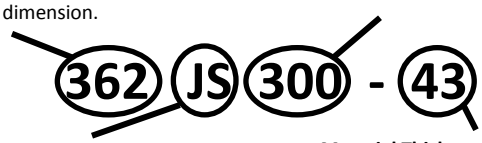
Jamb & Header System

Industry standard nomenclature is used to identify MBA's products. The Steel Framing Industry Association has established standard designation codes for structural studs and track. In each case, the identification starts with the measurement of the width of the member, followed by a letter (J = jamb stud and H = header) followed by the flange dimension. A hyphen is used to separate all of this from the thickness of the metal.

Member Depth:
(Example: 3-5/8" = 3.625"≈ ***362*** *x 1/100 inches)*
All member depths are taken in 1/100 inches. For all "T" sections member depth is the inside to inside dimension.

Flange Width:
(Example: 1-1/4" = 1.25" = ***125*** *x 1/100 inches)*
All flange widths are taken in 1/100 inches.



Style:
(Example: Jamb or Joist Section = ***J****)*
Relevant alpha characters utilized by the designation system are:
J = Jamb or Joist Sections **H** = Header Sections

Material Thickness:
(Example: 0.018 in." = ***18*** *mils; 1 mil = 1/100 in.)*
Material thickness is the minimum base metal thickness in mils. Minimum base metal thickness represents 95% of the design thickness.

Steel Thickness

Mils	Gauge	Thickness (in) Design	Thickness (in) Minimum[1]
43	18	0.0451	0.0428
54	16	0.0566	0.0538
68	14	0.0713	0.0677
97	12	0.1017	0.0966

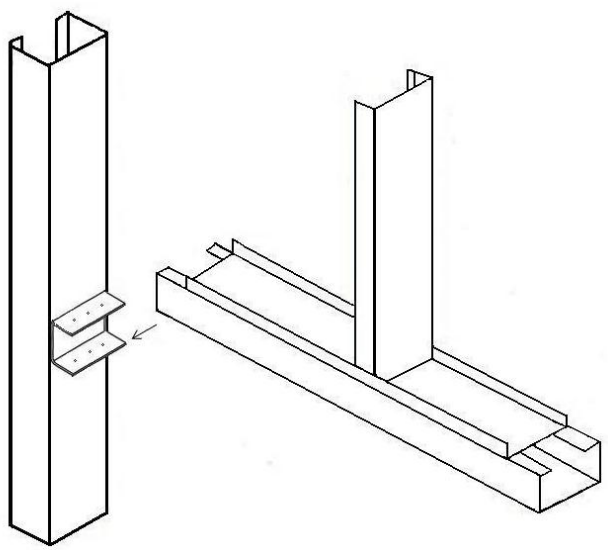
[1] Minimum Thickness represents 95% of the design thickness and is the minimum acceptable thickness delivered to the job site based on Section A3.4 of the 1996 AISI Specification.

Design Stiffening Lip Length

Section	Flange Width	Design Stiffening Lip Length (in)
JS300	3"	1.000
JS350	3.5"	1.000
HS300	3"	1.000
HS350	3.5"	1.000

Jamb Stud and Header Punchouts

Jamb studs and headers can be manufactured with punchouts to enable plumbing and wiring installation. The lowest punchout is centered 12" from the bottom and 24" or 48" o.c thereafter, with the final opening 12" minimum from the top. Care should be taken during installation to orient all jambs and headers in the same top-to-bottom direction.



General Notes

1. Physical properties and load tables have been calculated in conformance with the 2001 NASPEC for the Design of Cold-Formed Steel Structural Members, including the 2004 Supplement, and the IBC 2006, unless noted otherwise.
2. Structural framing members have a protective coating conforming to ASTM C 955.
3. Reference ASTM specification A 1003/A 1003 M table 1 for the universe of allowable coatings for light gauge steel framing.
4. All delivered material must be kept dry, preferably by being stored inside a building under a roof. If it is necessary to store material outside, it must be stacked off the ground, properly supported on a level platform, and fully protected from the weather. Reference ASTM C 754 section 8 and ASTM C 1007 section 4.

LEED Green Building Credits

MR Credit 2: Construction Waste Management – MBA steel framing is 100% recyclable.
MR Credit 4: Recycled Content – MBA steel framing is formed from no less than 25.5% post-consumer and 6.8% pre-consumer recycled content.
MR Credit 5: Regional Materials – MBA has manufacturing facilities in multiple states.

Section Properties

Section Properties Table Notes

1. Web depth for header section is equal to the nominal height plus 2 times design thickness plus the bend radius
2. Effective properties incorporate the strength increase from the cold work of forming as applicable per NASPEC section A7.2
3. Tabulated gross properties are based on the full, unreduced section away from punchouts
4. Effective properties of all 'J' and 'H' sections based on unpunched sections
5. For deflection calculations, use the effective moment of inertia
6. Where effective properties are listed for a section, both the Jamb and Header at 43mils(18ga) are at 33ksi and 54mils(16ga), 68mils(14ga), and 97mils(12ga) are at 50ksi for the effective properties

Jamb (J) Stud Section Properties

	Design	Gross Properties							Effective Properties				Torsional				
Section	Thickness (in)	Area (in^2)	Weight (lb/ft)	Ix (in^4)	Sx (in^3)	Rx (in)	Iy (in^4)	Ry (in)	Ix (in^4)	Sx (in^3)	Ma (in-k)	Vag (lb)	J^{x1000} (in^4)	Cw (in^6)	Xo (in)	Ro (in)	β
362JS300-43	0.0451	0.506	1.72	1.151	0.635	1.507	0.694	1.171	1.106	0.594	10.38	3014	0.343	3.035	-2.969	3.530	0.292
362JS300-54	0.0566	0.632	2.15	1.427	0.787	1.503	0.859	1.165	1.379	0.743	19.75	5682	0.675	3.724	-2.955	3.514	0.293
362JS300-68	0.0713	0.791	2.69	1.771	0.977	1.496	1.063	1.159	1.771	0.977	26.63	7078	1.341	4.556	-2.938	3.495	0.293
362JS300-97	0.1017	1.114	3.79	2.449	1.351	1.483	1.461	1.146	2.444	1.351	40.24	9865	3.840	6.115	-2.902	3.454	0.294
362JS350-54	0.0566	0.689	2.34	1.607	0.887	1.528	1.234	1.339	1.508	0.796	20.84	6743	0.736	5.289	-3.449	4.002	0.258
362JS350-68	0.0713	0.863	2.93	1.996	1.101	1.521	1.531	1.332	1.978	1.084	27.76	8415	1.462	6.484	-3.431	3.983	0.258
362JS350-97	0.1017	1.215	4.13	2.765	1.526	1.508	2.113	1.319	2.765	1.526	41.35	11772	4.190	8.737	-3.395	3.942	0.258
600JS300-43	0.0451	0.613	2.09	3.621	1.207	2.430	0.835	1.167	3.493	1.138	20.09	3014	0.416	7.165	-2.584	3.734	0.521
600JS300-54	0.0566	0.767	2.61	4.505	1.502	2.424	1.034	1.161	4.366	1.426	38.32	5682	0.819	8.822	-2.571	3.719	0.522
600JS300-68	0.0713	0.961	3.27	5.613	1.871	2.417	1.281	1.155	5.613	1.871	51.44	7078	1.628	10.842	-2.553	3.701	0.524
600JS300-97	0.1017	1.355	4.61	7.825	2.608	2.403	1.764	1.141	7.825	2.608	77.30	9865	4.672	14.689	-2.517	3.662	0.528
600JS350-54	0.0566	0.823	2.80	5.005	1.668	2.466	1.485	1.343	4.722	1.515	40.20	6743	0.879	12.575	-3.035	4.135	0.461
600JS350-68	0.0713	1.032	3.51	6.240	2.080	2.459	1.843	1.336	6.176	2.044	53.20	8415	1.749	15.485	-3.017	4.115	0.462
600JS350-97	0.1017	1.457	4.95	8.709	2.903	2.445	2.547	1.322	8.710	2.903	78.13	11772	5.023	21.062	-2.981	4.076	0.465
800JS300-43	0.0451	0.704	2.39	7.031	1.758	3.161	0.920	1.144	6.825	1.675	28.41	3014	0.477	12.654	-2.335	4.093	0.674
800JS300-54	0.0566	0.880	2.99	8.759	2.190	3.155	1.140	1.138	8.527	2.097	54.87	5682	0.940	15.604	-2.322	4.080	0.676
800JS300-68	0.0713	1.103	3.75	10.931	2.733	3.148	1.412	1.132	10.931	2.733	75.59	7078	1.870	19.219	-2.305	4.062	0.678
800JS300-97	0.1017	1.559	5.30	15.288	3.822	3.132	1.946	1.117	15.288	3.822	113.11	9865	5.374	26.155	-2.271	4.027	0.682
800JS350-54	0.0566	0.936	3.18	9.662	2.413	3.211	1.640	1.323	9.182	2.225	56.57	6743	1.000	22.249	-2.763	4.437	0.612
800JS350-68	0.0713	1.175	3.99	12.051	3.013	3.203	2.035	1.316	11.922	2.960	77.92	8415	1.990	27.455	-2.746	4.419	0.614
800JS350-97	0.1017	1.660	5.65	16.875	4.219	3.188	2.815	1.302	16.875	4.219	113.83	11772	5.724	37.510	-2.710	4.382	0.618

Header (H) Section Properties

	Design	Gross Properties							Effective Properties				Torsional				
Section	Thickness (in)	Area (in^2)	Weight (lb/ft)	Ix (in^4)	Sx (in^3)	Rx (in)	Iy (in^4)	Ry (in)	Ix (in^4)	Sx (in^3)	Ma (in-k)	Vag (lb)	J^{x1000} (in^4)	Cw (in^6)	Xo (in)	Ro (in)	β
362HS300-43	0.0451	0.506	1.72	1.151	0.635	1.507	0.694	1.171	1.106	0.594	10.38	3014	0.343	3.035	-2.969	3.530	0.292
362HS300-54	0.0566	0.632	2.15	1.427	0.787	1.503	0.859	1.165	1.379	0.743	19.75	5682	0.675	3.724	-2.955	3.514	0.293
362HS300-68	0.0713	0.791	2.69	1.771	0.977	1.496	1.063	1.159	1.771	0.977	26.63	7078	1.341	4.556	-2.938	3.495	0.293
362HS300-97	0.1017	1.114	3.79	2.449	1.351	1.483	1.461	1.146	2.444	1.351	40.24	9865	3.840	6.115	-2.902	3.454	0.294
362HS350-54	0.0566	0.689	2.34	1.607	0.887	1.528	1.234	1.339	1.508	0.796	20.84	6743	0.736	5.289	-3.449	4.002	0.258
362HS350-68	0.0713	0.863	2.93	1.996	1.101	1.521	1.531	1.332	1.978	1.084	27.76	8415	1.462	6.484	-3.431	3.983	0.258
362HS350-97	0.1017	1.215	4.13	2.765	1.526	1.508	2.113	1.319	2.765	1.526	41.35	11772	4.190	8.737	-3.395	3.942	0.258
600HS300-43	0.0451	0.613	2.09	3.621	1.207	2.430	0.835	1.167	3.493	1.138	20.09	3014	0.416	7.165	-2.584	3.734	0.521
600HS300-54	0.0566	0.767	2.61	4.505	1.502	2.424	1.034	1.161	4.366	1.426	38.32	5682	0.819	8.822	-2.571	3.719	0.522
600HS300-68	0.0713	0.961	3.27	5.613	1.871	2.417	1.281	1.155	5.613	1.871	51.44	7078	1.628	10.842	-2.553	3.701	0.524
600HS300-97	0.1017	1.355	4.61	7.825	2.608	2.403	1.764	1.141	7.825	2.608	77.30	9865	4.672	14.689	-2.517	3.662	0.528
600HS350-54	0.0566	0.823	2.80	5.005	1.668	2.466	1.485	1.343	4.722	1.515	40.20	6743	0.879	12.575	-3.035	4.135	0.461
600HS350-68	0.0713	1.032	3.51	6.240	2.080	2.459	1.843	1.336	6.176	2.044	53.20	8415	1.749	15.485	-3.017	4.115	0.462
600HS350-97	0.1017	1.457	4.95	8.709	2.903	2.445	2.547	1.322	8.710	2.903	78.13	11772	5.023	21.062	-2.981	4.076	0.465
800HS300-43	0.0451	0.704	2.39	7.031	1.758	3.161	0.920	1.144	6.825	1.675	28.41	3014	0.477	12.654	-2.335	4.093	0.674
800HS300-54	0.0566	0.880	2.99	8.759	2.190	3.155	1.140	1.138	8.527	2.097	54.87	5682	0.940	15.604	-2.322	4.080	0.676
800HS300-68	0.0713	1.103	3.75	10.931	2.733	3.148	1.412	1.132	10.931	2.733	75.59	7078	1.870	19.219	-2.305	4.062	0.678
800HS300-97	0.1017	1.559	5.30	15.288	3.822	3.132	1.946	1.117	15.288	3.822	113.11	9865	5.374	26.155	-2.271	4.027	0.682
800HS350-54	0.0566	0.936	3.18	9.662	2.413	3.211	1.640	1.323	9.182	2.225	56.57	6743	1.000	22.249	-2.763	4.437	0.612
800HS350-68	0.0713	1.175	3.99	12.051	3.013	3.203	2.035	1.316	11.922	2.960	77.92	8415	1.990	27.455	-2.746	4.419	0.614
800HS350-97	0.1017	1.660	5.65	16.875	4.219	3.188	2.815	1.302	16.875	4.219	113.83	11772	5.724	37.510	-2.710	4.382	0.618

Clip Properties

Clip Properties Table Notes

1. Screw strengths based on 8 #10-16 self-drilling tapping screws per ICC Evaluation Report ESR1976
2. Tabulated values assume 8 screws used in jamb to header connection
3. Up to 1/4 inch gap between end of header and jamb permitted using 1/4" Gap values
4. To determine the capacity of a connection, compare the appropriate header and jamb value and use the lower value
5. Allowable loads have not been increased for wind or seismic
6. For Lateral and Vertical Forces occurring at the same time, use the interaction equation $(f1/F1)^2 + (f2/F2)^2 < 1.07$
7. Table to be used by qualified engineers only

Clip Profile Dimensions

Clip Section	Design Thickness (in)	Gauge	Leg Length (in)	Clip Length (in)	Web Width (in)	Yield (ksi)	Coating
306HC350-68	0.0713	14	2.0625	3.500	3.0625	50	G90
356HC350-68	0.0713	14	2.0625	3.500	3.5625	50	G90
306HC588-68	0.0713	14	2.0625	5.875	3.0625	50	G90
356HC588-68	0.0713	14	2.0625	5.875	3.5625	50	G90
306HC788-68	0.0713	14	2.0625	7.875	3.0625	50	G90
356HC788-68	0.0713	14	2.0625	7.875	3.5625	50	G90

Allowable loads (lbs.)

Jamb Section	Header Section	Clip Section	Clip Strength				
			Lateral Force (lbs)		Vertical Force (lbs)		
					Jamb	Header	
			Jamb	Header		No Gap	1/4" Gap
362JS300-43	362HS300-43	306HC350-68	1052	838	1052	740	611
362JS300-54	362HS300-54	306HC350-68	1972	1570	1972	1008	786
362JS300-68	362HS300-68	306HC350-68	1972	1570	1972	1110	786
362JS300-97	362HS300-97	306HC350-68	1972	1570	1972	1224	786
362JS350-54	362HS350-54	356HC350-68	1972	1570	1972	1008	786
362JS350-68	362HS350-68	356HC350-68	1972	1570	1972	1110	786
362JS350-97	362HS350-97	356HC350-68	1972	1570	1972	1224	786
600JS300-43	600HS300-43	306HC588-68	1052	978	1052	1262	878
600JS300-54	600HS300-54	306HC588-68	1972	1832	1972	1440	1056
600JS300-68	600HS300-68	306HC588-68	1972	1832	1972	1542	1158
600JS300-97	600HS300-97	306HC588-68	1972	1832	1972	1756	1319
600JS350-54	600HS350-54	356HC588-68	1972	1832	1972	1440	1056
600JS350-68	600HS350-68	356HC588-68	1972	1832	1972	1542	1158
600JS350-97	600HS350-97	356HC588-68	1972	1832	1972	1756	1319
800JS300-43	800HS300-43	306HC788-68	1052	996	1052	1262	878
800JS300-54	800HS300-54	306HC788-68	1972	1867	1972	1440	1056
800JS300-68	800HS300-68	306HC788-68	1972	1867	1972	1542	1158
800JS300-97	800HS300-97	306HC788-68	1972	1867	1972	1756	1319
800JS350-54	800HS350-54	356HC788-68	1972	1867	1972	1440	1056
800JS350-68	800HS350-68	356HC788-68	1972	1867	1972	1542	1158
800JS350-97	800HS350-97	356HC788-68	1972	1867	1972	1756	1319

Interior Span Chart (3.0" Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 1.0 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 10psf , Wind Load = 5psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			7ft	8ft	9ft	7ft	8ft	9ft	7ft	8ft	9ft
9	362HS300-43	33	11'-7"	13'-8"		11'-7"	13'-8"		11'-7"	13'-8"	
	362HS300-54	50	12'-10"	15'-4"		12'-10"	15'-4"		12'-10"	15'-4"	
	362HS300-68	50	13'-7"	16'-2"		13'-7"	16'-2"		13'-7"	16'-2"	
	362HS300-97	50	14'-9"	17'-7"		14'-9"	17'-7"		14'-9"	17'-7"	
	600HS300-43	33	12'-9"	15'-2"		12'-9"	15'-2"		12'-9"	15'-2"	
	600HS300-54	50	13'-6"	16'-0"		13'-6"	16'-0"		13'-6"	16'-0"	
	600HS300-68	50	14'-3"	17'-0"		14'-3"	17'-0"		14'-3"	17'-0"	
	600HS300-97	50	15'-5"	18'-5"		15'-5"	18'-5"		15'-5"	18'-5"	
	800HS300-43	33	13'-1"	15'-7"		13'-1"	15'-7"		13'-1"	15'-7"	
	800HS300-54	50	13'-10"	16'-5"		13'-10"	16'-5"		13'-10"	16'-5"	
	800HS300-68	50	14'-7"	17'-5"		14'-7"	17'-5"		14'-7"	17'-5"	
	800HS300-97	50	15'-10"	18'-10"		15'-10"	18'-10"		15'-10"	18'-10"	
11	362HS300-43	33	9'-0"	9'-10"	11'-0"	9'-0"	9'-10"	11'-0"	9'-0"	9'-10"	10'-2"
	362HS300-54	50	10'-10"	11'-8"	12'-10"	10'-10"	11'-8"	12'-10"	10'-10"	10'-11"	10'-11"
	362HS300-68	50	11'-5"	12'-4"	13'-7"	11'-5"	12'-4"	13'-7"	11'-5"	11'-10"	11'-10"
	362HS300-97	50	12'-5"	13'-4"	14'-9"	12'-5"	13'-4"	14'-9"	12'-5"	13'-3"	13'-3"
	600HS300-43	33	10'-0"	11'-2"	12'-9"	10'-0"	11'-2"	12'-9"	10'-0"	11'-2"	12'-9"
	600HS300-54	50	11'-4"	12'-2"	13'-6"	11'-4"	12'-2"	13'-6"	11'-4"	12'-2"	13'-6"
	600HS300-68	50	12'-0"	12'-11"	14'-3"	12'-0"	12'-11"	14'-3"	12'-0"	12'-11"	14'-3"
	600HS300-97	50	13'-0"	14'-0"	15'-5"	13'-0"	14'-0"	15'-5"	13'-0"	14'-0"	15'-5"
	800HS300-43	33	10'-6"	11'-9"	13'-1"	10'-6"	11'-9"	13'-1"	10'-6"	11'-9"	13'-1"
	800HS300-54	50	11'-7"	12'-6"	13'-10"	11'-7"	12'-6"	13'-10"	11'-7"	12'-6"	13'-10"
	800HS300-68	50	12'-3"	13'-2"	14'-7"	12'-3"	13'-2"	14'-7"	12'-3"	13'-2"	14'-7"
	800HS300-97	50	13'-4"	14'-4"	15'-10"	13'-4"	14'-4"	15'-10"	13'-4"	14'-4"	15'-10"
13	362HS300-43	33	7'-7"	8'-1"	8'-8"	7'-7"	8'-1"	8'-8"	7'-7"	8'-1"	8'-8"
	362HS300-54	50	9'-9"	10'-3"	10'-10"	9'-9"	10'-3"	10'-10"	9'-9"	10'-3"	10'-4"
	362HS300-68	50	10'-4"	10'-10"	11'-5"	10'-4"	10'-10"	11'-5"	10'-4"	10'-10"	11'-3"
	362HS300-97	50	11'-2"	11'-9"	12'-5"	11'-2"	11'-9"	12'-5"	11'-2"	11'-9"	12'-5"
	600HS300-43	33	8'-4"	9'-0"	9'-10"	8'-4"	9'-0"	9'-10"	8'-4"	9'-0"	9'-10"
	600HS300-54	50	10'-3"	10'-9"	11'-4"	10'-3"	10'-9"	11'-4"	10'-3"	10'-9"	11'-4"
	600HS300-68	50	10'-10"	11'-4"	12'-0"	10'-10"	11'-4"	12'-0"	10'-10"	11'-4"	12'-0"
	600HS300-97	50	11'-9"	12'-3"	13'-0"	11'-9"	12'-3"	13'-0"	11'-9"	12'-3"	13'-0"
	800HS300-43	33	8'-8"	9'-5"	10'-4"	8'-8"	9'-5"	10'-4"	8'-8"	9'-5"	10'-4"
	800HS300-54	50	10'-6"	11'-0"	11'-7"	10'-6"	11'-0"	11'-7"	10'-6"	11'-0"	11'-7"
	800HS300-68	50	11'-1"	11'-7"	12'-3"	11'-1"	11'-7"	12'-3"	11'-1"	11'-7"	12'-3"
	800HS300-97	50	12'-0"	12'-7"	13'-4"	12'-0"	12'-7"	13'-4"	12'-0"	12'-7"	13'-4"
15	362HS300-43	33	6'-8"	7'-0"	7'-5"	6'-8"	7'-0"	7'-5"	6'-8"	7'-0"	7'-5"
	362HS300-54	50	8'-10"	9'-3"	9'-9"	8'-10"	9'-3"	9'-9"	8'-10"	9'-3"	9'-9"
	362HS300-68	50	9'-6"	9'-11"	10'-4"	9'-6"	9'-11"	10'-4"	9'-6"	9'-11"	10'-4"
	362HS300-97	50	10'-5"	10'-9"	11'-2"	10'-5"	10'-9"	11'-2"	10'-5"	10'-9"	11'-2"
	600HS300-43	33	7'-4"	7'-9"	8'-3"	7'-4"	7'-9"	8'-3"	7'-4"	7'-9"	8'-3"
	600HS300-54	50	9'-5"	9'-10"	10'-3"	9'-5"	9'-10"	10'-3"	9'-5"	9'-10"	10'-3"
	600HS300-68	50	10'-1"	10'-5"	10'-10"	10'-1"	10'-5"	10'-10"	10'-1"	10'-5"	10'-10"
	600HS300-97	50	10'-11"	11'-3"	11'-9"	10'-11"	11'-3"	11'-9"	10'-11"	11'-3"	11'-9"
	800HS300-43	33	7'-7"	8'-1"	8'-7"	7'-7"	8'-1"	8'-7"	7'-7"	8'-1"	8'-7"
	800HS300-54	50	9'-8"	10'-1"	10'-6"	9'-8"	10'-1"	10'-6"	9'-8"	10'-1"	10'-6"
	800HS300-68	50	10'-4"	10'-8"	11'-1"	10'-4"	10'-8"	11'-1"	10'-4"	10'-8"	11'-1"
	800HS300-97	50	11'-2"	11'-7"	12'-0"	11'-2"	11'-7"	12'-0"	11'-2"	11'-7"	12'-0"

Interior Span Chart (3.5" Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 1.0 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 10psf , Wind Load = 5psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			7ft	8ft	9ft	7ft	8ft	9ft	7ft	8ft	9ft
9	362HS350-54	50	14'-1"	16'-4"		14'-1"	16'-4"		14'-1"	16'-4"	
	362HS350-68	50	14'-11"	17'-9"		14'-11"	17'-9"		14'-11"	17'-9"	
	362HS350-97	50	16'-2"	19'-3"		16'-2"	19'-3"		16'-2"	19'-3"	
	600HS350-54	50	14'-9"	17'-7"		14'-9"	17'-7"		14'-9"	17'-7"	
	600HS350-68	50	15'-8"	18'-7"		15'-8"	18'-7"		15'-8"	18'-7"	
	600HS350-97	50	17'-0"	20'-2"		17'-0"	20'-2"		17'-0"	20'-2"	
	800HS350-54	50	15'-2"	18'-0"		15'-2"	18'-0"		15'-2"	18'-0"	
	800HS350-68	50	16'-0"	19'-1"		16'-0"	19'-1"		16'-0"	19'-1"	
	800HS350-97	50	17'-5"	20'-8"		17'-5"	20'-8"		17'-5"	20'-8"	
11	362HS350-54	50	11'-10"	12'-9"	14'-1"	11'-10"	12'-9"	13'-4"	11'-3"	11'-3"	11'-3"
	362HS350-68	50	12'-7"	13'-6"	14'-11"	12'-7"	13'-6"	14'-7"	12'-4"	12'-4"	12'-4"
	362HS350-97	50	13'-7"	14'-7"	16'-2"	13'-7"	14'-7"	16'-2"	13'-7"	13'-9"	13'-9"
	600HS350-54	50	12'-5"	13'-4"	14'-9"	12'-5"	13'-4"	14'-9"	12'-5"	13'-4"	14'-9"
	600HS350-68	50	13'-2"	14'-1"	15'-8"	13'-2"	14'-1"	15'-8"	13'-2"	14'-1"	15'-8"
	600HS350-97	50	14'-3"	15'-4"	17'-0"	14'-3"	15'-4"	17'-0"	14'-3"	15'-4"	17'-0"
	800HS350-54	50	12'-9"	13'-8"	15'-2"	12'-9"	13'-8"	15'-2"	12'-9"	13'-8"	15'-2"
	800HS350-68	50	13'-6"	14'-6"	16'-0"	13'-6"	14'-6"	16'-0"	13'-6"	14'-6"	16'-0"
	800HS350-97	50	14'-7"	15'-9"	17'-5"	14'-7"	15'-9"	17'-5"	14'-7"	15'-9"	17'-5"
13	362HS350-54	50	10'-8"	11'-2"	11'-10"	10'-8"	11'-2"	11'-10"	10'-8"	10'-8"	10'-8"
	362HS350-68	50	11'-4"	11'-10"	12'-7"	11'-4"	11'-10"	12'-7"	11'-4"	11'-8"	11'-8"
	362HS350-97	50	12'-3"	12'-10"	13'-7"	12'-3"	12'-10"	13'-7"	12'-3"	12'-10"	13'-0"
	600HS350-54	50	11'-3"	11'-9"	12'-5"	11'-3"	11'-9"	12'-5"	11'-3"	11'-9"	12'-5"
	600HS350-68	50	11'-10"	12'-5"	13'-2"	11'-10"	12'-5"	13'-2"	11'-10"	12'-5"	13'-2"
	600HS350-97	50	12'-11"	13'-6"	14'-3"	12'-11"	13'-6"	14'-3"	12'-11"	13'-6"	14'-3"
	800HS350-54	50	11'-6"	12'-0"	12'-9"	11'-6"	12'-0"	12'-9"	11'-6"	12'-0"	12'-9"
	800HS350-68	50	12'-2"	12'-9"	13'-6"	12'-2"	12'-9"	13'-6"	12'-2"	12'-9"	13'-6"
	800HS350-97	50	13'-2"	13'-10"	14'-7"	13'-2"	13'-10"	14'-7"	13'-2"	13'-10"	14'-7"
15	362HS350-54	50	9'-11"	10'-4"	10'-8"	9'-11"	10'-4"	10'-8"	9'-11"	10'-2"	10'-2"
	362HS350-68	50	10'-6"	10'-11"	11'-4"	10'-6"	10'-11"	11'-4"	10'-6"	10'-11"	11'-1"
	362HS350-97	50	11'-5"	11'-10"	12'-3"	11'-5"	11'-10"	12'-3"	11'-5"	11'-10"	12'-3"
	600HS350-54	50	10'-5"	10'-9"	11'-3"	10'-5"	10'-9"	11'-3"	10'-5"	10'-9"	11'-3"
	600HS350-68	50	11'-0"	11'-5"	11'-10"	11'-0"	11'-5"	11'-10"	11'-0"	11'-5"	11'-10"
	600HS350-97	50	12'-0"	12'-5"	12'-11"	12'-0"	12'-5"	12'-11"	12'-0"	12'-5"	12'-11"
	800HS350-54	50	10'-8"	11'-1"	11'-6"	10'-8"	11'-1"	11'-6"	10'-8"	11'-1"	11'-6"
	800HS350-68	50	11'-4"	11'-9"	12'-2"	11'-4"	11'-9"	12'-2"	11'-4"	11'-9"	12'-2"
	800HS350-97	50	12'-3"	12'-8"	13'-2"	12'-3"	12'-8"	13'-2"	12'-3"	12'-8"	13'-2"

Exterior Span Chart (3.0" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 20psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS300-43	33	8'-0"			8'-0"			8'-0"		
	362HS300-54	50	11'-0"			11'-0"			11'-0"		
	362HS300-68	50	12'-3"			12'-3"			12'-3"		
	362HS300-97	50	13'-7"			13'-7"			13'-7"		
	600HS300-43	33	10'-5"			10'-5"			10'-5"		
	600HS300-54	50	14'-5"			14'-5"			12'-2"		
	600HS300-68	50	16'-3"			15'-8"			13'-3"		
	600HS300-97	50	17'-7"			17'-6"			14'-9"		
	800HS300-43	33	11'-11"			11'-11"			11'-11"		
	800HS300-54	50	15'-9"			15'-9"			15'-3"		
	800HS300-68	50	16'-7"			16'-7"			16'-6"		
	800HS300-97	50	18'-0"			18'-0"			18'-0"		
11	362HS300-43	33	6'-6"	7'-4"		6'-6"	7'-4"		6'-6"	7'-2"	
	362HS300-54	50	9'-0"	10'-1"		9'-0"	9'-2"		7'-9"	7'-9"	
	362HS300-68	50	10'-5"	11'-5"		10'-0"	10'-0"		8'-5"	8'-5"	
	362HS300-97	50	12'-8"	12'-9"		11'-1"	11'-1"		9'-4"	9'-4"	
	600HS300-43	33	8'-1"	9'-8"		8'-1"	9'-8"		8'-1"	9'-8"	
	600HS300-54	50	11'-1"	13'-5"		11'-1"	13'-5"		11'-1"	11'-4"	
	600HS300-68	50	12'-4"	15'-6"		12'-4"	14'-8"		12'-4"	12'-4"	
	600HS300-97	50	13'-4"	17'-7"		13'-4"	16'-5"		13'-4"	13'-10"	
	800HS300-43	33	8'-10"	11'-1"		8'-10"	11'-1"		8'-10"	11'-1"	
	800HS300-54	50	11'-11"	15'-4"		11'-11"	15'-4"		11'-11"	14'-3"	
	800HS300-68	50	12'-7"	16'-7"		12'-7"	16'-7"		12'-7"	15'-5"	
	800HS300-97	50	13'-8"	18'-0"		13'-8"	18'-0"		13'-8"	17'-3"	
13	362HS300-43	33	5'-7"	6'-1"	6'-10"	5'-7"	6'-1"	6'-10"	5'-7"	6'-1"	6'-10"
	362HS300-54	50	7'-9"	8'-5"	9'-5"	7'-9"	8'-5"	8'-8"	7'-4"	7'-4"	7'-4"
	362HS300-68	50	9'-0"	9'-10"	10'-10"	9'-0"	9'-5"	9'-5"	7'-11"	7'-11"	7'-11"
	362HS300-97	50	10'-11"	11'-11"	12'-1"	10'-6"	10'-6"	10'-6"	8'-10"	8'-10"	8'-10"
	600HS300-43	33	6'-9"	7'-8"	9'-1"	6'-9"	7'-8"	9'-1"	6'-9"	7'-8"	9'-1"
	600HS300-54	50	9'-4"	10'-7"	12'-6"	9'-4"	10'-7"	12'-6"	9'-4"	10'-7"	10'-9"
	600HS300-68	50	10'-10"	12'-3"	14'-6"	10'-10"	12'-3"	13'-10"	10'-10"	11'-8"	11'-8"
	600HS300-97	50	11'-9"	13'-4"	17'-7"	11'-9"	13'-4"	15'-6"	11'-9"	13'-1"	13'-1"
	800HS300-43	33	7'-4"	8'-6"	10'-5"	7'-4"	8'-6"	10'-5"	7'-4"	8'-6"	10'-5"
	800HS300-54	50	10'-2"	11'-9"	14'-6"	10'-2"	11'-9"	14'-6"	10'-2"	11'-9"	13'-5"
	800HS300-68	50	11'-1"	12'-7"	16'-7"	11'-1"	12'-7"	16'-7"	11'-1"	12'-7"	14'-7"
	800HS300-97	50	12'-0"	13'-8"	18'-0"	12'-0"	13'-8"	18'-0"	12'-0"	13'-8"	16'-4"
15	362HS300-43	33	5'-0"	5'-4"	5'-10"	5'-0"	5'-4"	5'-10"	5'-0"	5'-4"	5'-10"
	362HS300-54	50	6'-11"	7'-5"	8'-0"	6'-11"	7'-5"	8'-0"	6'-11"	7'-0"	7'-0"
	362HS300-68	50	8'-0"	8'-7"	9'-4"	8'-0"	8'-7"	9'-0"	7'-7"	7'-7"	7'-7"
	362HS300-97	50	9'-8"	10'-5"	11'-4"	9'-8"	10'-0"	10'-0"	8'-5"	8'-5"	8'-5"
	600HS300-43	33	6'-0"	6'-7"	7'-4"	6'-0"	6'-7"	7'-4"	6'-0"	6'-7"	7'-4"
	600HS300-54	50	8'-3"	9'-1"	10'-2"	8'-3"	9'-1"	10'-2"	8'-3"	9'-1"	10'-2"
	600HS300-68	50	9'-6"	10'-6"	11'-9"	9'-6"	10'-6"	11'-9"	9'-6"	10'-6"	11'-2"
	600HS300-97	50	10'-9"	11'-9"	13'-4"	10'-9"	11'-9"	13'-4"	10'-9"	11'-9"	12'-5"
	800HS300-43	33	6'-5"	7'-2"	8'-2"	6'-5"	7'-2"	8'-2"	6'-5"	7'-2"	8'-2"
	800HS300-54	50	8'-11"	9'-11"	11'-4"	8'-11"	9'-11"	11'-4"	8'-11"	9'-11"	11'-4"
	800HS300-68	50	10'-2"	11'-1"	12'-7"	10'-2"	11'-1"	12'-7"	10'-2"	11'-1"	12'-7"
	800HS300-97	50	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-8"

Exterior Span Chart (3.5" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 20psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS350-54	50	11'-6"			11'-6"			11'-6"		
	362HS350-68	50	12'-8"			12'-8"			12'-8"		
	362HS350-97	50	14'-2"			14'-2"			14'-2"		
	600HS350-54	50	15'-2"			14'-10"			12'-6"		
	600HS350-68	50	17'-5"			16'-2"			13'-8"		
	600HS350-97	50	19'-3"			18'-2"			15'-4"		
	800HS350-54	50	17'-2"			17'-2"			15'-7"		
	800HS350-68	50	18'-3"			18'-3"			17'-0"		
	800HS350-97	50	19'-9"			19'-9"			19'-1"		
11	362HS350-54	50	9'-5"	10'-6"		9'-5"	9'-5"		8'-0"	8'-0"	
	362HS350-68	50	10'-11"	11'-10"		10'-4"	10'-4"		8'-9"	8'-9"	
	362HS350-97	50	13'-3"	13'-3"		11'-7"	11'-7"		9'-9"	9'-9"	
	600HS350-54	50	11'-10"	14'-0"		11'-10"	13'-10"		11'-8"	11'-8"	
	600HS350-68	50	13'-6"	16'-1"		13'-6"	15'-2"		12'-9"	12'-9"	
	600HS350-97	50	14'-8"	19'-3"		14'-8"	17'-0"		14'-4"	14'-4"	
	800HS350-54	50	13'-1"	16'-0"		13'-1"	16'-0"		13'-1"	14'-7"	
	800HS350-68	50	13'-10"	18'-3"		13'-10"	18'-3"		13'-10"	15'-11"	
	800HS350-97	50	15'-0"	19'-9"		15'-0"	19'-9"		15'-0"	17'-10"	
13	362HS350-54	50	8'-3"	8'-11"	9'-9"	8'-3"	8'-11"	8'-11"	7'-6"	7'-6"	7'-6"
	362HS350-68	50	9'-6"	10'-3"	11'-3"	9'-6"	9'-10"	9'-10"	8'-3"	8'-3"	8'-3"
	362HS350-97	50	11'-6"	12'-5"	12'-7"	10'-11"	10'-11"	10'-11"	9'-3"	9'-3"	9'-3"
	600HS350-54	50	10'-1"	11'-3"	13'-1"	10'-1"	11'-3"	13'-1"	10'-1"	11'-0"	11'-0"
	600HS350-68	50	11'-7"	13'-0"	15'-0"	11'-7"	13'-0"	14'-4"	11'-7"	12'-1"	12'-1"
	600HS350-97	50	12'-11"	14'-8"	18'-2"	12'-11"	14'-8"	16'-1"	12'-11"	13'-7"	13'-7"
	800HS350-54	50	11'-0"	12'-7"	15'-0"	11'-0"	12'-7"	15'-0"	11'-0"	12'-7"	13'-9"
	800HS350-68	50	12'-2"	13'-10"	17'-7"	12'-2"	13'-10"	17'-7"	12'-2"	13'-10"	15'-1"
	800HS350-97	50	13'-2"	15'-0"	19'-9"	13'-2"	15'-0"	19'-9"	13'-2"	15'-0"	16'-11"
15	362HS350-54	50	7'-4"	7'-10"	8'-5"	7'-4"	7'-10"	8'-5"	7'-2"	7'-2"	7'-2"
	362HS350-68	50	8'-6"	9'-1"	9'-9"	8'-6"	9'-1"	9'-4"	7'-10"	7'-10"	7'-10"
	362HS350-97	50	10'-3"	11'-0"	11'-10"	10'-3"	10'-5"	10'-5"	8'-10"	8'-10"	8'-10"
	600HS350-54	50	8'-11"	9'-8"	10'-9"	8'-11"	9'-8"	10'-9"	8'-11"	9'-8"	10'-6"
	600HS350-68	50	10'-3"	11'-2"	12'-5"	10'-3"	11'-2"	12'-5"	10'-3"	11'-2"	11'-6"
	600HS350-97	50	11'-10"	12'-11"	14'-8"	11'-10"	12'-11"	14'-8"	11'-10"	12'-11"	12'-11"
	800HS350-54	50	9'-8"	10'-8"	12'-1"	9'-8"	10'-8"	12'-1"	9'-8"	10'-8"	12'-1"
	800HS350-68	50	11'-2"	12'-2"	13'-10"	11'-2"	12'-2"	13'-10"	11'-2"	12'-2"	13'-10"
	800HS350-97	50	12'-2"	13'-2"	15'-0"	12'-2"	13'-2"	15'-0"	12'-2"	13'-2"	15'-0"

Exterior Span Chart (3.0" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 25psf)

Wall Height (ft)	Section	Fy (ksi)	L/240 Opening Height (ft)			L/360 Opening Height (ft)			L/600 Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS300-43	33	7'-3"			7'-3"			7'-3"		
	362HS300-54	50	10'-0"			10'-0"			10'-0"		
	362HS300-68	50	11'-4"			11'-4"			11'-4"		
	362HS300-97	50	12'-8"			12'-8"			12'-8"		
	600HS300-43	33	9'-7"			9'-7"			9'-7"		
	600HS300-54	50	13'-3"			13'-3"			11'-3"		
	600HS300-68	50	15'-4"			14'-7"			12'-3"		
	600HS300-97	50	17'-7"			16'-3"			13'-9"		
	800HS300-43	33	11'-0"			11'-0"			11'-0"		
	800HS300-54	50	15'-3"			15'-3"			14'-1"		
	800HS300-68	50	16'-7"			16'-7"			15'-4"		
	800HS300-97	50	18'-0"			18'-0"			17'-2"		
11	362HS300-43	33	6'-0"	6'-8"		6'-0"	6'-8"		6'-0"	6'-8"	
	362HS300-54	50	8'-3"	9'-2"		8'-3"	8'-6"		7'-2"	7'-2"	
	362HS300-68	50	9'-7"	10'-7"		9'-3"	9'-3"		7'-10"	7'-10"	
	362HS300-97	50	11'-9"	11'-10"		10'-4"	10'-4"		8'-8"	8'-8"	
	600HS300-43	33	7'-7"	8'-10"		7'-7"	8'-10"		7'-7"	8'-10"	
	600HS300-54	50	10'-5"	12'-3"		10'-5"	12'-3"		10'-5"	10'-7"	
	600HS300-68	50	12'-1"	14'-2"		12'-1"	13'-7"		11'-6"	11'-6"	
	600HS300-97	50	13'-4"	17'-4"		13'-4"	15'-3"		12'-10"	12'-10"	
	800HS300-43	33	8'-5"	10'-2"		8'-5"	10'-2"		8'-5"	10'-2"	
	800HS300-54	50	11'-7"	14'-2"		11'-7"	14'-2"		11'-7"	13'-2"	
	800HS300-68	50	12'-7"	16'-7"		12'-7"	16'-7"		12'-7"	14'-4"	
	800HS300-97	50	13'-8"	18'-0"		13'-8"	18'-0"		13'-8"	16'-1"	
13	362HS300-43	33	5'-3"	5'-8"	6'-2"	5'-3"	5'-8"	6'-2"	5'-3"	5'-8"	6'-2"
	362HS300-54	50	7'-3"	7'-9"	8'-6"	7'-3"	7'-9"	8'-1"	6'-9"	6'-9"	6'-9"
	362HS300-68	50	8'-4"	9'-0"	9'-11"	8'-4"	8'-9"	8'-9"	7'-5"	7'-5"	7'-5"
	362HS300-97	50	10'-2"	11'-0"	11'-2"	9'-9"	9'-9"	9'-9"	8'-3"	8'-3"	8'-3"
	600HS300-43	33	6'-5"	7'-2"	8'-3"	6'-5"	7'-2"	8'-3"	6'-5"	7'-2"	8'-3"
	600HS300-54	50	8'-11"	9'-11"	11'-5"	8'-11"	9'-11"	11'-5"	8'-11"	9'-11"	10'-0"
	600HS300-68	50	10'-3"	11'-6"	13'-3"	10'-3"	11'-6"	12'-11"	10'-3"	10'-10"	10'-10"
	600HS300-97	50	11'-9"	13'-4"	16'-2"	11'-9"	13'-4"	14'-5"	11'-9"	12'-2"	12'-2"
	800HS300-43	33	7'-0"	8'-0"	9'-7"*	7'-0"	8'-0"	9'-7"*	7'-0"	8'-0"	9'-7"*
	800HS300-54	50	9'-9"	11'-1"	13'-3"	9'-9"	11'-1"	13'-3"	9'-9"	11'-1"	12'-6"
	800HS300-68	50	11'-1"	12'-7"	15'-6"	11'-1"	12'-7"	15'-6"	11'-1"	12'-7"	13'-7"
	800HS300-97	50	12'-0"	13'-8"	18'-0"	12'-0"	13'-8"	18'-0"	12'-0"	13'-8"	15'-2"
15	362HS300-43	33	4'-8"	5'-0"	5'-4"	4'-8"	5'-0"	5'-4"	4'-8"	5'-0"	5'-4"
	362HS300-54	50	6'-6"	6'-11"	7'-4"	6'-6"	6'-11"	7'-4"	6'-6"	6'-6"	6'-6"
	362HS300-68	50	7'-6"	8'-0"	8'-7"	7'-6"	8'-0"	8'-4"	7'-0"	7'-0"	7'-0"
	362HS300-97	50	9'-1"	9'-9"	10'-5"	9'-1"	9'-4"	9'-4"	7'-10"	7'-10"	7'-10"
	600HS300-43	33	5'-8"	6'-2"	6'-10"	5'-8"	6'-2"	6'-10"	5'-8"	6'-2"	6'-10"
	600HS300-54	50	7'-10"	8'-7"	9'-6"	7'-10"	8'-7"	9'-6"	7'-10"	8'-7"	9'-6"
	600HS300-68	50	9'-1"	9'-11"	10'-11"	9'-1"	9'-11"	10'-11"	9'-1"	9'-11"	10'-4"
	600HS300-97	50	10'-9"	11'-9"	13'-4"	10'-9"	11'-9"	13'-4"	10'-9"	11'-7"	11'-7"
	800HS300-43	33	6'-2"	6'-10"	7'-8"	6'-2"	6'-10"	7'-8"	6'-2"	6'-10"	7'-8"
	800HS300-54	50	8'-7"	9'-5"	10'-8"	8'-7"	9'-5"	10'-8"	8'-7"	9'-5"	10'-8"
	800HS300-68	50	9'-11"	11'-0"	12'-5"	9'-11"	11'-0"	12'-5"	9'-11"	11'-0"	12'-5"
	800HS300-97	50	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-8"

Exterior Span Chart (3.5" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 25psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS350-54	50	10'-5"			10'-5"			10'-5"		
	362HS350-68	50	11'-9"			11'-9"			11'-9"		
	362HS350-97	50	13'-2"			13'-2"			13'-2"		
	600HS350-54	50	13'-10"			13'-9"			11'-7"		
	600HS350-68	50	15'-11"			15'-0"			12'-8"		
	600HS350-97	50	19'-3"			16'-10"			14'-3"		
	800HS350-54	50	15'-11"			15'-11"			14'-6"		
	800HS350-68	50	18'-3"			18'-3"			15'-9"		
	800HS350-97	50	19'-9"			19'-9"			17'-9"		
11	362HS350-54	50	8'-8"	9'-6"		8'-8"	8'-9"		7'-5"	7'-5"	
	362HS350-68	50	10'-1"	11'-0"		9'-7"	9'-7"		8'-1"	8'-1"	
	362HS350-97	50	12'-2"	12'-4"		10'-9"	10'-9"		9'-1"	9'-1"	
	600HS350-54	50	11'-1"	12'-9"		11'-1"	12'-9"		10'-10"	10'-10"	
	600HS350-68	50	12'-9"	14'-8"		12'-9"	14'-1"		11'-10"	11'-10"	
	600HS350-97	50	14'-8"	17'-9"		14'-8"	15'-9"		13'-4"	13'-4"	
	800HS350-54	50	12'-4"	14'-8"		12'-4"	14'-8"		12'-4"	13'-6"	
	800HS350-68	50	13'-10"	17'-2"		13'-10"	17'-2"		13'-10"	14'-9"	
	800HS350-97	50	15'-0"	19'-9"		15'-0"	19'-8"		15'-0"	16'-7"	
13	362HS350-54	50	7'-8"	8'-2"	8'-10"	7'-8"	8'-2"	8'-4"	7'-0"	7'-0"	7'-0"
	362HS350-68	50	8'-10"	9'-5"	10'-2"	8'-10"	9'-1"	9'-1"	7'-8"	7'-8"	7'-8"
	362HS350-97	50	10'-8"	11'-5"	11'-8"	10'-2"	10'-2"	10'-2"	8'-7"	8'-7"	8'-7"
	600HS350-54	50	9'-6"	10'-6"	11'-10"	9'-6"	10'-6"	11'-10"	9'-6"	10'-3"	10'-3"
	600HS350-68	50	10'-11"	12'-1"	13'-8"	10'-11"	12'-1"	13'-4"	10'-11"	11'-2"	11'-2"
	600HS350-97	50	12'-11"	14'-7"	16'-6"	12'-11"	14'-7"	14'-11"	12'-7"	12'-7"	12'-7"
	800HS350-54	50	10'-6"	11'-9"	13'-9"	10'-6"	11'-9"	13'-9"	10'-6"	11'-9"	12'-10"
	800HS350-68	50	12'-2"	13'-9"	16'-1"	12'-2"	13'-9"	16'-1"	12'-2"	13'-9"	14'-0"
	800HS350-97	50	13'-2"	15'-0"	19'-5"	13'-2"	15'-0"	18'-7"	13'-2"	15'-0"	15'-8"
15	362HS350-54	50	6'-11"	7'-3"	7'-8"	6'-11"	7'-3"	7'-8"	6'-8"	6'-8"	6'-8"
	362HS350-68	50	7'-11"	8'-4"	8'-11"	7'-11"	8'-4"	8'-8"	7'-4"	7'-4"	7'-4"
	362HS350-97	50	9'-7"	10'-2"	10'-10"	9'-7"	9'-8"	9'-8"	8'-2"	8'-2"	8'-2"
	600HS350-54	50	8'-5"	9'-1"	10'-0"	8'-5"	9'-1"	10'-0"	8'-5"	9'-1"	9'-9"
	600HS350-68	50	9'-9"	10'-6"	11'-6"	9'-9"	10'-6"	11'-6"	9'-9"	10'-6"	10'-8"
	600HS350-97	50	11'-8"	12'-8"	13'-10"	11'-8"	12'-8"	13'-10"	11'-8"	12'-0"	12'-0"
	800HS350-54	50	9'-3"	10'-1"	11'-3"	9'-3"	10'-1"	11'-3"	9'-3"	10'-1"	11'-3"
	800HS350-68	50	10'-9"	11'-9"	13'-1"	10'-9"	11'-9"	13'-1"	10'-9"	11'-9"	13'-1"
	800HS350-97	50	12'-2"	13'-2"	15'-0"	12'-2"	13'-2"	15'-0"	12'-2"	13'-2"	14'-11"

Exterior Span Chart (3.0" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 30psf)

Wall Height (ft)	Section	Fy (ksi)	L/240 Opening Height (ft)			L/360 Opening Height (ft)			L/600 Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS300-43	33	6'-8"			6'-8"			6'-8"		
	362HS300-54	50	9'-3"			9'-3"			9'-3"		
	362HS300-68	50	10'-8"			10'-8"			10'-8"		
	362HS300-97	50	11'-11"			11'-11"			11'-11"		
	600HS300-43	33	8'-11"			8'-11"			8'-11"		
	600HS300-54	50	12'-4"			12'-4"			10'-7"		
	600HS300-68	50	14'-3"			13'-8"			11'-7"		
	600HS300-97	50	17'-5"			15'-4"			12'-11"		
	800HS300-43	33	10'-3"			10'-3"			10'-3"		
	800HS300-54	50	14'-3"			14'-3"			13'-3"		
	800HS300-68	50	16'-7"			16'-7"			14'-5"		
	800HS300-97	50	18'-0"			18'-0"			16'-2"		
11	362HS300-43	33	5'-7"	6'-1"		5'-7"	6'-1"		5'-7"	6'-1"	
	362HS300-54	50	7'-9"	8'-5"		7'-9"	8'-0"		6'-9"	6'-9"	
	362HS300-68	50	9'-0"	9'-10"		8'-8"	8'-8"		7'-4"	7'-4"	
	362HS300-97	50	10'-11"	11'-1"		9'-9"	9'-9"		8'-2"	8'-2"	
	600HS300-43	33	7'-2"	8'-3"		7'-2"	8'-3"		7'-2"	8'-3"	
	600HS300-54	50	9'-10"	11'-4"		9'-10"	11'-4"		9'-10"	9'-11"	
	600HS300-68	50	11'-5"	13'-2"		11'-5"	12'-10"		10'-10"	10'-10"	
	600HS300-97	50	13'-4"	16'-1"		13'-4"	14'-4"		12'-1"	12'-1"	
	800HS300-43	33	8'-0"	9'-6"		8'-0"	9'-6"		8'-0"	9'-6"	
	800HS300-54	50	11'-1"	13'-2"		11'-1"	13'-2"		11'-1"	12'-5"	
	800HS300-68	50	12'-7"	15'-5"		12'-7"	15'-5"		12'-7"	13'-6"	
	800HS300-97	50	13'-8"	18'-0"		13'-8"	17'-11"		13'-8"	15'-1"	
13	362HS300-43	33	4'-11"	5'-3"	5'-8"	4'-11"	5'-3"	5'-8"	4'-11"	5'-3"	5'-8"
	362HS300-54	50	6'-9"	7'-3"	7'-10"	6'-9"	7'-3"	7'-7"	6'-5"	6'-5"	6'-5"
	362HS300-68	50	7'-10"	8'-5"	9'-1"	7'-10"	8'-3"	8'-3"	6'-11"	6'-11"	6'-11"
	362HS300-97	50	9'-7"	10'-3"	10'-6"	9'-2"	9'-2"	9'-2"	7'-9"	7'-9"	7'-9"
	600HS300-43	33	6'-1"	6'-9"	7'-8"	6'-1"	6'-9"	7'-8"	6'-1"	6'-9"	7'-8"
	600HS300-54	50	8'-6"	9'-4"	10'-7"	8'-6"	9'-4"	10'-7"	8'-6"	9'-4"	9'-5"
	600HS300-68	50	9'-9"	10'-10"	12'-3"	9'-9"	10'-10"	12'-1"	9'-9"	10'-3"	10'-3"
	600HS300-97	50	11'-9"	13'-2"	15'-0"	11'-9"	13'-2"	13'-6"	11'-5"	11'-5"	11'-5"
	800HS300-43	33	6'-9"	7'-7"	8'-11"	6'-9"	7'-7"	8'-11"	6'-9"	7'-7"	8'-11"
	800HS300-54	50	9'-4"	10'-6"	12'-4"	9'-4"	10'-6"	12'-4"	9'-4"	10'-6"	11'-9"
	800HS300-68	50	10'-10"	12'-3"	14'-5"	10'-10"	12'-3"	14'-5"	10'-10"	12'-3"	12'-9"
	800HS300-97	50	12'-0"	13'-8"	17'-7"	12'-0"	13'-8"	16'-11"	12'-0"	13'-8"	14'-3"
15	362HS300-43	33	4'-5"	4'-8"	4'-11"	4'-5"	4'-8"	4'-11"	4'-5"	4'-8"	4'-11"
	362HS300-54	50	6'-1"	6'-5"	6'-10"	6'-1"	6'-5"	6'-10"	6'-1"	6'-1"	6'-1"
	362HS300-68	50	7'-1"	7'-6"	7'-11"	7'-1"	7'-6"	7'-10"	6'-7"	6'-7"	6'-7"
	362HS300-97	50	8'-7"	9'-1"	9'-9"	8'-7"	8'-9"	8'-9"	7'-4"	7'-4"	7'-4"
	600HS300-43	33	5'-5"	5'-11"	6'-5"	5'-5"	5'-11"	6'-5"	5'-5"	5'-11"	6'-5"
	600HS300-54	50	7'-6"	8'-1"	8'-11"	7'-6"	8'-1"	8'-11"	7'-6"	8'-1"	8'-11"
	600HS300-68	50	8'-8"	9'-5"	10'-4"	8'-8"	9'-5"	10'-4"	8'-8"	9'-5"	9'-9"
	600HS300-97	50	10'-6"	11'-5"	12'-6"	10'-6"	11'-5"	12'-6"	10'-6"	10'-11"	10'-11"
	800HS300-43	33	5'-11"	6'-6"	7'-3"	5'-11"	6'-6"	7'-3"	5'-11"	6'-6"	7'-3"
	800HS300-54	50	8'-3"	9'-0"	10'-1"	8'-3"	9'-0"	10'-1"	8'-3"	9'-0"	10'-1"
	800HS300-68	50	9'-7"	10'-6"	11'-9"	9'-7"	10'-6"	11'-9"	9'-7"	10'-6"	11'-9"
	800HS300-97	50	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-8"	11'-1"	12'-0"	13'-7"

Exterior Span Chart (3.5" Flange)

Exterior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up and a track fastened over the open end
3. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
4. Headers are assumed to be connected using the corresponding standard clip and fastener pattern
5. For deflection calculations, the effective moment of inertia, calculated at the maximum service load, was used
6. The calculated flexural strength of the header was based upon Lb <= Lu
7. Header framing was calculated assuming a worse case condition of a sill height at ground
8. This table is not applicable for load bearing walls but is applicable for a curtain wall application
9. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
10. Tabled widths marked with an * (asterisk) require special engineering of the clip connection
11. The strength analysis included separate bending and shear checks
12. Unless connections are engineered separately, jambs must be the same or greater gauge and yield strength as the header
13. Opening width is also limited by jamb considerations. See jamb table for limits
14. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
15. Table to be used by qualified engineers only

Allowable header spans (Dead Load = 12psf , Wind Load = 30psf)

Wall Height (ft)	Section	Fy (ksi)	L/240			L/360			L/600		
			Opening Height (ft)			Opening Height (ft)			Opening Height (ft)		
			8ft	10ft	12ft	8ft	10ft	12ft	8ft	10ft	12ft
9	362HS350-54	50	9'-7"			9'-7"			9'-7"		
	362HS350-68	50	11'-1"			11'-1"			11'-1"		
	362HS350-97	50	12'-5"			12'-5"			12'-5"		
	600HS350-54	50	12'-10"			12'-10"			10'-11"		
	600HS350-68	50	14'-9"			14'-2"			11'-11"		
	600HS350-97	50	17'-10"			15'-10"			13'-5"		
	800HS350-54	50	14'-10"			14'-10"			13'-7"		
	800HS350-68	50	17'-4"			17'-4"			14'-10"		
	800HS350-97	50	19'-9"			19'-9"			16'-8"		
11	362HS350-54	50	8'-1"	8'-9"		8'-1"	8'-3"		6'-11"	6'-11"	
	362HS350-68	50	9'-4"	10'-1"		9'-0"	9'-0"		7'-7"	7'-7"	
	362HS350-97	50	11'-4"	11'-7"		10'-1"	10'-1"		8'-6"	8'-6"	
	600HS350-54	50	10'-5"	11'-9"		10'-5"	11'-9"		10'-2"	10'-2"	
	600HS350-68	50	12'-0"	13'-7"		12'-0"	13'-3"		11'-2"	11'-2"	
	600HS350-97	50	14'-6"	16'-5"		14'-6"	14'-10"		12'-6"	12'-6"	
	800HS350-54	50	11'-9"	13'-8"		11'-9"	13'-8"		11'-9"	12'-9"	
	800HS350-68	50	13'-8"	16'-0"		13'-8"	16'-0"		13'-8"	13'-11"	
	800HS350-97	50	15'-0"	19'-3"		15'-0"	18'-6"		15'-0"	15'-7"	
13	362HS350-54	50	7'-2"	7'-7"	8'-1"	7'-2"	7'-7"	7'-10"	6'-7"	6'-7"	6'-7"
	362HS350-68	50	8'-3"	8'-9"	9'-4"	8'-3"	8'-7"	8'-7"	7'-2"	7'-2"	7'-2"
	362HS350-97	50	10'-0"	10'-8"	10'-11"	9'-7"	9'-7"	9'-7"	8'-1"	8'-1"	8'-1"
	600HS350-54	50	9'-0"	9'-10"	11'-0"	9'-0"	9'-10"	11'-0"	9'-0"	9'-8"	9'-8"
	600HS350-68	50	10'-4"	11'-4"	12'-7"	10'-4"	11'-4"	12'-6"	10'-4"	10'-6"	10'-6"
	600HS350-97	50	12'-6"	13'-8"	15'-3"	12'-6"	13'-8"	14'-0"	11'-10"	11'-10"	11'-10"
	800HS350-54	50	10'-0"	11'-1"	12'-9"	10'-0"	11'-1"	12'-9"	10'-0"	11'-1"	12'-0"
	800HS350-68	50	11'-7"	13'-0"	14'-11"	11'-7"	13'-0"	14'-11"	11'-7"	13'-0"	13'-2"
	800HS350-97	50	13'-2"	15'-0"	18'-0"	13'-2"	15'-0"	17'-6"	13'-2"	14'-9"	14'-9"
15	362HS350-54	50	6'-6"	6'-9"	7'-2"	6'-6"	6'-9"	7'-2"	6'-3"	6'-3"	6'-3"
	362HS350-68	50	7'-6"	7'-10"	8'-3"	7'-6"	7'-10"	8'-2"	6'-10"	6'-10"	6'-10"
	362HS350-97	50	9'-1"	9'-6"	10'-0"	9'-1"	9'-1"	9'-1"	7'-8"	7'-8"	7'-8"
	600HS350-54	50	8'-1"	8'-7"	9'-4"	8'-1"	8'-7"	9'-4"	8'-1"	8'-7"	9'-2"
	600HS350-68	50	9'-3"	9'-11"	10'-9"	9'-3"	9'-11"	10'-9"	9'-3"	9'-11"	10'-1"
	600HS350-97	50	11'-2"	11'-11"	13'-0"	11'-2"	11'-11"	13'-0"	11'-2"	11'-3"	11'-3"
	800HS350-54	50	8'-10"	9'-7"	10'-7"	8'-10"	9'-7"	10'-7"	8'-10"	9'-7"	10'-7"
	800HS350-68	50	10'-3"	11'-2"	12'-4"	10'-3"	11'-2"	12'-4"	10'-3"	11'-2"	12'-4"
	800HS350-97	50	12'-2"	13'-2"	14'-11"	12'-2"	13'-2"	14'-11"	12'-2"	13'-2"	14'-1"

Allowable Opening Widths (3.0" Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 1.0 times the listed wind load
2. Header to be installed with open side facing up
3. Minimum opening height based on 36 inches (center of wall). This table is also applicable for door openings
4. Limitations to opening widths are 16'-0" for 3-5/8" members and 20'-0" for 6" & 8" members
5. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
6. Calculated flexural strength of the jamb based upon Lb <= Lu 7
7. This table is applicable for a curtain wall application, but it is not intended for load bearing walls
8. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
9. Tabled widths marked with an * (asterisk) require web stiffening at each end of the jamb. Web crippling check uses 1" of bearing length
10. The strength analysis included separate bending and shear checks plus combined bending and shear
11. Unless connections are engineered separately, jambs must be the same gauge and strength as the header
12. Opening width is also limited by header and clip considerations. See clip and header table for limits
13. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
14. Table to be used by qualified engineers only.

Single Framing Used as Interior Jamb Studs

Wall Height (ft)	Section	Fy (ksi)	5psf			10psf			15psf		
			L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600
9	362JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	13'-2"	7'-3"	10'-10"*	8'-3"	4'-4"
	362JS300-54	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	9'-5"	16'-0"	10'-8"	5'-9"
	362JS300-68	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	12'-6"	16'-0"	14'-1"	7'-10"
	362JS300-97	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	11'-5"
	600JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*
	600JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	600JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	600JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*
	800JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
11	362JS300-43	33	16'-0"	14'-5"	8'-1"	10'-5"	6'-6"	3'-3"	6'-6"	3'-10"	
	362JS300-54	50	16'-0"	16'-0"	10'-5"	13'-4"	8'-5"	4'-5"	8'-5"	5'-1"	
	362JS300-68	50	16'-0"	16'-0"	13'-9"	16'-0"	11'-2"	6'-1"	11'-2"	7'-0"	3'-7"
	362JS300-97	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	9'-1"	16'-0"	10'-3"	5'-6"
	600JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	16'-0"*	13'-6"*	13'-10"*	13'-10"*	8'-6"*
	600JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-3"	20'-0"	19'-4"	11'-0"
	600JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	14'-7"
	600JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*	16'-0"*
	800JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*
	800JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
13	362JS300-43	33	13'-0"	8'-2"	4'-4"	5'-9"	3'-4"		3'-4"		
	362JS300-54	50	16'-0"	10'-6"	5'-9"	7'-6"	4'-6"		4'-6"		
	362JS300-68	50	16'-0"	13'-11"	7'-9"	10'-1"	6'-3"	3'-2"	6'-3"	3'-8"	
	362JS300-97	50	16'-0"	16'-0"	11'-4"	14'-6"	9'-2"	4'-11"	9'-2"	5'-7"	
	600JS300-43	33	16'-0"	16'-0"	16'-0"	14'-9"*	13'-9"*	7'-8"	9'-5"*	8'-8"*	4'-7"
	600JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	17'-6"	9'-11"	17'-6"*	11'-2"	6'-1"
	600JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	13'-2"	20'-0"	14'-10"	8'-3"
	600JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-0"	20'-0"	20'-0"	12'-2"
	800JS300-43	33	16'-0"	16'-0"	16'-0"	16'-0"*	16'-0"*	16'-0"*	12'-11"*	12'-11"*	10'-5"*
	800JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	13'-5"
	800JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-7"
	800JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
15	362JS300-43	33	8'-0"	4'-10"		3'-3"					
	362JS300-54	50	10'-4"	6'-4"	3'-3"	4'-5"					
	362JS300-68	50	13'-8"	8'-7"	4'-7"	6'-1"	3'-7"		3'-7"		
	362JS300-97	50	16'-0"	12'-6"	6'-11"	9'-0"	5'-6"		5'-6"	3'-2"	
	600JS300-43	33	16'-0"	16'-0"	10'-5"	10'-8"*	8'-6"	4'-6"	6'-8"*	5'-2"*	
	600JS300-54	50	20'-0"	20'-0"	13'-5"	17'-2"	10'-11"	6'-0"	10'-11"	6'-10"	3'-6"
	600JS300-68	50	20'-0"	20'-0"	17'-9"	20'-0"	14'-6"	8'-1"	14'-6"	9'-2"	4'-11"
	600JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	11'-11"	20'-0"	13'-5"	7'-5"
	800JS300-43	33	16'-0"	16'-0"	16'-0"	14'-10"*	14'-10"*	10'-2"*	9'-6"*	9'-6"*	6'-3"*
	800JS300-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	13'-1"	19'-7"*	14'-9"*	8'-3"
	800JS300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-3"	20'-0"	19'-4"	11'-0"
	800JS300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	16'-0"

Allowable Opening Widths (3.5” Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 1.0 times the listed wind load
2. Header to be installed with open side facing up
3. Minimum opening height based on 36 inches (center of wall). This table is also applicable for door openings
4. Limitations to opening widths are 16'-0" for 3-5/8" members and 20'-0" for 6" & 8" members
5. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
6. Calculated flexural strength of the jamb based upon Lb <= Lu 7
7. This table is applicable for a curtain wall application, but it is not intended for load bearing walls
8. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
9. Tabled widths marked with an * (asterisk) require web stiffening at each end of the jamb. Web crippling check uses 1" of bearing length
10. The strength analysis included separate bending and shear checks plus combined bending and shear
11. Unless connections are engineered separately, jambs must be the same gauge and strength as the header
12. Opening width is also limited by header and clip considerations. See clip and header table for limits
13. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
14. Table to be used by qualified engineers only.

Single Framing Used as Interior Jamb Studs

Wall Height (ft)	Section	Fy (ksi)	5psf			10psf			15psf		
			L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600
9	362JS350-54	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	10'-5"	16'-0"	11'-9"	6'-6"
	362JS350-68	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	14'-2"	16'-0"	15'-11"	8'-11"
	362JS350-97	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	13'-1"
	600JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	600JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
11	362JS350-54	50	16'-0"	16'-0"	11'-6"	14'-9"	9'-4"	5'-0"	9'-4"	5'-9"	
	362JS350-68	50	16'-0"	16'-0"	15'-7"	16'-0"	12'-9"	7'-0"	12'-9"	8'-0"	4'-2"
	362JS350-97	50	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	10'-5"	16'-0"	11'-9"	6'-5"
	600JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	18'-10"	20'-0"	20'-0"	12'-1"
	600JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	16'-3"
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
13	362JS350-54	50	16'-0"	11'-8"	6'-5"	8'-5"	5'-1"		5'-1"		
	362JS350-68	50	16'-0"	15'-9"	8'-10"	11'-5"	7'-2"	3'-8"	7'-2"	4'-3"	
	362JS350-97	50	16'-0"	16'-0"	13'-0"	16'-0"	10'-7"	5'-9"	10'-7"	6'-7"	3'-4"
	600JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	19'-1"	10'-10"	19'-1"*	12'-3"	6'-9"
	600JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	14'-8"	20'-0"	16'-5"	9'-3"
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	13'-8"
	800JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	14'-6"
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
15	362JS350-54	50	11'-5"	7'-1"	3'-8"	5'-0"					
	362JS350-68	50	15'-6"	9'-10"	5'-3"	7'-0"	4'-2"		4'-2"		
	362JS350-97	50	16'-0"	14'-4"	8'-0"	10'-4"	6'-5"	3'-3"	6'-5"	3'-9"	
	600JS350-54	50	20'-0"	20'-0"	14'-8"	18'-9"	12'-0"	6'-7"	12'-0"	7'-6"	3'-11"
	600JS350-68	50	20'-0"	20'-0"	19'-8"	20'-0"	16'-1"	9'-1"	16'-1"	10'-3"	5'-6"
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	13'-5"	20'-0"	15'-1"	8'-5"
	800JS350-54	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	14'-3"	20'-0"*	16'-0"*	9'-0"
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	18'-11"	20'-0"	20'-0"	12'-1"
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-9"

Allowable Opening Widths (3.0" Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up
3. Minimum opening height based on 36 inches (center of wall). This table is also applicable for door openings
4. Limitations to opening widths are 16'-0" for 3-5/8" members and 20'-0" for 6" & 8" members
5. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
6. Calculated flexural strength of the jamb based upon Lb <= Lu 7
7. This table is applicable for a curtain wall application, but it is not intended for load bearing walls
8. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
9. Tabled widths marked with an * (asterisk) require web stiffening at each end of the jamb. Web crippling check uses 1" of bearing length
10. The strength analysis included separate bending and shear checks plus combined bending and shear
11. Unless connections are engineered separately, jambs must be the same gauge and strength as the header
12. Opening width is also limited by header and clip considerations. See clip and header table for limits
13. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
14. Table to be used by qualified engineers only.

Single Framing Used as Exterior Jamb Studs

Wall Height (ft)	Section	Fy (ksi)	20psf			25psf			30psf		
			L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600
9	362J300-43	33	7'-9"*	7'-9"*	4'-9"	5'-10"*	5'-10"*	3'-6"	4'-8"*	4'-8"*	
	362J300-54	50	16'-0"	11'-6"	6'-4"	12'-7"	8'-11"	4'-9"	10'-3"	7'-2"	3'-8"
	362J300-68	50	16'-0"	15'-2"	8'-6"	16'-0"	11'-10"	6'-6"	14'-7"	9'-7"	5'-2"
	362J300-97	50	16'-0"	16'-0"	12'-4"	16'-0"	16'-0"	9'-7"	16'-0"	13'-11"	7'-9"
	600J300-43	33	15'-10"*	15'-10"*	15'-10"*	12'-5"*	12'-5"*	12'-5"*	10'-2"*	10'-2"*	10'-2"*
	600J300-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	18'-3"*	20'-0"*	20'-0"*	14'-11"*
	600J300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	19'-8"*
	600J300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800J300-43	33	16'-0"*	16'-0"*	16'-0"*	15'-6"*	15'-6"*	15'-6"*	12'-9"*	12'-9"*	12'-9"*
	800J300-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*
	800J300-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*
	800J300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
11	362J300-43	33	4'-6"	4'-2"		3'-3"	3'-1"				
	362J300-54	50	9'-1"	5'-7"		7'-0"	4'-2"		5'-7"	3'-3"	
	362J300-68	50	12'-1"	7'-7"	3'-11"	9'-5"	5'-9"		7'-7"	4'-7"	
	362J300-97	50	16'-0"	11'-1"	6'-0"	13'-7"	8'-7"	4'-6"	11'-1"	6'-11"	3'-6"
	600J300-43	33	10'-0"*	10'-0"*	9'-3"*	7'-9"*	7'-9"*	7'-1"*	6'-3"*	6'-3"*	5'-8"*
	600J300-54	50	20'-0"*	20'-0"*	11'-11"	16'-0"*	16'-0"*	9'-3"	13'-2"*	13'-2"*	7'-5"
	600J300-68	50	20'-0"	20'-0"	15'-9"	20'-0"*	20'-0"*	12'-4"	18'-6"*	17'-8"*	10'-0"
	600J300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-9"	20'-0"	20'-0"	14'-6"
	800J300-43	33	13'-4"*	13'-4"*	13'-4"*	10'-5"*	10'-5"*	10'-5"*	8'-6"*	8'-6"*	8'-6"*
	800J300-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	19'-6"*	17'-8"*	17'-8"*	16'-0"*
	800J300-68	50	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*
	800J300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
13	362J300-43	33									
	362J300-54	50	4'-11"			3'-8"					
	362J300-68	50	6'-9"	4'-0"		5'-1"			4'-0"		
	362J300-97	50	9'-11"	6'-2"	3'-1"	7'-8"	4'-7"		6'-2"	3'-7"	
	600J300-43	33	6'-9"*	6'-9"*	5'-0"*	5'-1"*	5'-1"*	3'-9"*	4'-0"*	4'-0"*	
	600J300-54	50	14'-1"*	12'-1"	6'-8"	11'-0"*	9'-4"	5'-0"	8'-11"*	7'-7"	3'-11"
	600J300-68	50	19'-8"	16'-0"	9'-0"	15'-5"	12'-6"	6'-11"	12'-8"	10'-2"	5'-6"
	600J300-97	50	20'-0"	20'-0"	13'-1"	20'-0"	18'-0"	10'-2"	19'-10"	14'-9"	8'-3"
	800J300-43	33	9'-5"*	9'-5"*	9'-5"*	7'-3"*	7'-3"*	7'-3"*	5'-10"*	5'-10"*	5'-10"*
	800J300-54	50	19'-5"*	19'-5"*	14'-5"*	15'-3"*	15'-3"*	11'-3"*	12'-6"*	12'-6"*	9'-2"*
	800J300-68	50	20'-0"*	20'-0"*	18'-11"	20'-0"*	20'-0"*	14'-10"	18'-9"*	18'-9"*	12'-1"
	800J300-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	17'-7"
15	362J300-43	33									
	362J300-54	50									
	362J300-68	50	3'-11"								
	362J300-97	50	6'-0"	3'-6"		4'-6"			3'-6"		
	600J300-43	33	4'-8"*	4'-8"*		3'-6"*	3'-6"*				
	600J300-54	50	10'-2"	7'-5"	3'-10"	7'-10"	5'-7"		6'-4"	4'-5"	
	600J300-68	50	14'-3"	9'-11"	5'-4"	11'-2"	7'-8"	4'-0"	9'-1"	6'-1"	3'-1"
	600J300-97	50	20'-0"	14'-5"	8'-1"	17'-7"	11'-3"	6'-2"	14'-5"	9'-2"	4'-10"
	800J300-43	33	6'-10"*	6'-10"*	6'-10"*	5'-2"*	5'-2"*	5'-2"*	4'-1"*	4'-1"*	4'-1"*
	800J300-54	50	14'-5"*	14'-5"*	8'-11"	11'-3"*	11'-3"*	6'-10"	9'-2"*	9'-2"*	5'-5"
	800J300-68	50	20'-0"*	20'-0"*	11'-10"	16'-8"*	16'-4"*	9'-2"	13'-8"*	13'-4"*	7'-5"
	800J300-97	50	20'-0"	20'-0"	17'-3"	20'-0"	20'-0"	13'-6"	20'-0"	19'-4"	11'-0"

Allowable Opening Widths (3.5” Flange)

Interior Structural Composite Table Notes

1. Deflections are computed using 0.7 times the listed wind load
2. Header to be installed with open side facing up
3. Minimum opening height based on 36 inches (center of wall). This table is also applicable for door openings
4. Limitations to opening widths are 16'-0" for 3-5/8" members and 20'-0" for 6" & 8" members
5. Table calculations are in accordance with AISI 2001 NASPEC w/2004 supplement
6. Calculated flexural strength of the jamb based upon Lb <= Lu 7
7. This table is applicable for a curtain wall application, but it is not intended for load bearing walls
8. Tables were prepared using a 16"o.c. spacing from the jamb stud to the first adjacent typical wall stud
9. Tabled widths marked with an * (asterisk) require web stiffening at each end of the jamb. Web crippling check uses 1" of bearing length
10. The strength analysis included separate bending and shear checks plus combined bending and shear
11. Unless connections are engineered separately, jambs must be the same gauge and strength as the header
12. Opening width is also limited by header and clip considerations. See clip and header table for limits
13. Headers are assumed to be connected to the jamb with matching 14 gage 50 ksi MBA clips using 8 #10-16 screws
14. Table to be used by qualified engineers only.

Single Framing Used as Exterior Jamb Studs

Wall Height (ft)	Section	Fy (ksi)	5psf			10psf			15psf		
			L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600
9	362JS350-54	50	16'-0"	12'-9"	7'-0"	13'-4"	9'-11"	5'-4"	10'-10"	8'-0"	4'-2"
	362JS350-68	50	16'-0"	16'-0"	9'-8"	16'-0"	13'-5"	7'-5"	15'-2"	10'-11"	5'-11"
	362JS350-97	50	16'-0"	16'-0"	14'-2"	16'-0"	16'-0"	11'-0"	16'-0"	15'-11"	8'-11"
	600JS350-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	19'-10"*	20'-0"*	20'-0"*	16'-3"*
	600JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
	800JS350-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
11	362JS350-54	50	10'-1"	6'-3"	3'-2"	7'-9"	4'-8"		6'-3"	3'-8"	
	362JS350-68	50	13'-9"	8'-8"	4'-7"	10'-8"	6'-7"	3'-4"	8'-8"	5'-3"	
	362JS350-97	50	16'-0"	12'-8"	7'-0"	15'-7"	9'-10"	5'-4"	12'-8"	8'-0"	4'-2"
	600JS350-54	50	20'-0"*	20'-0"*	13'-0"	16'-9"*	16'-9"*	10'-1"	13'-9"*	13'-9"*	8'-2"
	600JS350-68	50	20'-0"	20'-0"	17'-6"	20'-0"*	20'-0"*	13'-8"	19'-1"*	19'-1"*	11'-2"
	600JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-11"	20'-0"	20'-0"	16'-4"
	800JS350-54	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	18'-0"*	18'-0"*	17'-4"*
	800JS350-68	50	20'-0"	20'-0"	20'-0"	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"
13	362JS350-54	50	5'-7"	3'-2"		4'-2"			3'-2"		
	362JS350-68	50	7'-9"	4'-8"		5'-11"	3'-5"		4'-8"		
	362JS350-97	50	11'-5"	7'-2"	3'-8"	8'-10"	5'-5"		7'-2"	4'-3"	
	600JS350-54	50	14'-9"*	13'-2"*	7'-4"	11'-6"*	10'-3"*	5'-7"	9'-5"*	8'-4"*	4'-5"
	600JS350-68	50	20'-0"	17'-9"	10'-0"	15'-11"	13'-11"	7'-9"	13'-1"	11'-4"	6'-2"
	600JS350-97	50	20'-0"	20'-0"	14'-9"	20'-0"	20'-0"	11'-6"	20'-0"	16'-7"	9'-4"
	800JS350-54	50	19'-10"*	19'-10"*	15'-8"*	15'-8"*	15'-8"*	12'-3"*	12'-10"*	12'-10"*	9'-11"*
	800JS350-68	50	20'-0"*	20'-0"*	20'-0"*	20'-0"*	20'-0"*	16'-4"*	19'-3"*	19'-3"*	13'-4"*
	800JS350-97	50	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-6"
15	362JS350-54	50	3'-1"								
	362JS350-68	50	4'-7"			3'-4"					
	362JS350-97	50	7'-0"	4'-2"		5'-3"	3'-0"		4'-2"		
	600JS350-54	50	10'-8"	8'-1"	4'-3"	8'-3"*	6'-2"	3'-1"	6'-8"*	4'-11"	
	600JS350-68	50	14'-9"	11'-1"	6'-1"	11'-6"	8'-7"	4'-6"	9'-4"	6'-11"	3'-6"
	600JS350-97	50	20'-0"	16'-3"	9'-2"	17'-8"	12'-9"	7'-0"	14'-6"	10'-4"	5'-7"
	800JS350-54	50	14'-9"*	14'-9"*	9'-9"	11'-7"*	11'-7"*	7'-6"	9'-5"*	9'-5"*	6'-0"
	800JS350-68	50	20'-0"*	20'-0"*	13'-1"	17'-2"*	17'-2"*	10'-2"	14'-1"*	14'-1"*	8'-3"
	800JS350-97	50	20'-0"	20'-0"	19'-2"	20'-0"	20'-0"	15'-0"	20'-0"	20'-0"	12'-3"