

HDS® Framing System

HDS® FRAMING SYSTEM

Product code	Thickness			ksi	Depth (in)	Flange (in)	Return (in)	Double return (in)
	Gauge	Mils	Design thickness (in)					
HDS3	20	33	0.0346	33	3-5/8	3	1-1/16	3/4
					4	3	1-1/16	3/4
					6	3	2-1/4	3/4
					8	3	2-1/4	3/4
HDS3	18	43	0.0451	33	3-5/8	3	1-1/16	3/4
					4	3	1-1/16	3/4
					6	3	2-1/4	3/4
					8	3	2-1/4	3/4
HDS5	16	54	0.0566	50	3-5/8	3	1-1/16	3/4
					4	3	1-1/16	3/4
					6	3	2-1/4	3/4
					8	3	2-1/4	3/4
HDS5	14	68	0.0713	50	3-5/8	3	1-1/16	3/4
					4	3	1-1/16	3/4
					6	3	2-1/4	3/4
					8	3	2-1/4	3/4
HDS5	12	97	0.1017	50	3-5/8	3	1-1/16	3/4
					4	3	1-1/16	3/4
					6	3	2-1/4	3/4
					8	3	2-1/4	3/4

Standard material coating is CP60 per ASTM C955; G90 available.



HDS® SECTION PROPERTIES

Web size (in)	Gauge	Mils	Fy (ksi)	Min. delivered thickness (in)	Unperforated Section Properties									Torsional Properties				
					Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in)	I _y (in ⁴)	xbar (in)	S _y (in ³)	r _y (in)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in)	R _o (in)	Beta
3-5/8	20	33	33	0.0329	0.445	1.52	0.934	0.515	1.448	0.631	1.426	0.405	1.190	0.178	4.624	-3.485	3.957	0.224
	18	43	33	0.0428	0.574	1.95	1.198	0.661	1.444	0.805	1.416	0.516	1.184	0.389	5.759	-3.483	3.952	0.223
	16	54	50	0.0538	0.715	2.43	1.483	0.818	1.441	0.990	1.406	0.632	1.177	0.764	6.894	-3.480	3.946	0.222
	14	68	50	0.0677	0.888	3.02	1.829	1.009	1.436	1.211	1.392	0.770	1.168	1.503	8.151	-3.476	3.938	0.221
4	12	97	50	0.0966	1.239	4.22	2.520	1.390	1.426	1.645	1.367	1.039	1.152	4.271	10.420	-3.449	3.906	0.220
	20	33	33	0.0329	0.458	1.56	1.175	0.588	1.601	0.656	1.386	0.411	1.196	0.183	5.146	-3.422	3.963	0.254
	18	43	33	0.0428	0.591	2.01	1.509	0.754	1.598	0.838	1.376	0.523	1.190	0.400	6.425	-3.418	3.956	0.254
	16	54	50	0.0538	0.736	2.50	1.869	0.934	1.594	1.031	1.365	0.641	1.183	0.787	7.715	-3.414	3.949	0.253
6	14	68	50	0.0677	0.914	3.11	2.307	1.154	1.588	1.261	1.351	0.782	1.175	1.548	9.159	-3.409	3.940	0.251
	12	97	50	0.0966	1.277	4.35	3.183	1.592	1.579	1.714	1.326	1.056	1.158	4.403	11.787	-3.379	3.905	0.251
	20	33	33	0.0329	0.610	2.08	3.034	1.011	2.230	0.993	1.441	0.644	1.276	0.244	24.960	-3.636	4.452	0.333
	18	43	33	0.0428	0.788	2.68	3.907	1.302	2.226	1.273	1.433	0.824	1.271	0.533	31.427	-3.633	4.446	0.332
8	16	54	50	0.0538	0.984	3.35	4.856	1.619	2.222	1.573	1.424	1.016	1.265	1.052	38.080	-3.630	4.440	0.332
	14	68	50	0.0677	1.226	4.17	6.023	2.008	2.216	1.938	1.412	1.249	1.257	2.076	45.721	-3.626	4.432	0.331
	12	97	50	0.0966	1.722	5.86	8.380	2.793	2.206	2.662	1.390	1.707	1.243	5.936	60.160	-3.602	4.403	0.331
	20*	33	33	0.0329	0.679	2.31	6.134	1.533	3.005	1.122	1.294	0.665	1.285	0.272	33.350	-3.412	4.725	0.479
8	18	43	33	0.0428	0.878	2.99	7.909	1.977	3.001	1.439	1.286	0.851	1.280	0.594	42.201	-3.406	4.716	0.478
	16	54	50	0.0538	1.097	3.73	9.843	2.461	2.996	1.779	1.277	1.050	1.274	1.173	51.431	-3.399	4.706	0.478
	14	68	50	0.0677	1.369	4.66	12.230	3.058	2.989	2.193	1.265	1.291	1.266	2.317	62.225	-3.391	4.694	0.478
	12	97	50	0.0966	1.926	6.55	17.075	4.269	2.978	3.013	1.243	1.766	1.251	6.637	82.848	-3.360	4.661	0.480

*Indicates that h/t exceeds 200. Web stiffeners are required at bearing points. No holes in the web are permitted.

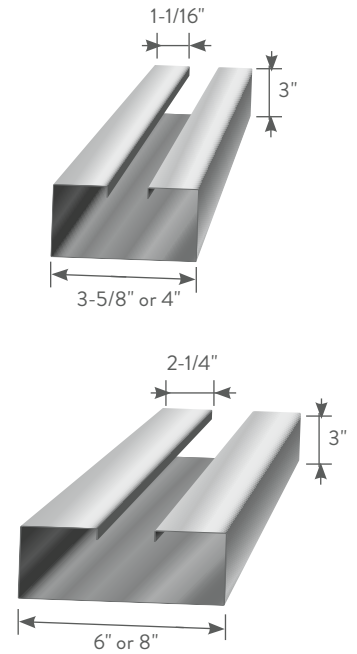
Notes:

- 1 SI: 1" = 25.4 mm
- 2 I_x = Gross Moment Of Inertia about x-axis.
- 3 S_x = Gross Section Modulus about x-axis.
- 4 r_x = Gross Radius of Gyration about x-axis.
- 5 I_y = Gross Moment Of Inertia about y-axis.
- 6 xbar = The distance from the web centerline to the center of gravity.
- 7 S_y = Gross Section Modulus about y-axis.
- 8 r_y = Gross Radius of Gyration about y-axis.
- 9 J = St. Venant Torsion Constant.
- 10 C_w = Warping Torsion Constant.
- 11 x_o = Distance from shear center to the centroid along the principal x-axis.
- 12 r_o = Polar Radius of Gyration about the centroidal principal axis.
- 13 Beta = 1 - (X_o/r_o)²
- 14 Stiffening Lip = 0.75" for all web sizes.

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HDS® EFFECTIVE PROPERTIES AND CAPACITIES

Web size (in)	Gauge	Mils	Fy (ksi)	Min. delivered thickness (in)	Other Properties					
					Lu (in)	Unperf'd Vx (kips)	Perf'd Vx (kips)	Vy (kips)	Px (kips)	Py (kips)
3-5/8	20	33	33	0.0329	103	1.03	0.54	2.05	0.29	0.38
	18	43	33	0.0428	102	1.74	0.68	3.09	0.46	0.61
	16	54	50	0.0538	82	3.38	1.02	5.77	1.02	1.38
	14	68	50	0.0677	82	4.37	1.00	7.06	1.51	2.08
	12	97	50	0.0966	81	6.05	0.92	9.71	1.97	4.00
4	20	33	33	0.0329	100	0.97	0.60	2.05	0.29	0.38
	18	43	33	0.0428	99	1.74	0.81	3.09	0.45	0.61
	16	54	50	0.0538	80	3.38	1.22	5.77	1.01	1.38
	14	68	50	0.0677	79	4.87	1.36	7.06	1.50	2.08
	12	97	50	0.0966	79	6.76	1.26	9.71	1.96	4.00
6	20	33	33	0.0329	125	0.63	0.63	2.05	0.27	0.38
	18	43	33	0.0428	124	1.41	1.24	3.09	0.43	0.61
	16	54	50	0.0538	100	2.83	1.95	5.77	0.97	1.38
	14	68	50	0.0677	100	5.34	2.88	7.06	1.44	2.08
	12	97	50	0.0966	98	10.58	3.90	9.71	1.89	4.00
8	20*	33	33	0.0329	113	0.47	—	2.05	0.00	0.38
	18	43	33	0.0428	112	1.05	1.05	3.09	0.27	0.61
	16	54	50	0.0538	90	2.09	2.09	5.77	0.62	1.38
	14	68	50	0.0677	90	4.21	3.36	7.06	0.94	2.08
	12	97	50	0.0966	89	10.88	5.99	9.71	1.84	4.00



HDS EFFECTIVE PROPERTIES AND CAPACITIES

Web size (in)	Gauge	Mils	Fy (ksi)	Min. delivered thickness (in)	Unperforated Bending Properties						Perforated Bending Properties						Eff. Moment of Inertia		
					Sxe (in ²)	Mxa (in-lb)	Web in Ten.		Web in Comp.		Sxe (in ²)	Mxa (in-lb)	Web in Ten.		Web in Comp.		Ixe (in ⁴)	Web in ten. Iye (in ⁴)	Web in comp. Iye (in ⁴)
							Sye (in ²)	Mya (in-lb)	Sye (in ²)	Mya (in-lb)			Sye (in ²)	Mya (in-lb)	Sye (in ²)	Mya (in-lb)			
3-5/8	20	33	33	0.0329	0.397	7846	0.401	7917	0.294	5814	0.367	7247	0.313	6192	0.243	4804	0.851	0.631	0.538
	18	43	33	0.0428	0.565	11165	0.516	11703	0.425	8401	0.540	10674	0.400	9080	0.342	6753	1.161	0.805	0.741
	16	54	50	0.0538	0.711	21290	0.632	21936	0.535	16019	0.683	20464	0.492	17084	0.429	12844	1.449	0.990	0.921
	14	68	50	0.0677	0.958	28672	0.770	27606	0.733	21944	0.939	28127	0.603	21607	0.572	17117	1.829	1.211	1.194
	12	97	50	0.0966	1.390	45805	1.039	39444	1.039	33711	1.375	45285	0.820	31127	0.820	26602	2.520	1.645	1.645
4	20	33	33	0.0329	0.456	9011	0.406	8025	0.296	5854	0.415	8199	0.344	6805	0.246	4853	1.074	0.656	0.542
	18	43	33	0.0428	0.648	12805	0.523	11874	0.430	8490	0.613	12113	0.440	9985	0.347	6866	1.463	0.838	0.750
	16	54	50	0.0538	0.816	24420	0.641	22263	0.541	16198	0.776	23240	0.542	18805	0.437	13079	1.827	1.031	0.933
	14	68	50	0.0677	1.096	32820	0.782	28027	0.745	22312	1.069	31998	0.664	23811	0.588	17616	2.307	1.261	1.216
	12	97	50	0.0966	1.592	52437	1.056	40069	1.053	31517	1.577	51966	0.905	34366	0.905	29163	3.183	1.714	1.714
6	20	33	33	0.0329	0.769	15192	0.532	10508	0.329	6505	0.769	15192	0.514	10153	0.275	5434	2.823	0.954	0.694
	18	43	33	0.0428	1.150	22733	0.762	16155	0.483	9535	1.150	22733	0.697	14768	0.394	7792	3.797	1.273	0.982
	16	54	50	0.0538	1.449	43377	0.927	29898	0.610	18261	1.449	43377	0.865	27897	0.498	14913	4.753	1.573	1.229
	14	68	50	0.0677	1.925	57642	1.226	40261	0.854	25573	1.925	57642	1.078	35400	0.686	20533	6.023	1.938	1.645
	12	97	50	0.0966	2.793	92027	1.707	57870	1.429	42793	2.793	92027	1.484	50318	1.122	33607	8.380	2.662	2.522
8	20*	33	33	0.0329	1.084	21420	0.548	10829	0.333	6570	—	—	—	—	—	—	5.805	1.076	0.703
	18	43	33	0.0428	1.729	34161	0.787	16681	0.490	9679	1.729	34161	0.770	16307	0.400	7896	7.723	1.439	1.001
	16	54	50	0.0538	2.208	66094	0.956	30850	0.620	18549	2.208	66094	0.935	30174	0.505	15122	9.662	1.779	1.254
	14	68	50	0.0677	2.946	88217	1.265	41554	0.874	26153	2.946	88217	1.237	40635	0.700	20957	12.230	2.193	1.690
	12	97	50	0.0966	4.269	140636	1.766	59876	1.486	44481	4.269	140636	1.724	58451	1.164	34855	17.075	3.013	2.631

*Indicates that the h/t exceeds 200. Web stiffeners are required at bending points. No holes in the web are permitted.

Notes:

- 1 Sxe = Effective Section Modulus about x-axis.
- 2 Mxa = Allowable Moment about x-axis.
- 3 Sye = Effective Section Modulus about y-axis.
- 4 Mya = Allowable Moment about y-axis.
- 5 Ixe = Effective Moment Of Inertia about x-axis for deflection calculations.
- 6 Iye = Effective Moment Of Inertia about y-axis for deflection calculations.
- 7 Lu = Maximum unbraced length to attain Mxa.
- 8 Vx = Allowable Shear for bending about x-axis.
- 9 Vy = Allowable Shear for bending about y-axis.
- 10 Px = For members having a web depth of less than 8" and also having a thickness less than 97mil, allowable web crippling per AISI Standard for CFS Wall Stud Design 2004. This value assumes the web resists web crippling and the HDS is nested in track having the same thickness. For other members, allowable end one flange web crippling per AISI NASPEC, 2001 w/2004 supplement. Both calculation procedures use a bearing length of 1-1/4".
- 11 Py = Allowable end one flange web crippling per AISI NASPEC, 2001 w/2004 supplement. This value assumes 2 flanges resist web crippling for a bearing length of 1-1/4".
- 12 Unless otherwise noted, properties are computed according to the AISI NASPEC, 2001 w/2004 supplement.
- 13 Perforated properties are based on the standard 1-1/2" x 4" oval ClarkDietrich web knockout. The knockout is centered about the web, and is spaced no less than 24" o.c.
- 14 Stiffening Lip = 3/4" for all web sizes.

HDS® Framing System Tables

INTERIOR SPAN CHART

ALLOWABLE HDS® HEADER SPANS FOR WINDOW AND DOOR OPENINGS

Dead Load = 10psf & Wind Load = 5psf (Dead Load Deflection limited to L/240 or a maximum of 0.5 in.)

Wall height (ft)	Member size (in)	Gauge	Mils	Fy (ksi)	Deflection												
					240				360				600				
					Opening Height (ft)												
					8	10	12	14	8	10	12	14	8	10	12	14	
9	3-5/8	20	33	33	11' 0"	—	—	—	10' 4"	—	—	—	9' 6"	—	—	—	
		18	43	33	11' 6"	—	—	—	10' 10"	—	—	—	10' 0"	—	—	—	
		16	54	50	11' 11"	—	—	—	11' 3"	—	—	—	10' 4"	—	—	—	
		14	68	50	12' 3"	—	—	—	11' 7"	—	—	—	10' 9"	—	—	—	
		12	97	50	12' 10"	—	—	—	12' 2"	—	—	—	11' 3"	—	—	—	
		20	33	33	12' 12"	—	—	—	12' 4"	—	—	—	11' 6"	—	—	—	
	6	18	43	33	13' 5"	—	—	—	12' 10"	—	—	—	11' 12"	—	—	—	
		16	54	50	13' 9"	—	—	—	13' 2"	—	—	—	12' 4"	—	—	—	
		14	68	50	14' 1"	—	—	—	13' 6"	—	—	—	12' 9"	—	—	—	
		12	97	50	14' 5"	—	—	—	13' 11"	—	—	—	13' 3"	—	—	—	
		20	33	33	9' 2"	11' 12"	—	—	9' 2"	11' 3"	—	—	9' 2"	10' 5"	—	—	
		18	43	33	10' 6"	12' 7"	—	—	10' 6"	11' 9"	—	—	9' 11"	10' 11"	—	—	
11	3-5/8	16	54	50	11' 11"	13' 0"	—	—	11' 2"	12' 2"	—	—	10' 4"	11' 3"	—	—	
		14	68	50	12' 3"	13' 6"	—	—	11' 7"	12' 8"	—	—	10' 9"	11' 8"	—	—	
		12	97	50	12' 10" *	14' 2"	—	—	12' 2"	13' 4"	—	—	11' 3"	12' 3"	—	—	
		20	33	33	12' 0"	14' 5"	—	—	12' 0"	13' 7"	—	—	11' 6"	12' 6"	—	—	
		18	43	33	12' 11" *	15' 0"	—	—	12' 10" *	14' 2"	—	—	11' 12"	13' 1"	—	—	
		16	54	50	13' 7" *	15' 6"	—	—	13' 2" *	14' 8"	—	—	12' 4"	13' 7"	—	—	
	6	14	68	50	14' 1" *	15' 11"	—	—	13' 6" *	15' 2"	—	—	12' 9" *	14' 1"	—	—	
		12	97	50	14' 5" *	16' 7"	—	—	13' 11" *	15' 10"	—	—	13' 3" *	14' 9"	—	—	
		20	33	33	7' 7"	9' 2"	11' 11"	—	7' 7"	9' 2"	11' 11"	—	7' 7"	9' 2"	10' 6"	—	
		18	43	33	8' 8" *	10' 5"	13' 6"	—	8' 8" *	10' 5"	12' 8"	—	8' 8" *	10' 5"	11' 4"	—	
		16	54	50	10' 8" *	12' 2"	13' 11"	—	10' 8" *	12' 2"	13' 1"	—	10' 3" *	11' 1"	12' 2"	—	
		14	68	50	11' 3" *	12' 9" *	14' 5"	—	11' 3" *	12' 7" *	13' 7"	—	10' 8" *	11' 7"	12' 7"	—	
13	3-5/8	12	97	50	12' 1" *	13' 9" *	15' 2"	—	12' 1" *	13' 3" *	14' 3"	—	11' 3" *	12' 3"	13' 2"	—	
		20	33	33	9' 11" *	11' 10"	15' 6"	—	9' 11" *	11' 10"	14' 6"	—	9' 11" *	11' 10"	13' 5"	—	
		18	43	33	11' 4" *	12' 11" *	16' 2"	—	11' 4" *	12' 11" *	15' 2"	—	11' 4" *	12' 11" *	14' 0"	—	
		16	54	50	11' 12" *	13' 7" *	16' 9"	—	11' 12" *	13' 7" *	15' 9"	—	11' 12" *	13' 7" *	14' 6"	—	
		14	68	50	12' 8" *	14' 4" *	17' 4"	—	12' 8" *	14' 4" *	16' 4"	—	12' 8" *	14' 1" *	15' 1"	—	
		12	97	50	13' 8" *	15' 6" *	18' 2"	—	13' 8" *	15' 6" *	17' 2"	—	13' 3" *	14' 9" *	15' 11"	—	
	15	3-5/8	20	33	33	6' 7" *	7' 7"	9' 2"	11' 11"	6' 7" *	7' 7"	9' 2"	11' 11"	6' 7" *	7' 7"	9' 2"	10' 6"
			18	43	33	7' 7" *	8' 8" *	10' 5"	13' 7"	7' 7" *	8' 8" *	10' 5"	12' 12"	7' 7" *	8' 8" *	10' 5"	11' 4"
			16	54	50	9' 9" *	10' 8" *	12' 2"	14' 10"	9' 9" *	10' 8" *	12' 2"	13' 9"	9' 9" *	10' 8" *	11' 5"	12' 0"
			14	68	50	10' 4" *	11' 3" *	12' 9" *	15' 4"	10' 4" *	11' 3" *	12' 9" *	14' 6"	10' 4" *	11' 3" *	12' 3" *	12' 9"
			12	97	50	11' 2" *	12' 1" *	13' 9" *	16' 1"	11' 2" *	12' 1" *	13' 9" *	15' 2"	11' 2" *	12' 1" *	12' 12" *	13' 11"
			20	33	33	8' 7" *	9' 10" *	11' 10"	15' 4"	8' 7" *	9' 10" *	11' 10"	15' 4"	8' 7" *	9' 10" *	11' 10"	14' 4"
6		18	43	33	10' 1" *	11' 4" *	12' 11" *	16' 12"	10' 1" *	11' 4" *	12' 11" *	16' 1"	10' 1" *	11' 4" *	12' 11" *	14' 11"	
		16	54	50	11' 0" *	11' 12" *	13' 7" *	17' 9" *	11' 0" *	11' 12" *	13' 7" *	16' 8"	11' 0" *	11' 12" *	13' 7" *	15' 5"	
		14	68	50	11' 7" *	12' 8" *	14' 4" *	18' 5" *	11' 7" *	12' 8" *	14' 4" *	17' 4"	11' 7" *	12' 8" *	14' 4" *	15' 12"	
		12	97	50	12' 7" *	13' 8" *	15' 6" *	19' 5" *	12' 7" *	13' 8" *	15' 6" *	18' 3" *	12' 7" *	13' 8" *	15' 6" *	16' 10"	

Notes:

- 1 Tabulated values are for a single HDS header installed with standard HDS clips. Each head-to-jamb connection requires (4) #10-16 screws to the header, and (4) #10-16 screws to the jamb. Tabulated values marked with an asterisk will require special engineering of the header-to-jamb connections.
- 2 Tabulated values include a connection check assuming 25 gauge jamb studs.
- 3 HDS header to be installed with open side facing up.
- 4 HDS properties computed in accordance with AISI NASPEC 2001.

EXTERIOR SPAN CHART

ALLOWABLE HDS® HEADER SPANS FOR WINDOW AND DOOR OPENINGS																
Dead Load = 12psf & Wind Load = 25psf (Dead Load Deflection limited to L/240 or a maximum of 0.5 in.)																
Wall height (ft)	Member size (in)	Gauge	Mils	Fy (ksi)	Deflection											
					240				360				600			
					Opening Height (ft)											
9	3-5/8	20	33	33	7' 5"	—	—	—	7' 5"	—	—	—	7' 5"	—	—	
		18	43	33	8' 6"	—	—	—	8' 6"	—	—	—	8' 3"	—	—	
		16	54	50	9' 10"	—	—	—	9' 3"	—	—	—	8' 6"	—	—	
		14	68	50	10' 2"	—	—	—	9' 7"	—	—	—	8' 10"	—	—	
		12	97	50	10' 9"	—	—	—	10' 1"	—	—	—	9' 3"	—	—	
		20	33	33	9' 7"	—	—	—	9' 7"	—	—	—	9' 5"	—	—	
	6	18	43	33	11' 5"	—	—	—	10' 9"	—	—	—	9' 11"	—	—	
		16	54	50	11' 9"	—	—	—	11' 1"	—	—	—	10' 3"	—	—	
		14	68	50	12' 2"	—	—	—	11' 6"	—	—	—	10' 8"	—	—	
		12	97	50	12' 9"	—	—	—	12' 1"	—	—	—	11' 2"	—	—	
		20	33	33	6' 1"	7' 5"	—	—	6' 1"	7' 5"	—	—	6' 1"	7' 5"	—	
		18	43	33	7' 0"	8' 6"	—	—	7' 0"	8' 6"	—	—	7' 0"	8' 3"	—	
11	3-5/8	16	54	50	9' 2"	10' 9"	—	—	9' 1"	9' 11"	—	—	8' 3"	8' 8"	—	
		14	68	50	10' 2"	11' 1"	—	—	9' 6"	10' 5"	—	—	8' 7"	9' 3"	—	
		12	97	50	10' 8"	11' 8"	—	—	10' 0"	10' 11"	—	—	9' 2"	10' 2"	—	
		20	33	33	7' 11"	9' 6"	—	—	7' 11"	9' 6"	—	—	7' 11"	9' 6"	—	
		18	43	33	9' 4"	11' 1"	—	—	9' 4"	11' 1"	—	—	9' 4"	10' 9"	—	
		16	54	50	11' 9"	12' 11"	—	—	11' 1"	12' 1"	—	—	10' 3"	11' 2"	—	
	6	14	68	50	12' 2"	13' 4"	—	—	11' 6"	12' 7"	—	—	10' 7"	11' 7"	—	
		12	97	50	12' 9"	14' 1"	—	—	12' 1"	13' 3"	—	—	11' 2"	12' 2"	—	
		20	33	33	5' 3"	6' 1"	7' 5"	—	5' 3"	6' 1"	7' 5"	—	5' 3"	6' 1"	7' 5"	
		18	43	33	6' 1"	7' 0"	8' 6"	—	6' 1"	7' 0"	8' 6"	—	6' 1"	7' 0"	8' 3"	
		16	54	50	8' 0"	9' 2"	10' 9"	—	8' 0"	9' 2"	9' 11"	—	7' 7"	8' 1"	8' 8"	
		14	68	50	9' 0"	10' 3"	11' 9"	—	9' 0"	9' 11"	10' 7"	—	8' 4"	8' 8"	9' 3"	
13	3-5/8	12	97	50	10' 7"	11' 6"	12' 7"	—	9' 11"	10' 9"	11' 6"	—	8' 12"	9' 5"	10' 1"	
		20	33	33	6' 11"	7' 11"	9' 6"	—	6' 11"	7' 11"	9' 6"	—	6' 11"	7' 11"	9' 6"	
		18	43	33	8' 1"	9' 4"	11' 0"	—	8' 1"	9' 4"	11' 0"	—	8' 1"	9' 4"	11' 0"	
		16	54	50	10' 10"	12' 2"	13' 10"	—	10' 10"	11' 12"	12' 12"	—	10' 2"	10' 12"	11' 10"	
		14	68	50	12' 1"	13' 4"	14' 4"	—	11' 6"	12' 6"	13' 5"	—	10' 7"	11' 5"	12' 6"	
		12	97	50	12' 9"	14' 0"	15' 1"	—	12' 1"	13' 2"	14' 2"	—	11' 2"	12' 1"	13' 1"	
	6	20	33	33	4' 8"	5' 3"	6' 1"	7' 5"	4' 8"	5' 3"	6' 1"	7' 5"	4' 8"	5' 3"	6' 1"	7' 5"
		18	43	33	5' 5"	6' 1"	7' 0"	8' 6"	5' 5"	6' 1"	7' 0"	8' 6"	5' 5"	6' 1"	7' 0"	8' 3"
		16	54	50	7' 2"	8' 0"	9' 2"	10' 9"	7' 2"	8' 0"	9' 2"	9' 11"	7' 2"	7' 7"	8' 1"	8' 8"
		14	68	50	8' 1"	9' 0"	10' 3"	11' 9"	8' 1"	9' 0"	9' 11"	10' 7"	7' 9"	8' 2"	8' 8"	9' 3"
		12	97	50	9' 6"	10' 6"	11' 10"	12' 9"	9' 6"	10' 5"	10' 10"	11' 6"	8' 9"	8' 11"	9' 5"	10' 1"
		20	33	33	6' 2"	6' 11"	7' 11"	9' 6"	6' 2"	6' 11"	7' 11"	9' 6"	6' 2"	6' 11"	7' 11"	9' 6"
15	6	18	43	33	7' 3"	8' 1"	9' 4"	11' 0"	7' 3"	8' 1"	9' 4"	11' 0"	7' 3"	8' 1"	9' 4"	11' 0"
		16	54	50	9' 8"	10' 8"	12' 1"	13' 11"	9' 8"	10' 8"	12' 1"	13' 6"	9' 8"	10' 8"	11' 2"	11' 10"
		14	68	50	10' 11"	12' 0"	13' 5"	15' 3"	10' 11"	12' 0"	13' 3"	14' 5"	10' 7"	11' 4"	11' 11"	12' 7"
		12	97	50	12' 0"	13' 1"	14' 10"	15' 12"	12' 0"	13' 1"	14' 0"	15' 1"	11' 2"	12' 0"	12' 10"	13' 8"

Notes:

- 1 Tabulated values are for a single HDS header installed with standard HDSC clips. Each head-to-jamb connection requires (4) #10-16 screws to the header, and (4) #10-16 screws to the jamb. Tabulated values marked with an asterisk will require special engineering of the header-to-jamb connections.
- 2 Deflections are computed using 0.7 times the components and cladding wind load per Section B1 of the AISI Standard for Cold-Formed Steel Framing—Wall Design. Note that the 0.7 factor is not used for the interior 5psf loading condition.
- 3 Unless connections are engineered separately, jambs must be the same gauge and strength as the header.
- 4 HDS header to be installed with open side facing up.
- 5 HDS properties computed in accordance with AISI NASPEC 2001.

HDS® Framing System Tables

ALLOWABLE OPENING WIDTHS FOR SINGLE HDS® FRAMING USED AS JAMB STUDS

Wall Height (ft)	Member Size (in)	Gauge	Mils (in)	F _y (ksi)	5psf Deflection						25psf Deflection						35psf Deflection					
					240		360		600		240		360		600		240		360		600	
					Sill Height						Sill Height						Sill Height					
					2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
9	3-5/8	20	33	33	16' 0"	16' 0"	16' 0"	16' 0"	12' 10"	11' 2"	3' 3"	3' 0"	3' 3"	3' 0"	—	—	—	—	—	—		
		18	43	33	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	6' 4"	5' 4"	6' 4"	5' 4"	3' 4"	3' 1"	3' 7"	3' 4"	3' 7"	3' 4"		
		16	54	50	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	13' 6"	11' 6"	9' 10"	8' 8"	4' 11"	4' 3"	9' 3"	7' 9"	6' 2"	5' 6"		
		14	68	50	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	14' 11"	13' 2"	11' 6"	6' 9"	5' 12"	11' 2"	10' 3"	8' 7"		
		12	97	50	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	10' 5"	9' 1"	12' 1"	12' 5"	12' 1"		
		20	33	33	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	8' 9" *	7' 7" *	8' 9" *	7' 7" *	8' 9" *	7' 7" *	4' 0" *	4' 11" *	4' 0" *		
	6	18	43	33	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	15' 8" *	13' 2" *	15' 8" *	13' 2" *	15' 8" *	13' 2" *	10' 9" *	8' 10" *	10' 9" *			
		16	54	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	19' 3"	20' 0" *	17' 9" *	20' 0" *			
		14	68	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"			
		12	97	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"			
		20	33	33	16' 0"	16' 0"	12' 1"	10' 6"	5' 8"	5' 7"	—	—	—	—	—	—	—	—	—	—		
		18	43	33	16' 0"	16' 0"	16' 0"	15' 3"	9' 2"	8' 2"	3' 3"	2' 12"	2' 11"	2' 8"	—	—	—	—	—	—		
11	3-5/8	16	54	50	16' 0"	16' 0"	16' 0"	16' 0"	12' 5"	10' 9"	6' 0"	6' 12"	4' 2"	3' 10"	—	—	4' 7"	4' 4"	—			
		14	68	50	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	14' 3"	10' 10"	9' 6"	5' 11"	5' 9"	2' 8"	—	6' 10"	6' 1"	3' 6"			
		12	97	50	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	16' 0"	13' 2"	13' 1"	9' 7"	8' 6"	4' 5"	4' 1"	9' 1"	8' 11"	5' 9"			
		20	33	33	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	5' 6" *	5' 5" *	5' 6" *	5' 5" *	5' 3" *	5' 1" *	3' 3" *	2' 11" *	3' 3" *			
		18	43	33	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	10' 12" *	9' 5" *	10' 12" *	9' 5" *	8' 3" *	7' 5" *	6' 6" *	4' 0" *	6' 6" *			
		16	54	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0" *	18' 10" *	20' 0" *	18' 3" *	11' 5"	9' 11"	15' 4" *	12' 12" *	14' 5" *			
	6	14	68	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	15' 7"	13' 3"	20' 0" *	18' 4"	19' 5" *			
		12	97	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	19' 6"	20' 0"	20' 0"	20' 0"			
		20	33	33	10' 8"	9' 8"	5' 9"	5' 6"	2' 8"	—	—	—	—	—	—	—	—	—	—			
		18	43	33	16' 0"	14' 4"	9' 10"	8' 6"	4' 3"	4' 1"	—	—	—	—	—	—	—	—	—	—		
		16	54	50	16' 0"	16' 0"	12' 11"	11' 4"	5' 11"	5' 8"	3' 7"	3' 5"	—	—	—	—	—	—	—	—		
		14	68	50	16' 0"	16' 0"	16' 0"	15' 2"	8' 8"	6' 0"	5' 1"	4' 10"	2' 9"	2' 7"	—	—	3' 1"	2' 11"	—	—		
13	3-5/8	12	97	50	16' 0"	16' 0"	16' 0"	16' 0"	13' 9"	11' 12"	8' 4"	6' 0"	4' 6"	4' 3"	—	—	4' 12"	4' 9"	2' 8"			
		20	33	33	20' 0" *	20' 0" *	20' 0" *	20' 0" *	16' 2"	13' 10"	3' 3" *	3' 1" *	3' 3" *	3' 1" *	—	—	—	—	—	—		
		18	43	33	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	19' 8"	6' 2" *	5' 11" *	6' 2" *	5' 11" *	3' 10"	3' 8"	3' 9" *	3' 6" *	3' 9" *			
		16	54	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	17' 9" *	14' 9" *	11' 9"	10' 5"	5' 5"	5' 2"	10' 4" *	9' 5" *	6' 12"			
		14	68	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	16' 6"	14' 1"	7' 8"	7' 6"	16' 6" *	14' 0"	10' 1"		
		12	97	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	12' 9"	11' 3"	20' 0"	20' 0"	16' 4"		
	6	20	33	33	5' 6"	5' 4"	3' 1"	2' 11"	—	—	—	—	—	—	—	—	—	—	—	—		
		18	43	33	8' 8"	8' 4"	4' 10"	4' 8"	—	—	—	—	—	—	—	—	—	—	—	—		
		16	54	50	12' 3"	11' 3"	6' 7"	6' 4"	3' 2"	3' 0"	—	—	—	—	—	—	—	—	—	—		
		14	68	50	16' 0"	15' 4"	9' 4"	9' 2"	4' 5"	4' 3"	2' 8"	2' 7"	—	—	—	—	—	—	—	—		
		12	97	50	16' 0"	16' 0"	15' 7"	13' 8"	7' 0"	6' 9"	4' 4"	4' 2"	—	—	—	—	2' 7"	—	—	—		
		20	33	33	20' 0" *	20' 0" *	18' 6" *	15' 10"	8' 3"	7' 11"	—	—	—	—	—	—	—	—	—	—		
15	3-5/8	18	43	33	20' 0"	20' 0"	20' 0"	20' 0"	13' 3"	11' 12"	4' 0" *	3' 11" *	4' 0" *	3' 11" *	—	—	—	—	—			
		16	54	50	20' 0"	20' 0"	20' 0"	20' 0"	18' 9"	16' 1"	11' 3" *	10' 2"	5' 12"	5' 10"	2' 10"	2' 9"	6' 3"	6' 1"	3' 9"			
		14	68	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	16' 2" *	14' 2"	8' 6"	8' 2"	4' 1"	3' 11"	9' 5"	9' 3"	5' 3"			
		12	97	50	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	20' 0"	14' 5"	12' 10"	6' 6"	6' 3"	16' 0"	14' 0"	8' 5"			
		20	33	33	5' 6"	5' 4"	3' 1"	2' 11"	—	—	—	—	—	—	—	—	—	—	—	—		
		18	43	33	8' 8"	8' 4"	4' 10"	4' 8"	—	—	—	—	—	—	—	—	—	—	—	—		

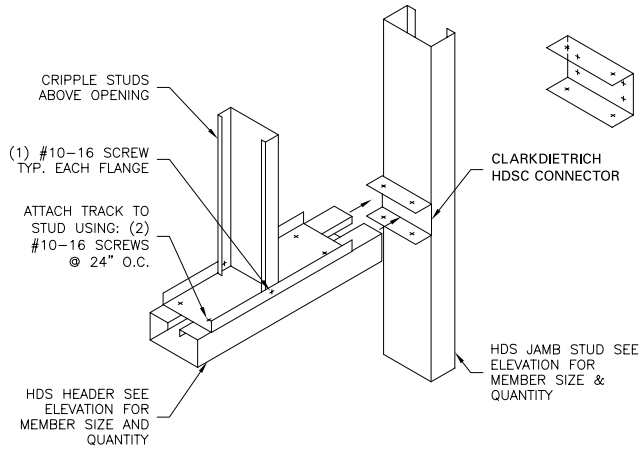
*Depending on the actual window width versus the tabulated window width, cells marked with an * (asterisk) may require an end connection that will prevent web crippling. Web crippling is computed in accordance with the AISI Standard for CFS Wall Stud Design 2004. End track must have a minimum thickness equal to the jamb stud.

Notes:

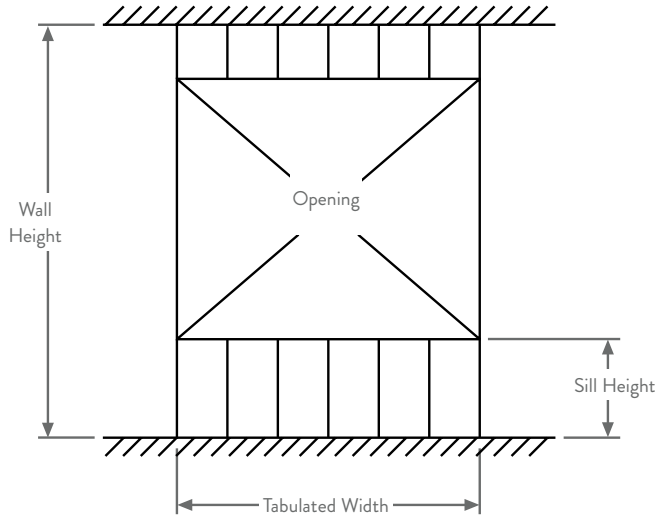
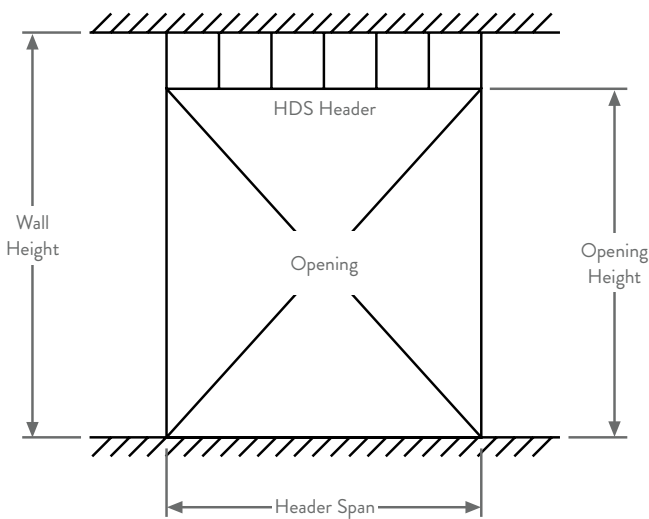
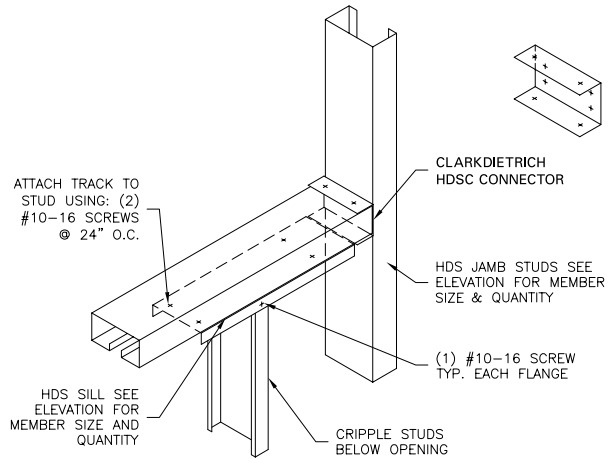
- 1 The opening is centered vertically about the wall height.
- 2 The assumed stud spacing adjacent to the opening is 16" o.c. or less.
- 3 The tabulated values assume a single HDS member is used at each jamb stud.
- 4 The tabulated values are limited to 16' for 3-5/8" walls and 20' for 6" walls. For wider openings or other conditions, contact ClarkDietrich at 888.437.3244.
- 5 The tabulated values are based on an unbraced length for bending of 6'.
- 6 Deflections are computed using 0.7 times the components and cladding wind load per Section B1 of the AISI Standard for Cold-Formed Steel Framing—Wall Design. Note that the 0.7 factor is not used for the interior 5psf loading condition.
- 7 HDS properties computed in accordance with the 2001 AISI NASPEC.
- 8 Table not valid for openings in load-bearing walls.

HDS® Framing Details

HDS® HEADER CONNECTIONS



HDS SILL CONNECTIONS



For use with the HDS® Framing System.

The ClarkDietrich HDS Framing System provides outstanding bending strength in two directions and superior axial strength. Plus, it reduces material, labor costs and installation time by up to 50%. The superior strength and carrying capacity of the HDS means higher performance with fewer members, like eliminating box beam headers, nesting track and stud for posts and jamps. It also means improved finish quality by eliminating excessive material and screw head buildup around doors and windows. The HDSC header bracket is a unique, prepunched clip that turns curtain wall header installation from a two-man job into a one-man job.