".
10. The allowable load (ASD) values shown are not permitted to be increased for short-duration loads such as wind or earthquake loads.
11. The lower of the pull-over and pull-out allowable load should be used for tension design.
12. The tabulated shear values are based on the thinner steel member in connection. Steel thickness for both members must be in the range of 12–22 gauge.
13. See general load tables on p. 16 for screw strength.

**Strong-Drive® FPHSD FRAMING-TO-CFS Screw****Common Application:**

Cold-formed steel framing and sheet-steel sheathing to cold-formed steel

**Codes/Standards:** ASTM C1513 compliant, ICC-ES ESR-3006

For more information, see pp. 95 and 208, C-F-2019 Fastening Systems Catalog

**FPHSD — Cold-Formed Steel Member Connection Loads, Steel to Steel**

Size (in.)	Model No.	Nominal Dia. (in.)	Load Description	Reference Shear (lb.)							Reference Pull-Over (lb.)					Reference Pull-Out (lb.)					
				Steel Thickness: [mil (ga.)]							Steel Thickness: [mil (ga.)]					Steel Thickness: [mil (ga.)]					
				27 (22)	33 (20)	43 (18)	54 (16)	68 (14)	97 (12)	27 (22)	33 (20)	43 (18)	54 (16)	68 (14)	97 (12)	27 (22)	33 (20)	43 (18)	54 (16)	68 (14)	97 (12)
#10-16 x 3/4	FPHSD34S1016	0.190	ASD load	175	235	380	570	570	570	280	365	485	695	740	740	76	95	156	240	340	505
			LRFD load	280	375	605	855	855	855	445	585	775	1,110	1,110	1,110	123	151	250	380	545	805
			Nominal strength	395	535	860	1,305	1,305	1,305	685	895	1,190	1,705	2,215	2,215	190	230	385	585	840	1,235
#12-14 x 3/4	FPHSD34S1214	0.216	ASD load	205	260	410	610	610	240	330	430	630	840	1,125	76	95	159	240	345	530	
			LRFD load	330	420	650	975	975	975	390	530	685	1,005	1,340	1,690	123	151	255	385	550	855
			Nominal strength	485	610	930	1,385	1,385	1,385	595	815	1,050	1,540	2,060	2,065	190	230	390	590	845	1,295

1. Screws and connections have been tested per AISI Standard Method S904 and S905.
2. The tabulated ASD and LRFD allowable loads for cold-formed steel (CFS) members are based on the lower of the screw strength or the strength of the screw in the connected members per AISI S100.
3. Values are based on CFS members with a minimum yield strength of  $F_y = 33$  ksi and tensile strength of  $F_u = 45$  ksi for 43 mil (18 ga.) to 27 mil (22 ga.), minimum yield strength of  $F_y = 50$  ksi and  $F_u = 65$  ksi for 54 mil (16 ga.) to 97 mil (12 ga.).
4. For design purposes, steel sheet thicknesses are 0.0283" for 27 mil, 0.0346" for 33 mil, 0.0451" for 43 mil, 0.0566" for 54 mil, 0.0713" for 68 mil, and 0.1017" for 97 mil. The actual sheet thickness shall not be less than 95% of these design thicknesses as specified in AISI S100.
5. Screw diameters per AISI S200 General Provision Commentary Table D1.1.
6. Minimum required screw length is the lesser of 3/4" or the minimum length required for the screw to extend through the steel connection a minimum of three exposed threads per AISI S200 General Provisions Standard Section D1.3.
7. Screw head  $d_w$  for #10 and #12 screws is 0.357".
8. The allowable load (ASD) values shown are not permitted to be increased for short-duration loads such as wind or earthquake loads.
9. The lower of the pull-over and pull-out allowable load should be used for tension design.
10. The tabulated shear values are based on the thinner steel member in connection. Steel thickness for both members must be in the range of 12–22 gauge.
11. See the general load tables on p. 16 for screw strength.